SAG HARBOR

FORMER MANUFACTURED GAS PLANT SITE

REMEDIAL INVESTIGATION REPORT

Prepared for:

KEYSPAN ENERGY
One MetroTech Center
Brooklyn, New York

Prepared by:

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

JUNE 2002

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
REMEDIAL INVESTIGATION REPORT

TABLE OF CONTENTS

Section	Title	Page
	EXECUTIVE SUMMARY	ES-1
1.0	**INTRODUCTION**	1-1
	1.1 Overview of Report Organization	1-2
	1.2 Project Objectives	1-2
	1.3 Site Location and Description	1-3
	1.4 Site History	1-6
	1.4.1 Former MGP Site	1-6
	1.5 Project Background	1-9
	1.5.1 Land Use and Demographics	1-9
	1.5.2 Climate	1-11
	1.5.3 Topography	1-14
	1.5.4 Storm Water	1-17
	1.5.5 Surface Water	1-17
	1.5.6 Regional Soil Classifications	1-18
	1.5.7 Regional Geology	1-19
	1.5.8 Regional Hydrogeology	1-22
	1.5.9 Potable Water Supply	1-25
	1.6 Environmental Database Searches	1-28
	1.7 Previous Site Investigations	1-31
	1.8 Cut and Plug Interim Remedial Measures	1-38
2.0	**FIELD INVESTIGATION PROGRAM**	2-1
	2.1 Organization and Overview of Field Program Activities	2-1
	2.2 Field Methods/Procedures	2-3
	2.3 Existing Well Inventory and Sampling	2-12
	2.4 On-site Field Investigation Program	2-14
	2.5 Perimeter and Location-Specific Air Monitoring	2-20
	2.6 Off-site Field Investigation Program	2-21
	2.7 Water Level Measurements	2-25
	2.8 Cut and Plug Interim Remedial Measures	2-29
	2.9 Surveying and Mapping	2-30
	2.10 Tidal Survey	2-30
	2.11 Laboratory Analysis and Data Management	2-31

TABLE OF CONTENTS (continued)

Section	Title	Page
2.12	Data Validation/Data Usability	2-32
2.12.1	Sample Collection and Analysis	2-32
2.12.2	Data Quality Objectives	2-33
2.12.3	Data Quality and Usability	2-34
3.0	**SITE GEOLOGY AND HYDROGEOLOGY**	3-1
3.1	Introduction	3-1
3.2	Site Stratigraphy	3-2
3.2.1	Fill Deposits	3-2
3.2.2	Peat and Silt/Clay Units	3-3
3.2.3	Shallow Sand Unit	3-6
3.2.4	Deep Sand Unit	3-9
3.3	Groundwater Flow and Hydraulic Gradients	3-10
3.3.1	Tidal Influences on Groundwater Levels	3-11
3.3.2	Horizontal Groundwater Flow Patterns	3-15
3.3.3	Estimated Groundwater Flow Velocities	3-23
3.3.4	Vertical Groundwater Flow	3-27
4.0	**NATURE AND EXTENT OF CHEMICAL CONSTITUENTS**	4-1
4.1	Introduction	4-1
4.2	On-site Field Investigation	4-5
4.2.1	Surface Soil	4-5
4.2.2	Subsurface Soil	4-8
4.2.3	Groundwater	4-22
4.2.4	Ambient Air	4-34
4.3	Off-site Field Investigation Program	4-34
4.3.1	Subsurface Soil	4-34
4.3.2	Groundwater	4-37
4.3.3	Soil Vapor	4-42
5.0	**FATE AND TRANSPORT OF CHEMICAL CONSTITUENTS**	5-1
5.1	Introduction	5-1
5.2	On-site Source Areas	5-4
5.2.1	Transport and Fate of NAPL	5-4
5.2.2	Transport of Chemical Constituents from Source Areas to the Atmosphere	5-9
5.2.3	Transport of Chemical Constituents from Source Areas to Groundwater	5-9

TABLE OF CONTENTS (continued)

Section	Title	Page
	5.2.4 Weathering of Source Areas	5-10
5.3	Off-site Transport Mechanisms	5-10
	5.3.1 Transport of Chemical Constituents Present in Surface Soil	5-10
	5.3.2 Transport of Chemical Constituents in Groundwater	5-11
	5.3.3 Transport of Chemical Constituents from Groundwater to Soil Vapor	5-12
6.0	**FINDINGS**	6-1
6.1	On-site Field Investigation	6-1
6.2	Off-site Field Investigation	6-6
7.0	**REFERENCES**	7-1

List of Drawings

1	Previous Sample Locations	1-41
2	Sample Location Map	2-37
3A	Geologic Cross Sections AA' and BB'	3-29
3B	Geologic Cross Sections CC' and DD'	3-30

List of Figures

1-1	Site Location Map	1-4
1-2	Site Map	1-5
1-3	Historic Site Features	1-8
1-4	Zoning Map	1-12
1-5	Topographic Map	1-16
1-6	Regional Geological Cross Section of the South Fork of Long Island	1-20
1-7	North-South Geologic Cross Section Through Sag Harbor	1-21
1-8	Water Table Contour Map for Eastern Suffolk County	1-23
1-9	Public and Private Wells Within a One-half Mile Radius of Site	1-26
1-10	Identified Areas of Environmental Concern within Study Area	1-29
1-11	Cut and Plug IRM Excavations	1-40
2-1	Typical Construction of New Monitoring Well Clusters	2-7

TABLE OF CONTENTS (continued)

List of Figures (continued)

3-1 Thickness and Extent of Peat Deposit 3-5
3-2 Thickness and Extent of Silt/Clay Unit 3-7
3-3 Tidal Fluctuations of Shallow Wells.. 3-12
3-4 Tidal Fluctuations of Intermediate and Deep Wells 3-13
3-5 Water Table Contour Map, High Tide, April 23, 2001 3-16
3-6 Potentiometric Surface of Intermediate Groundwater Zone, High Tide, April 23, 2001 3-17
3-7 Water Table Contour Map, Low Tide, December 18, 2000 3-19
3-8 Potentiometric Surface of Intermediate Groundwater Zone, Low Tide, December 18, 2000 3-20
3-9 Water Table Contour Map, Low Tide, April 23, 2001 3-21
3-10 Potentiometric Surface of Intermediate Groundwater Zone, Low Tide, April 23, 2001 3-22
3-11 Water Table Contour Map, Mid-Tide (Flooding), April 26, 2000 3-24
3-12 Water Table Contour Map, Mid-Tide (Ebbing), April 26, 2000 3-25

4-1 Chemical Data Summary for Surface Soil Samples 4-6
4-2 Total BTEX/PAH in Shallow Subsurface Soil (0 to 2 feet) 4-11
4-3 Total BTEX/PAH in Shallow Subsurface Soil (2 to 8 feet) 4-12
4-4 Total BTEX/PAH in Intermediate Subsurface Soil (8 to 18 feet) 4-13
4-5 Total BTEX/PAH in Deep Subsurface Soil (Greater than 18 feet) 4-14
4-6 Total BTEX/PAH in Shallow Groundwater (0 to 10 feet) 4-25
4-7 Total BTEX/PAH in Intermediate Groundwater (25 to 45 feet) 4-26
4-8 Total BTEX/PAH in Deep Groundwater (45 to 75 feet) 4-27

5-1 Locations Where Evidence of NAPL and Soil Staining was Observed Above the Peat Silt/Clay Unit.. 5-6
5-2 Locations Where Evidence of NAPL and Soil Staining was Observed Below the Peat Silt/Clay Unit 5-8

List of Tables

1-1 Monthly Average Temperature and Precipitation for Bridgehampton, New York… 1-13
1-2 Average Monthly Wind Speed by Direction and Percent Duration from Each Direction for MacArthur Airport, Islip, New York.................. 1-15
1-3 Data on Public and Private Water Supply Wells Within a One-half Mile Radius of Site. 1-27
1-4 Identified Areas of Environmental Concern within Study Area................ 1-30

List of Tables (continued)

2-1 Sample Media, Chemical Constituents and Analytical Methods................2-2
2-2 Monitoring Well Construction Summary 2-8
2-3 Existing Monitoring Well Inventory...2-13
2-4 Summary of On-site Field Investigation Program......................................2-15
2-5 Summary of Off-site Field Investigation Program 2-22
2-6 Groundwater and Surface Water Measurements and Calculated Elevations...2-26

3-1 Geotechnical Analytical Results for Selected Soil Samples.......................3-4

4-1 Typical Metal Concentrations for Soil within Eastern United States 4-2
4-2 Comparison of 1995 BTEX and PAH Groundwater Data with 2000 Groundwater Data for Existing On-site Monitoring Wells................4-31

5-1 Relative Influence of Chemical Properties and Processes Related to the Fate and Transport of BTEX and PAH Compounds 5-3

TABLE OF CONTENTS (continued)

APPENDICES

Title Appendix

Database Search Reports....A

Cut and Plug IRM Analytical Results....B

Boring Logs C

Analytical Methods and Detection Limits ....D

Analytical Results - Data Summary Tables ....E

Tables Summarizing Chemical Constituents Typically
Associated with Former MGP Sites and NYSDEC SCGs .... F

Qualitative Human Exposure Assessment and
Fish and Wildlife Resources Impact Analysis ....G

KEYSPAN

KeySpan Corporation
Environmental Engineering Department
175 East Old Country Road
Hicksville, New York 11801-4280

June 28, 2002

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
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 final report:

"Sag Harbor Former Manufactured Gas Plant Site
Remedial Investigation Report
June 2002"

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

This Remedial Investigation Report presents the findings of the investigation completed in accordance with the final Remedial Investigation/Feasibility Study Work Plan for the Sag Harbor former MGP site, dated February 2000. As you are aware, KeySpan is presently conducting a supplemental investigation based on the recommendations in the enclosed report, discussions with the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), as well as an approved Work Plan. The results of the supplemental investigation will be presented in a separate report.

If you have any questions, please do not hesitate to contact me at (516) 545-2563.

Very truly yours,

Theodore O. Leissing, Jr.

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

TOL/MM(t)/ld
Enclosures
cc: W. Parish, NYSDEC Region 1 (1 copy)
R. Mitchell, NYSDOH (1 copy, 1 CD)
G. Rosser, SCDHS (1 copy)
S. Robbins, SCDHS (1 copy)
L. Liebs, KSE (1 CD)
J. Reilly, KSE (1 CD)
♦1620\MISC02LTR-13.DOC

EXECUTIVE SUMMARY

Introduction

KeySpan Energy (KSE) 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) of a former manufactured gas plant (MGP) site located in Sag Harbor, Suffolk County, New York. As required by the Order on Consent, the investigation was completed in accordance with the scope of work presented in the final Remedial Investigation/Feasibility Study Work Plan for the Sag Harbor Former MGP Site, dated February 2000.

This Remedial Investigation report presents: introductory and background information related to the site; an overview of historic and current site operations; a discussion of the investigation program; a discussion of the geology and hydrogeology of the investigation area; discussions of the nature and extent, and fate and transport of chemical constituents in the environment related to the site; and a summary of the findings of the overall Remedial Investigation and associated interim remedial measures (IRMs). In addition, the data and results of the Remedial Investigation were used to prepare a Qualitative Human Exposure Assessment and a Fish and Wildlife Resources Impact Analysis (FWRIA).

Summary of Findings

Based on the findings of the investigation, impacts to the site as well as to off-site subsurface soil and groundwater have been documented that are characteristically typical of former MGP sites. However, it is important to note:

1. The chemical constituents detected in soil and groundwater is 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. Based on the current understanding of the nature and extent of chemical constituents at and adjacent to the site, additional field investigation on-site as well as off-site was initiated in March 2002 as part of a supplemental investigation. The findings of this investigation will be presented in a separate report.

4. The Remedial Investigation and Qualitative Human Exposure Assessment have indicated that there are pathways through which people on site and in the community could be exposed to potentially hazardous materials related to former MGP activities. As mentioned above, KeySpan is initiating additional site investigation work, with NYSDEC approval, to further define the limits of any off-site migration of BTEX and PAHs. It is anticipated that analytical results from the supplemental investigation may result in minor modifications to the list of COPCs as well as refinement of potential exposure scenarios associated with off-site human populations. These data will be evaluated to determine the need for remedial actions. Should remedial action be warranted, KeySpan will develop such actions in the next phase of this program, the development of a Remedial Action Plan.

5. 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 wildlife present, remedial activities specifically directed at wildlife exposure are not required at this time. However, data collected under the additional site investigation will be used to update this FWRIA and to aid in determining if remedial activities specific to wildlife exposures are warranted. If warranted, these actions will be addressed during the development of a Remedial Action Plan.

Site Location and Description

The Sag Harbor former MGP site is located on the south fork of Long Island in the Village of Sag Harbor, Suffolk County, New York. The site is approximately 0.8 acre in area. The site is bordered by 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.

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 conveys 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 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 periods of heavy precipitation, 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 on 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 boundaries of the Sag Harbor former MGP site. Sag Harbor Bay, which is located approximately 1/8 of a mile northeast of the site, and Sag Harbor Cove, which is located approximately 200 feet northwest of the site, are both listed as Class SA saline surface water bodies by the NYSDEC. This classification indicates that these waters are suitable for shellfishing for market purposes and for primary and secondary contact recreation and fishing.

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. 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. However, the more silt-rich lenses may serve as "traps" for any dense nonaqueous phase liquids (DNAPLs) that may have been released to the subsurface environment.

Depth to groundwater at the site ranges from approximately 0.5 to 1.6 feet below ground surface (bgs). Groundwater 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 areas 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.

Site History

Operations

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, gas storage capacity was increased significantly, including the construction of aboveground high-pressure storage tanks, and production at the Sag Harbor site ceased. 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

Several investigations were conducted between 1987 and 1989 at a number of properties located along Bridge Street, including the Sag Harbor former MGP site, that were originally initiated in response to concerns expressed by the Suffolk County Water Authority (SCWA) associated with a release from a fuel oil tank. Based on the results of these investigations, it was determined that a number of chemical constituents detected in soil samples were associated with typical manufactured gas plants while others were associated with fuel oil. Sources of PCBs, pesticides, and various inorganic chemicals detected in soil were unknown. As a result, the "Sag Harbor Bridge Street Site," which included the former MGP site as well as several adjacent properties, was listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites (Site Code 1-52-126). Based on the results of a Preliminary Site Assessment completed in 1993, it was determined that listed and/or characteristic hazardous waste, as defined by 6 NYCRR Part 371, was not present at the Sag Harbor former MGP site and the adjacent properties (collectively referred to as the "Sag Harbor Bridge Street Site"). Therefore, the "Sag Harbor Bridge Street Site," including the former MGP site, was delisted from the NYSDEC Registry of Inactive Hazardous Waste Sites in March 1995. In 1995, LILCO initiated an investigation to further investigate conditions at the former MGP site. This investigation, completed in 1997, determined that groundwater contained chemical constituents at concentrations above established quality guidance values. Based on the finding of this investigation, the NYSDEC listed the former MGP site on the Registry of Inactive Hazardous Waste Sites in January of 1998 (Site Code 1-52-159).

Remedial Investigation Objectives

The objectives of the Remedial Investigation were to:

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

The Remedial Investigation field program included the following activities:

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

Remedial Investigation Findings

Polycyclic aromatic hydrocarbons (PAHs) were detected in on-site surface soil up to a maximum total PAH concentration of 951 milligrams per kilogram (mg/kg). 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. Subsurface soil contains elevated concentrations of benzene, toluene, ethylbenzene and 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 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 to 90 feet bgs. However, BTEX and PAH concentrations appear to rapidly decrease with increasing depth even in areas exhibiting NAPL.

Although evidence of NAPL was observed in several on-site and off-site subsurface soil samples, monitoring wells exhibited little evidence of any measurable separate-phase NAPL, with the exception of on-site shallow well MW-5 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.

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 are 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. With the exception of MW-05, on-site monitoring wells did not exhibit detectable levels of NAPL. 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.

Based on chemical data and field observations, the following summarizes the findings of the Remedial Investigation:

- Subsurface soil containing BTEX and PAHs appears to extend a limited distance beyond the northern and southern site boundaries.
- Off-site migration of BTEX and PAHs appears to be occurring in shallow groundwater above the peat silt/clay unit to the north, northwest, west and south of the site. Additionally, while concentrations are generally lower, migration of BTEX and PAHs also appears to be occurring in groundwater below the peat silt/clay to the north and to a lesser extent to the west.
- Shallow groundwater samples collected from the northernmost and westernmost sample locations indicate BTEX and PAHs are not present at these areas.
- Intermediate groundwater samples collected from the northernmost and westernmost sample locations also indicate that BTEX and PAHs are not present at these areas, with the exception of an estimated concentration of 2 ug/l of the PAH acenaphthene in the northernmost location.

The nearest active public water supply well field is located over 1 mile to the southeast of the site. The predominate direction of groundwater flow in the area is to the northwest. As a result, this public water supply well field can be considered to be located upgradient of the former MGP site. Based on the location of the public water supply well field, and the depth of the supply wells, there is virtually no potential of site related constituents of influencing the water quality of this well field. NYSDEC well records indicate the presence of one privately owned well located approximately 500 feet southwest of the site. However, this well is located lateral to the site based on groundwater flow directions. As a result, the potential for site related constituents to influence the water quality of this well is remote.

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 the qualitative human exposure assessment. It should be noted that additional investigation work to further define the limits of any off-site migration of BTEX and PAHs is being conducted at the site. Analytical results from the supplemental investigation may result in refinement of the list of COPCs and potential exposure scenarios associated with off-site human populations.

Under current site use conditions, potential 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).

Under future site use conditions, potential 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 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 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 on-site 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.

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 underneath structures was assumed to 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 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.

A private well survey is planned in the vicinity of the Sag Harbor site. The survey area was identified by agreement between NYSDEC and KeySpan on April 3, 2002. Although it is unlikely that individuals utilizing a private well as a water supply will be identified, potential exposure to groundwater via dermal contact, ingestion, and inhalation of volatiles while showering (for off-site residents) is included here as potential exposure pathways pending results of the survey. 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. The potential for this exposure will be refined upon receipt of analytical results associated with the supplemental investigation.

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.

A summary of the potential exposure pathways, by population and medium, is presented in Table 2-2 of the qualitative human exposure assessment.

Fish and Wildlife Resources Impact Analysis Findings

Following the Appendix 1C Decision Key in NYSDEC's FWRIA guidance, a FWRIA was deemed required. The analysis indicates 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 additional site investigation will be evaluated to aid in determining if remedial activities specific to wildlife are warranted.

Recommendations

Based on the current understanding as to the nature and extent of off-site migration of BTEX and PAHs, additional field investigation is recommended on-site and off-site as part of a supplemental investigation. The objectives of this supplemental investigation include:

- 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.

1.0 INTRODUCTION

KeySpan Energy (KSE) 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 an approximate 0.8-acre former manufactured gas plant (MGP) site located in Sag Harbor, Suffolk County, New York. As required by the Consent Order, the investigation was completed in accordance with the scope of work presented in the final Remedial Investigation/Feasibility Study Work Plan for the Sag Harbor former MGP site, dated February 2000.

This report presents:

- introductory and background information related to the site,
- an overview of historic and current operations at the site,
- a discussion of the investigation program,
- a discussion of the geology and hydrogeology of the investigation area,
- a discussion of the nature and extent of chemical constituents in the environment,
- a discussion of the fate and transport of chemical constituents in the environment, and
- a summary of findings.

In addition, it is important to note that this report includes a Qualitative Human Exposure Assessment and a Fish and Wildlife Resources Impact Analysis (FWRIA), which have been prepared to identify potential human exposure pathways and environmental risks associated with the Sag Harbor former MGP site. A Feasibility Study (FS) will also be prepared, as described in the final Work Plan, and presented as a separate document.

1.1 Overview of Report Organization

This report is organized as follows:

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

1.2 Project Objectives

As stated in the work plan for this project, the objectives of the Remedial Investigation, Qualitative Human Exposure Assessment and FWRIA were to:

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

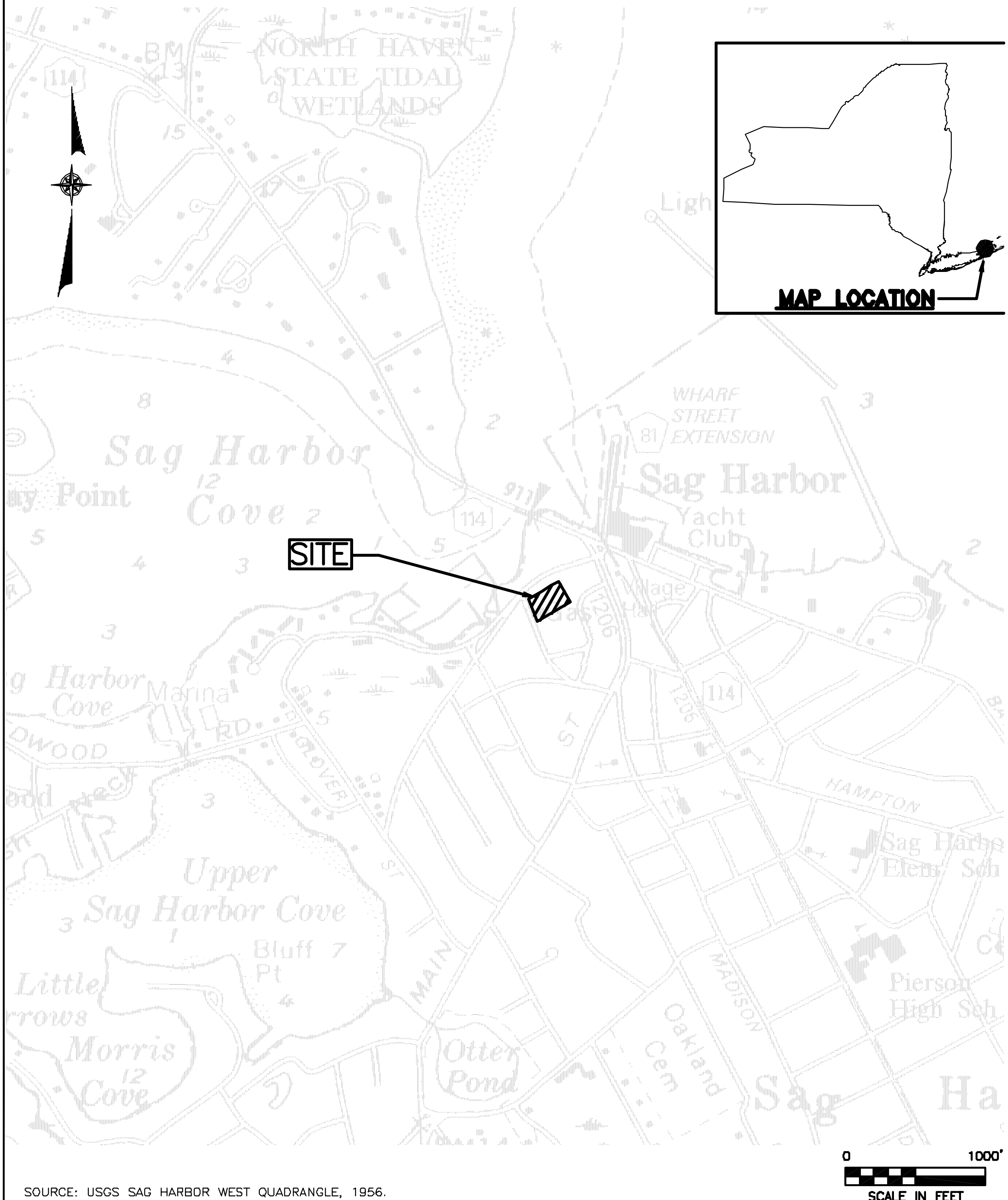
- Identify the potential human exposure pathways and environmental risks associated with chemical constituents found in the environment in order to determine the need for remedial action; and
- Obtain sufficient data to allow for an evaluation of the need for remedial action and to evaluate remedial alternatives leading toward the design and subsequent implementation of a selected remedy (a feasibility study will be prepared as a separate document).

The Remedial Investigation did not have as an objective and did not evaluate other off-site sources of chemical constituents that may be contributing to the presence of chemicals found at the site and found downgradient of the site.

1.3 Site Location and Description

The 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 south of the confluence of Sag Harbor Bay with Sag Harbor Cove (see **Figure 1-2**). The site is approximately 0.8 acre in area. The site is bordered by 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 (see **Figure 1-2**).

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 area of the site and conveys 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 high chain-link fence.



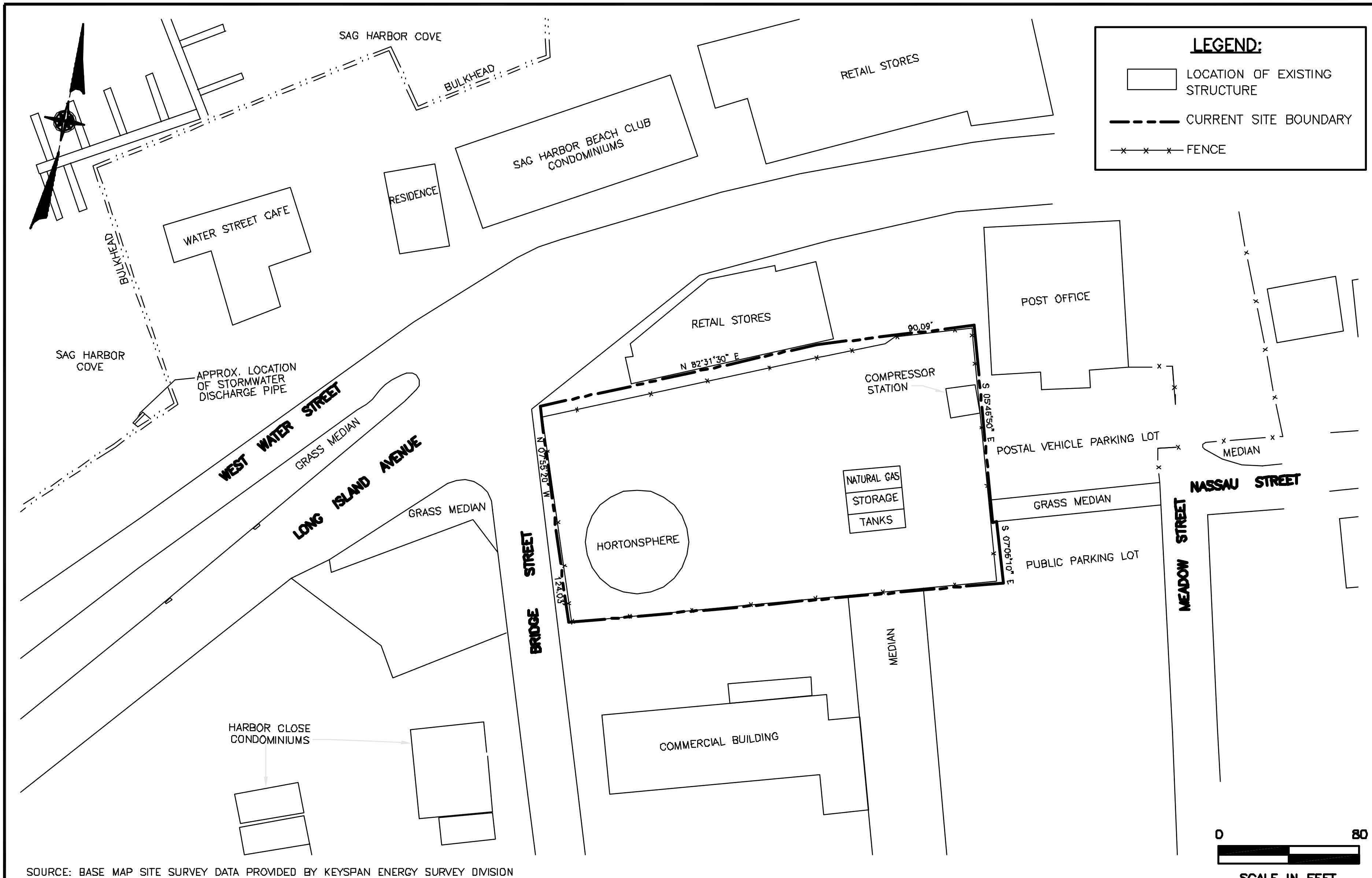
SOURCE: USGS SAG HARBOR WEST QUADRANGLE, 1956.

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

SITE LOCATION MAP

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

FIGURE 1–1



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

SITE MAP

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

FIGURE 1–2

1.4 Site History

The following discussion is based on information provided by KeySpan. The property encompassing what is now referred to as the Sag Harbor former MGP site 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. These companies included Sag Harbor Gas Light Company (by 1862), UGI of Philadelphia (by 1885) and the Sag Harbor Light Company (by 1914).

The original service area associated with the site was limited to the Village and environs of Sag Harbor and a number of small, seasonal communities at the eastern end of Long Island. In 1916, the Long Island Gas Corporation took control of the operation and increased production capacity. At that time, the operation included gas holders, a purifying house, oil tanks, a tar separator and several other production buildings. In 1929, the Long Island Lighting Company (LILCO) purchased the site. After the acquisition of the site, LILCO connected its gas distribution system in eastern Long Island to the Bay Shore former MGP site. With this shift in function from gas manufacturing to serving as a "link" in the distribution system in 1929, gas production at the Sag Harbor site ceased. Storage capacity, however, was increased significantly by utilizing aboveground high-pressure storage tanks. Structures which had been utilized for gas manufacture were later dismantled and removed from the site. In 1998, KeySpan Energy Corporation acquired the former MGP property through a merger with LILCO.

1.4.1 Former MGP Site

The discussion that follows regarding the historical use and development of the site is based on information provided by KeySpan, as well as a review of historic site plans, surveys, and Sanborn (fire insurance) maps.

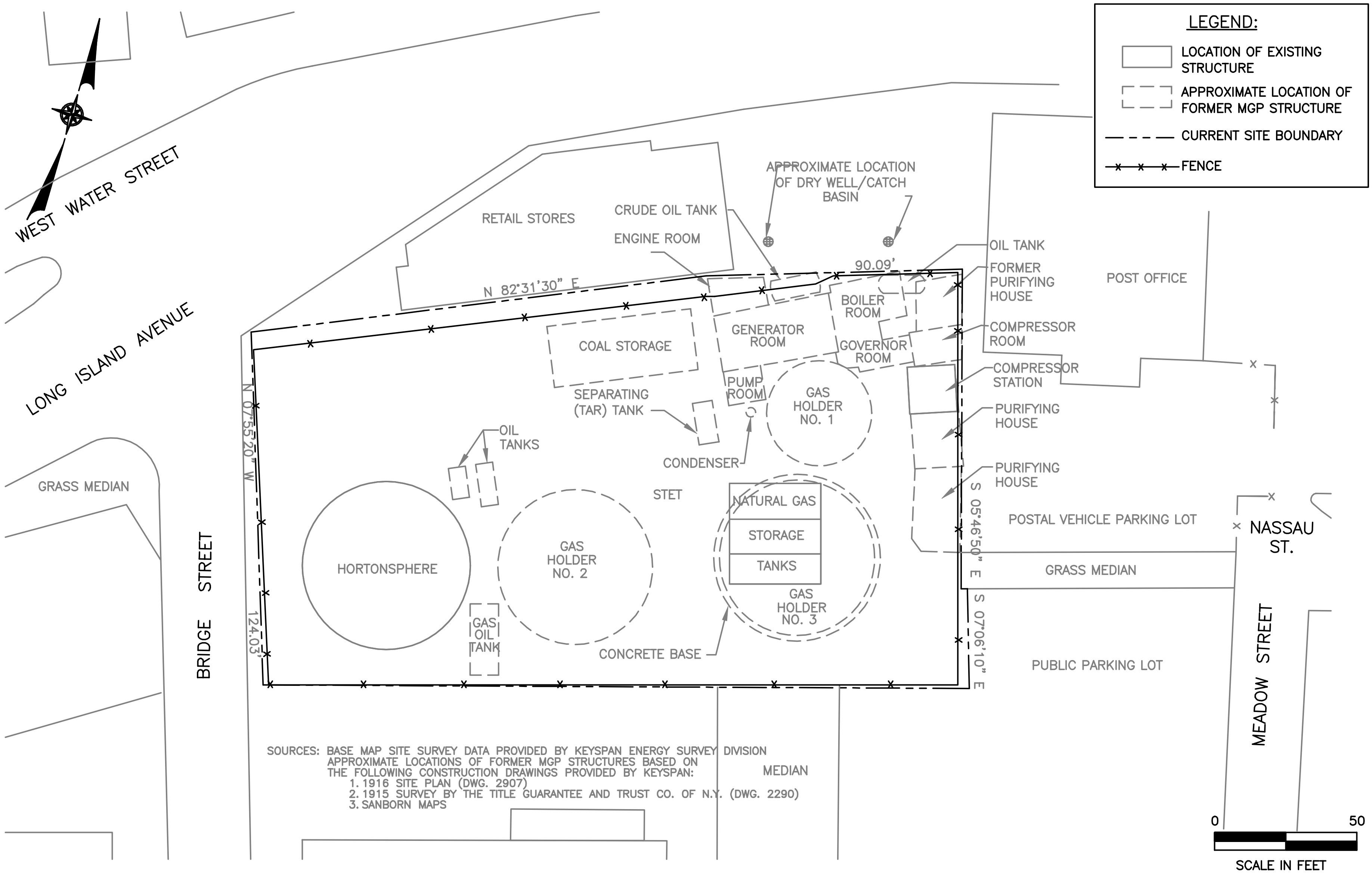
Historic structures previously located on the site are depicted on **Figure 1-3**. The majority of the former structures associated with gas production/storage on the site were located on the northeastern and southern portions of the site. These structures included three purifying houses and a compressor room along the eastern boundary of the site; a boiler room, governor room, oil tank, crude oil tank, engine room, generator room, above ground gas holder (No. 2), pump room, separating (tar) tank and a condenser on the northeastern portion of the site; a coal storage area centrally located in the northern portion of the site; two oil tanks, one gas oil tank and two above ground gas holders (Nos. 1 and 3) along the south-central portion of the site; and the existing 100,000-cubic foot spherical above ground gas storage tank (referred to as a Hortonsphere) in the southwestern portion of the site.

In 1885, the site was identified as “Sag Harbor Gas Works.” At that time, the site occupied less than half of its current area and did not extend to its current western property boundary along Bridge Street. A “Gasometer” (Gas Holder No. 3), a retort house and a number of unidentifiable structures were present on the site. Lumber storage areas were present on what is currently the western portion of the site. The Sag Harbor branch of the Long Island Rail Road was also present north of the site and the Sag Harbor Station was located to the northeast.

By 1899, an additional “iron gasometer” (Gas Holder No. 1) was added to the central-eastern portion of the site (north of Gas Holder No. 3). The majority of the support buildings were located in the northeastern portion of the site, and included a retort house, engine room, purifying house, office and coal shed.

By 1921, Gas Holder No. 3 on the southeastern portion of the site was removed and a 100,000 cubic foot “gasometer” (Gas Holder No. 2) had been constructed on the south-central portion of the site (west of the former Gas Holder No. 3) and some expansion of the support buildings in the northeastern portion of the site is apparent.

By 1929, three high-pressure gas tanks were present on the eastern portion of the site and two other oil tanks were present in the central portion of the site.



SAG HARBOR FORMER MPG SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

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

HISTORIC SITE FEATURES

FIGURE 1–3

WED, SEP 26, 2001 09:50 A AWK F:\1620\SAG HARBOR\1620-1.DWG

Gas production ceased and storage capacity at the site was increased significantly after 1929 to enable the facility to support the natural gas distribution system in the area. The existing Hortonsphere was constructed in 1931. By 1964, although the site had expanded to the west (to Bridge Street), the two remaining "gasometers" (Gas Holder Nos. 1 and 2) and the structures along the central-northern portion of the site had been removed.

The discussion that follows regarding the historical ownership of the former MGP site is based on information supplied by KeySpan, as well as a review of a document entitled, "Historic Review of MGP Plants on Long Island," prepared by Atlantic Environmental Services, Inc., dated June 26, 1996.

Ownership History
Sag Harbor Manufactured Gas Plant

Directory Years	*Ownership*
1887-1889	Sag Harbor Gas Works
1890-1891	Not Available
1892-1900	United Gas Improvement Company
1900-1903	Not Available
1904-1916	Sag Harbor Lighting Company
1916-1929	Long Island Gas Company*
1929-1999	LILCO
1999-Current	KeySpan Energy

* 1917 record identifies LILCO as "controlling" Long Island Gas Corporation; 100 percent of Long Island Gas Corporation stock was owned by LILCO according to 1927 *Brown's Directory*.

1.5 Project Background

1.5.1 Land Use and Demographics

Land use at and adjacent to the Sag Harbor former MGP site includes commercial, industrial, residential and recreational uses. The site is zoned "Village Business" which is consistent with current and historic land use. The site is located approximately 200 feet inland from the Sag Harbor Cove.

The Village of Sag Harbor is located within the Town of Southampton. Population estimates prepared by Long Island Power Authority for the Village of Sag Harbor reports 1,265 year-round residents as of January 1, 1999. This is relatively consistent with the April 1, 1990, census which reported 1,238 year-round residents. Total population estimates for the Town of Southampton (including all hamlets and incorporated villages) report 48,609 year-round residents as of January 1, 1999 (an approximate 6 percent increase), as compared to 45,909 year-round residents during the 1990 census. These estimates do not account for the significant increase in population experienced in these areas during the summer months associated with tourism and seasonal residents.

The Sag Harbor area has a long history of residential, industrial, commercial and recreational land use. The discussion that follows regarding the historical development of Sag Harbor is based on information contained in community profiles (Bill Bleyer, LI History.com) and a July 1998 issue of The Sag Harbor Express.

The area was initially settled in the late 1600s, when it was referred to as Great Meadows due to fact that it was mostly tidal marsh. As the harbor became increasingly active, it was referred to as Sagaponack Harbor because it was utilized mostly by the residents of Sagaponack. The first reference to the area as Sag Harbor appears in Southampton town records dated 1707. By the 1730s, sufficient marshy land was filled to allow for development. Whaling was initiated in the area in 1760. The whaling industry flourished and peaked in the 1830s and 1840s when Sag Harbor was considered a "cosmopolitan boomtown." At that time, Sag Harbor was considered the whaling capital of Long Island, with reportedly more than 60 whale ships and over 800 men employed in the industry during its peak. The business experienced a rapid decline associated with the California "gold rush" and the discovery of oil in Pennsylvania in the mid 1800s. The whaling industry in Sag Harbor was effectively nonexistent by the early to mid 1870s.

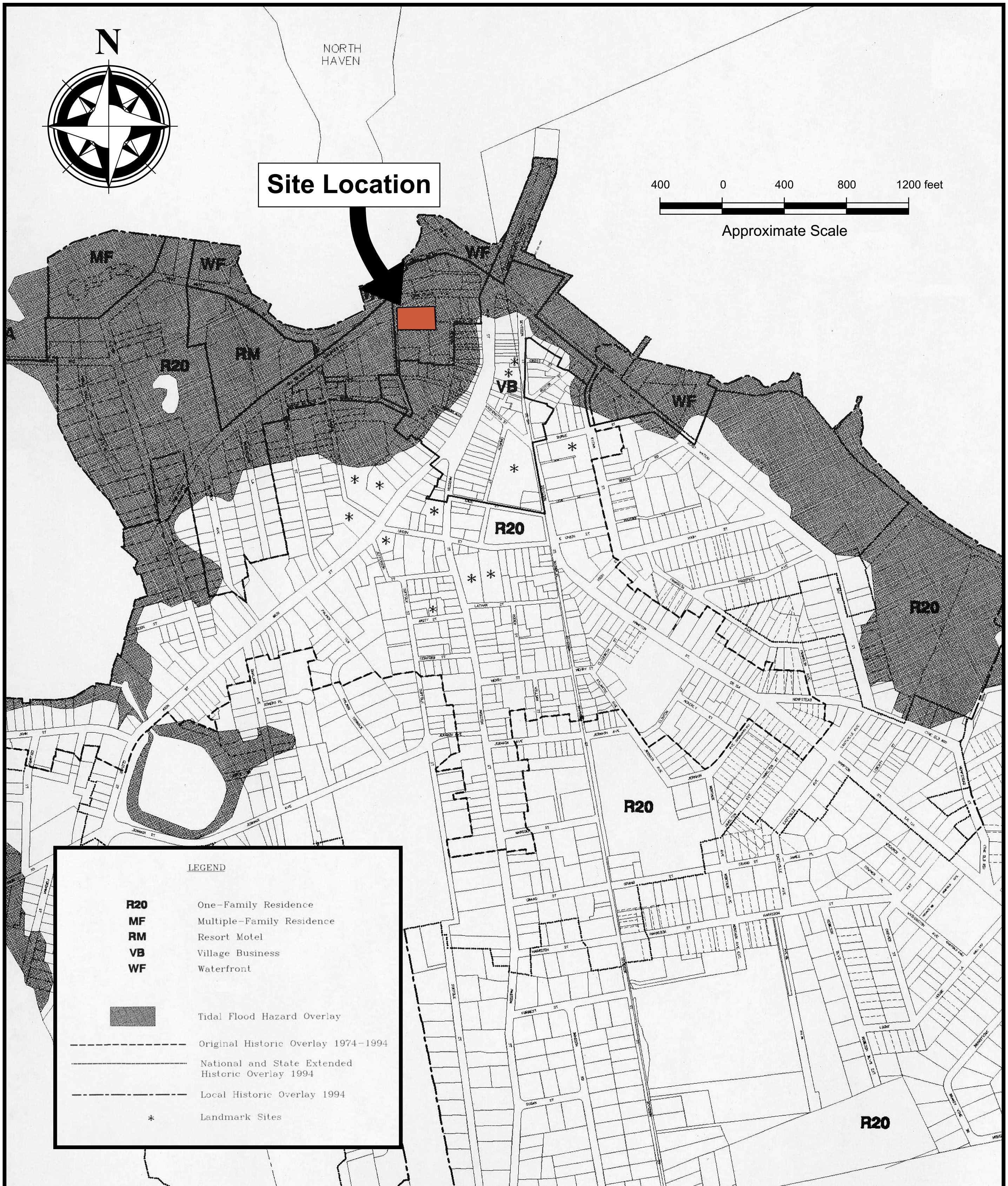
Steamboats began docking in the harbor in the 1870s which helped to transform the Village into a resort and tourist area. The Long Island Rail Road also extended a spur into the

Village in 1870, but this was abandoned in 1939. Other industries in Sag Harbor included foundries and factories producing oil cloth, cigars, brooms, clocks, stockings, flour, cotton, watch cases and other products. Torpedoes were also manufactured and tested in Sag Harbor, at least initially in support of World War I (1914 through 1919), however, the industry continued for approximately 30 years. Throughout the 20th Century, Sag Harbor has experienced continued residential, commercial, industrial and recreational land use and development. Current zoning within the Village is depicted on the Southampton Zoning Map presented on **Figure 1-4**. Additional information on the historical use of the Sag Harbor former MGP site was previously presented in **Section 1.4**.

1.5.2 Climate

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

Monthly and yearly precipitation totals and temperature data were obtained from the National Climatic Data Center of the National Oceanic and Atmospheric Administration (NOAA). Measurements were collected from the Bridgehampton weather station located in Bridgehampton, New York, approximately 4 miles south of the Sag Harbor former MGP site. **Table 1-1** shows monthly temperature and precipitation values for Bridgehampton, New York, averaged over 30 years. Included are values for average minimum and average maximum temperatures, derived from data collected at the Riverhead, New York weather station and presented in the Soil Survey of Suffolk County (USDA Natural Resources Conservation Service).



Source: Village of Sag Harbor Zoning Department

RLA/DWGS/KEYSPAN/SAGHARBOR1620(5/21/01)

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

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

ZONING MAP

FIGURE 1-4

TABLE 1-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

MONTHLY AVERAGE TEMPERATURE AND PRECIPITATION FOR BRIDGEHAMPTON, NEW YORK

Month:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ppt (in.)	4.18	3.85	4.11	3.97	3.82	3.59	3.00	3.45	3.46	3.39	4.53	4.31
Temp (^{o}F)	29.9	31.1	38.2	46.6	56.2	65.5	71.5	71.0	64.1	54.0	45.0	35.2
Avg. Max*	38	39	46	58	69	78	83	81	75	65	54	42
Avg. Min*	24	25	31	39	49	58	64	64	57	48	38	28

- Monthly average temperature and precipitation from National Climatic Data Center

* Average maximum and average minimum temperatures for Riverhead, NY, in degrees Farenheit from *Soil Survey of Long Island, New York,* USDA Natural Resources Conservation Service

The average annual temperature for Bridgehampton, New York is 50.69 degrees Fahrenheit (°F), with average monthly temperatures ranging from a low of 29.9°F in January to a high of 71.5°F in July. Average annual precipitation for Bridgehampton, New York is 45.66 inches, with the greatest average monthly precipitation occurring in November (4.53 inches), followed by December (4.31 inches), January (4.18 inches) and March (4.11 inches). The lowest average monthly precipitation occurs in July (3.00 inches), followed by October (3.59 inches), August, September (3.45 and 3.46 inches, respectively) and June (3.59 inches). Much of this precipitation occurs as rain, although in some years, snow accounts for a considerable portion of winter precipitation.

Wind data was also obtained from the National Climatic Data Center of the NOAA. The nearest known weather station with this data is the Long Island McArthur Airport weather station located in Islip, New York, approximately 50 miles west of the former Sag Harbor MGP site. Winds are predominantly from the west, with strong northerly components in the colder months and strong southerly components between in the warmer months. The interval between June and October coincides with the highest incidence of tropical storms and hurricanes, which generally track from the south-southeast. The Islip, Long Island weather station reports the highest sustained wind speeds in March and December, at 31 to 35 miles per hour (mph) occurring 0.1 percent of the time (as based on 30 years averaged record). **Table 1-2** summarizes average wind speed and wind direction for each month.

1.5.3 Topography

Topography at the Sag Harbor former MGP site is relatively flat; however, there are low points where storm water accumulates during heavy rains, 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 (see **Figure 1-5**).

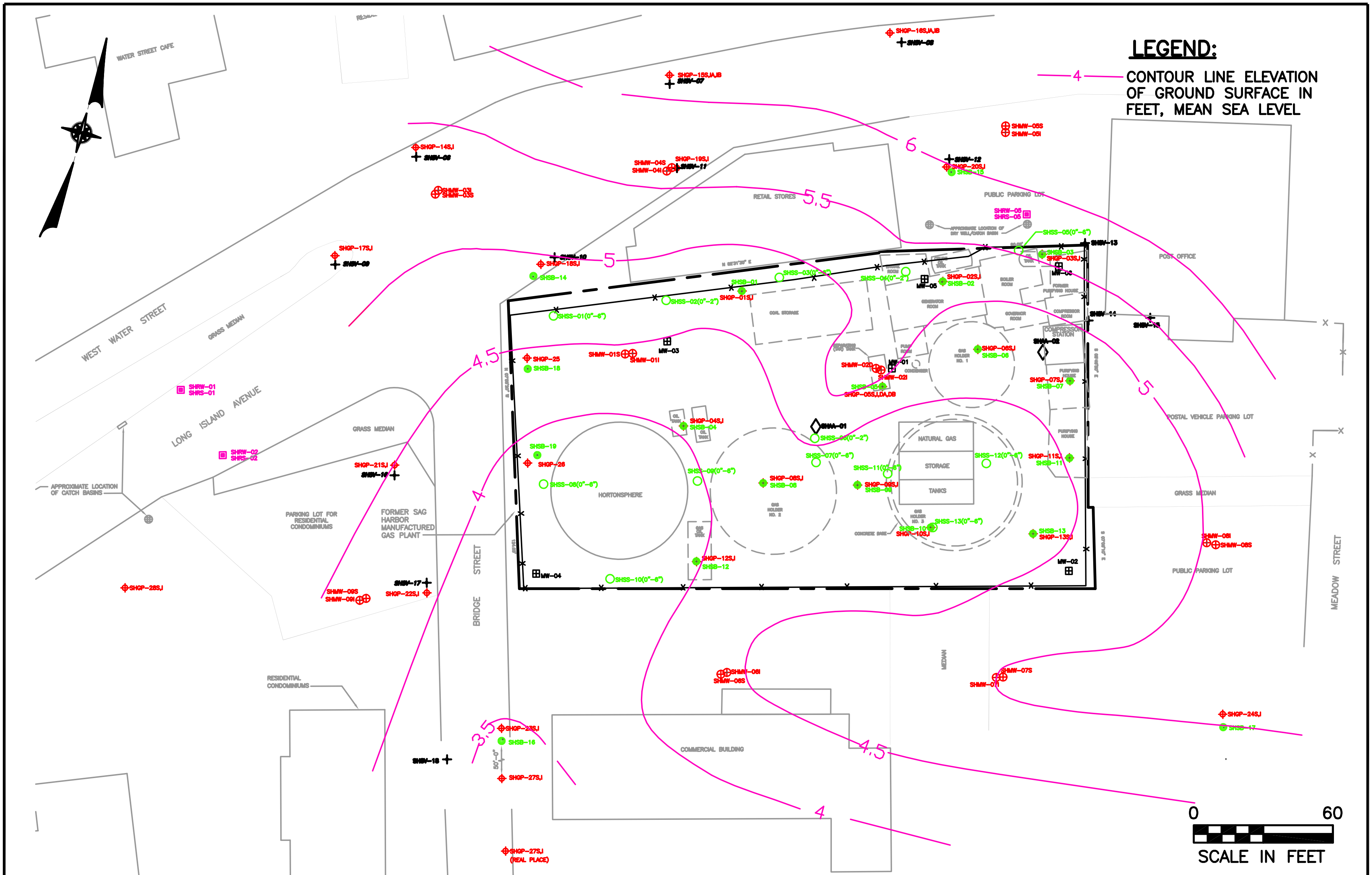
TABLE 1-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

AVERAGE MONTHLY WIND SPEED BY DIRECTION AND PERCENT DURATION FROM EACH DIRECTION FOR MAC ARTHUR AIRPORT, ISLIP, NEW YORK

Month	January		February		March		April		May		June		July		August		September		October		November		December	
Direction	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*	(mph)	*%*
N	10.2	*7.0*	11.1	*9.4*	10.9	*10.6*	9.8	*6.8*	9.5	*7.2*	9.4	*6.4*	8.3	*5.5*	8.5	*6.6*	8.7	*10.3*	9.2	*10.3*	9.3	*9.4*	10.7	*8.7*
NNE	10.2	*3.7*	9.9	*5.5*	11.0	*5.4*	11.2	*5.1*	9.8	*4.1*	9.2	*3.0*	8.0	*2.7*	8.5	*3.7*	8.3	*4.6*	10.8	*5.4*	10.2	*4.2*	10.9	*4.9*
NE	10.1	*5.2*	9.9	*4.1*	10.8	*3.7*	11.5	*5.5*	10.3	*4.9*	8.3	*2.3*	7.7	*3.7*	8.9	*4.3*	9.0	*4.5*	9.7	*2.9*	10.3	*2.7*	10.8	*3.9*
ENE	10.4	*3.5*	10.1	*3.5*	11.6	*3.1*	10.3	*4.0*	10.1	*4.1*	8.0	*2.8*	7.4	*2.1*	8.6	*4.2*	8.7	*3.7*	9.1	*2.1*	9.6	*2.5*	10.2	*3.1*
E	9.5	*2.2*	10.0	*3.8*	10.4	*3.6*	10.0	*4.3*	9.3	*4.3*	8.5	*4.2*	7.5	*3.5*	8.3	*3.2*	8.5	*4.3*	9.3	*2.9*	9.2	*2.4*	11.6	*2.8*
ESE	9.7	*1.5*	9.5	*1.1*	10.3	*2.2*	9.8	*4.0*	9.7	*3.5*	9.0	*2.9*	8.2	*3.0*	8.8	*1.7*	9.1	*2.2*	9.0	*2.1*	10.6	*2.2*	10.9	*1.2*
SE	9.7	*1.5*	9.8	*1.3*	10.6	*3.5*	9.4	*4.2*	10.0	*4.7*	8.7	*2.4*	8.5	*3.0*	8.5	*2.0*	9.0	*2.5*	10.4	*2.6*	11.0	*2.2*	9.7	*1.5*
SSE	10.5	*1.0*	9.0	*1.0*	10.2	*2.7*	9.2	*3.6*	9.1	*4.0*	8.0	*2.7*	8.1	*4.0*	8.2	*2.6*	8.5	*2.4*	9.4	*2.7*	11.6	*1.9*	9.0	*1.3*
S	9.8	*3.6*	9.3	*2.6*	9.7	*6.8*	9.1	*7.8*	8.8	*8.1*	8.8	*7.6*	8.3	*11.3*	8.6	*10.2*	8.7	*8.2*	9.5	*5.1*	10.9	*4.6*	8.8	*2.4*
SSW	11.2	*4.4*	11.2	*4.4*	12.0	*6.6*	11.3	*6.6*	10.3	*7.5*	11.2	*12.2*	9.8	*10.3*	9.8	*8.7*	10.5	*7.3*	10.5	*5.4*	11.2	*5.1*	11.3	*3.1*
SW	10.8	*6.9*	10.2	*7.0*	10.3	*6.4*	10.5	*8.0*	10.4	*10.3*	10.7	*14.0*	9.9	*12.5*	9.5	*13.1*	10.2	*9.4*	9.9	*8.6*	10.5	*9.1*	10.2	*5.7*
WSW	9.8	*7.1*	9.4	*5.7*	9.2	*3.9*	8.8	*4.3*	8.5	*5.1*	8.8	*8.2*	8.2	*7.3*	8.1	*6.9*	8.2	*5.7*	9.1	*6.6*	8.7	*8.7*	9.1	*7.0*
W	10.8	*11.9*	10.5	*9.3*	10.8	*5.3*	9.6	*4.7*	8.6	*4.0*	8.5	*4.1*	7.6	*3.7*	7.4	*3.3*	7.6	*4.6*	8.9	*7.4*	9.7	*10.0*	10.1	*12.0*
WNW	12.5	*11.7*	12.0	*10.0*	12.6	*7.4*	12.4	*6.3*	9.9	*4.4*	9.7	*3.4*	8.9	*3.2*	9.4	*3.5*	8.8	*3.6*	10.8	*6.4*	12.3	*7.9*	12.4	*10.3*
NW	12.5	*9.6*	13.0	*10.4*	12.9	*9.5*	11.8	*7.7*	10.4	*5.2*	10.7	*5.5*	8.7	*4.0*	8.8	*3.9*	10.1	*5.0*	10.2	*5.8*	12.9	*7.6*	12.9	*10.8*
NNW	11.1	*6.3*	12.5	*10.4*	12.2	*9.0*	11.6	*7.7*	9.6	*5.6*	10.2	*7.1*	9.1	*5.4*	8.5	*5.0*	9.4	*5.5*	10.1	*5.4*	11.1	*5.9*	11.8	*8.1*
Weighted Avg.	9.5	--	9.9	--	10.1	--	9.5	--	8.4	--	8.6	--	7.4	--	7.3	--	7.6	--	7.9	--	9.1	--	9.5	--
% Calm	--	*12.8*	--	*10.3*	--	*10.3*	--	*9.4*	--	*13.0*	--	*11.2*	--	*14.9*	--	*17.2*	--	*16.4*	--	*18.6*	--	*13.7*	--	*13.1*

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

Source: National Climatic Data Center



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

TOPOGRAPHIC MAP

0.5' CONTOUR INTERVALS

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

FIGURE 1–5

1.5.4 Storm Water

Storm water runoff across the site generally flows southwest. Storm water catch basins located on 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.

1.5.5 Surface Water

There are no naturally occurring or manmade surface water bodies within the Sag Harbor former MGP site.

Three saline surface water bodies are located within a 1/2 mile of the Sag Harbor former MGP site: Sag Harbor Bay, Sag Harbor Cove, and Upper Sag Harbor Cove (see **Figure 1-1**). Sag Harbor Bay, which is located approximately 1/8 of a mile northeast of the site, and Sag Harbor Cove, which is located approximately 200 feet northwest of the site, are both listed as Class SA saline surface water bodies by the NYSDEC. This classification indicates that these waters are suitable for shellfishing for market purposes and for primary and secondary contact recreation and fishing. Upper Sag Harbor Cove, which is located approximately 2,200 feet southwest of the site, is not listed by the NYSDEC as having a specific surface water body classification.

As previously discussed, a portion of land in the Sag Harbor area was formerly tidal marsh. This estuarine ecosystem was, however, periodically filled in to facilitate development. As a result, a review of historical topographic maps (dated 1904, 1944, 1956 and 1983) was conducted in an effort to identify any former surface water bodies which may have existed in the vicinity of the site. The following presents the findings of this review:

- 1904 Topographic Map
  - Sag Harbor Cove visible northwest of the site.
  - Several small ponds depicted south-southwest of the site.
  - Wetland area depicted approximately 2 miles south of the site.
  - Wetland area depicted approximately 1/2 mile east of the site.

- 1944 Topographic Map
  - Wetland area depicted to the northwest of the site, adjacent to Sag Harbor Cove
- 1956 Topographic Map
  - Wetland area depicted adjacent to the western portion of the site (across Bridge Street) that extends to Sag Harbor Cove
  - A creek exists within the wetland area to the west which runs parallel to Bridge Street (to the northwest) and goes under Long Island Avenue before discharging to Sag Harbor Cove
- 1983 Topographic Map
  - No noteworthy observations relative to surface water bodies

1.5.6 Regional Soil Classifications

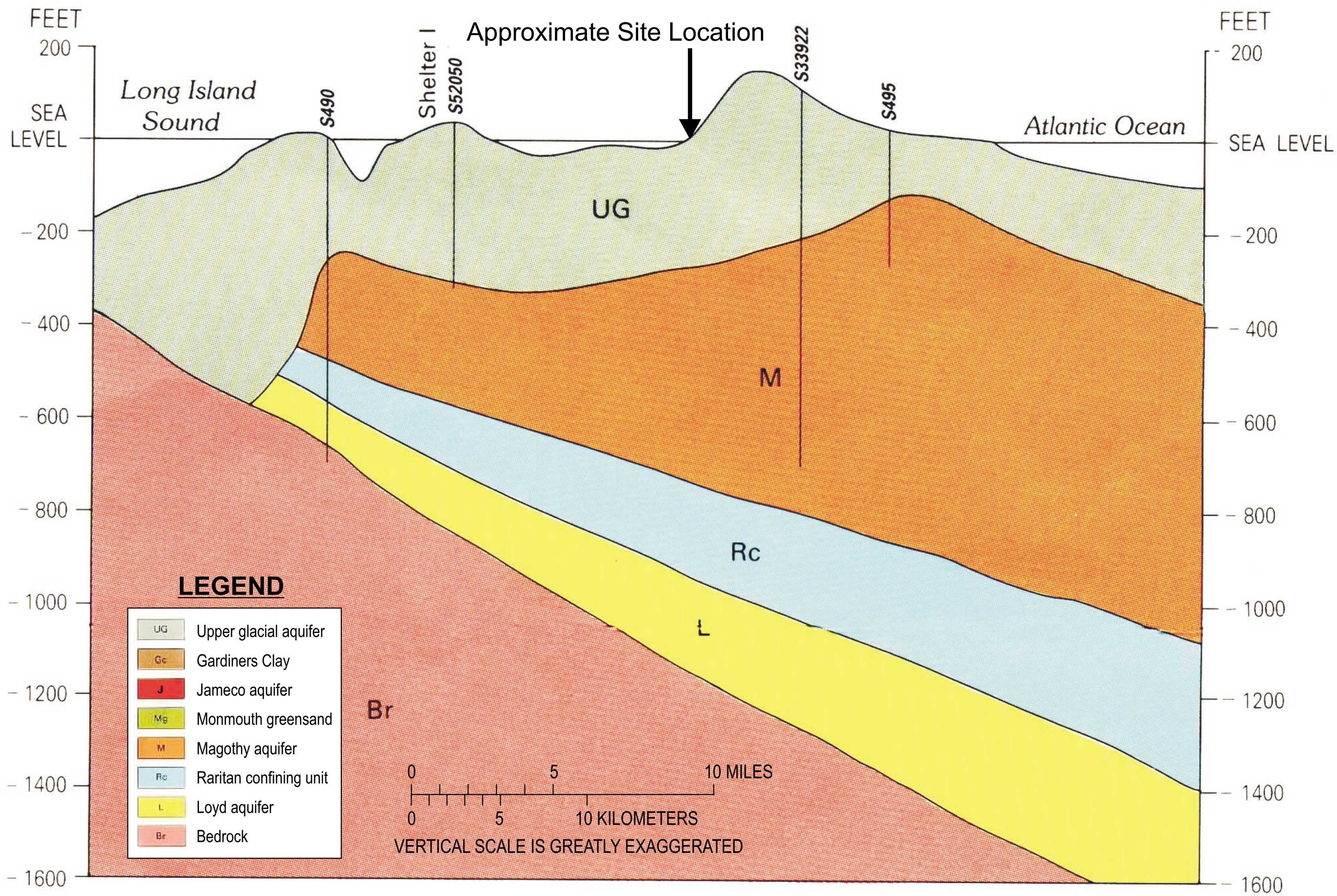
The Natural Resources Conservation Service (formerly The Soil Conservation Service) of the U.S. Department of Agriculture classifies site soils as predominantly fill land/dredged material (Fd) (Soil Survey for Suffolk County, New York, 1975). Fill land/dredged material is defined as areas that have been filled with material from hydraulic or mechanical dredging operations. Typically, this practice involves pumping dredged material into diked, tidal marshes where it is allowed to settle with excess water discharging back to the bay. Generally, heterogeneous deposits of sand, gravel, seashells and a dark-gray silty mud remain. Fill land/dredged material is noted to have low fertility, high salt content, and to be unsuitable for farming. Fill land/dredged material is also noted to be unsuitable for building sites if any highly compressible organic layers are present. The extreme western portion of the site is defined as Muck (Mu) in the referenced document prepared by The Natural Resources Conservation Service. Muck is defined as consisting of very poorly drained organic soils that formed in partly decomposed or almost completely decomposed woody or herbaceous plants. The definition also states that Muck typically exists in thickness ranging from 16 to 48 inches, and is characterized as a spongy, black or dark-reddish organic material over loose sand and gravel which is found where the water table exists at or near the surface.

1.5.7 Regional Geology

Long Island is within the Atlantic Coastal Plain geomorphic province. Geologic units comprising the south fork of Long Island consist of Holocene-aged beach and marsh deposits, Pleistocene-aged glacio-fluvial deposits and thick sequences of unconsolidated Cretaceous-aged shallow marine and terrestrial sediments overlying a southeastward-sloping bedrock surface. This underlying bedrock consists of relatively impermeable Precambrian-aged crystalline metamorphic and igneous rock. The bedrock surface is considered to be the bottom hydraulic boundary of the groundwater flow system within the study area as well as for the rest of Long Island. In the vicinity of the site, the thickness of unconsolidated deposits overlying bedrock is approximately 1,000 feet. **Figure 1-6** presents a regional north-south geologic cross section of the south fork of Long Island which is located approximately 3 miles west of the site.

Within the Sag Harbor area of the south fork, surficial sediments consist primarily of Pleistocene aged glacial deposits of sand, sand and gravel, as well as relatively thin layers of silt and clay. Locally, glacial deposits can be overlain by relatively thin strata of Holocene (recent aged) beach and fresh and salt water marsh deposits. As discussed in **Section 1.5**, the Sag Harbor area consisted of tidal marshland which was filled to allow for development in the 1730s. As a result, the site and surrounding area contains a shallow layer of fill material typically overlaying marsh deposits of peat and silt/clay. In areas where the marsh deposits are absent, the fill material rests directly upon sand, more typical of beach and/or glaciofluvial sediments.

According to USGS Water-Supply Paper 2073, as the glaciers retreated from the south fork during the Sangamon Interglaciation period approximately 200,000 years ago, melt water ponded behind moraines located south of Sag Harbor and formed streams flowing through topographic lows. The streams eventually eroded through the moraines and formed north-south trending channels which were subsequently filled with glaciofluvial sediments consisting of sand interbedded with thin layers of silt and clay during later glacial advances. **Figure 1-7** is a regional geologic cross section running through Sag Harbor and Sag Harbor Cove that provides greater detail as to the glacial geology of the area.



SOURCE: USGS, MA-709

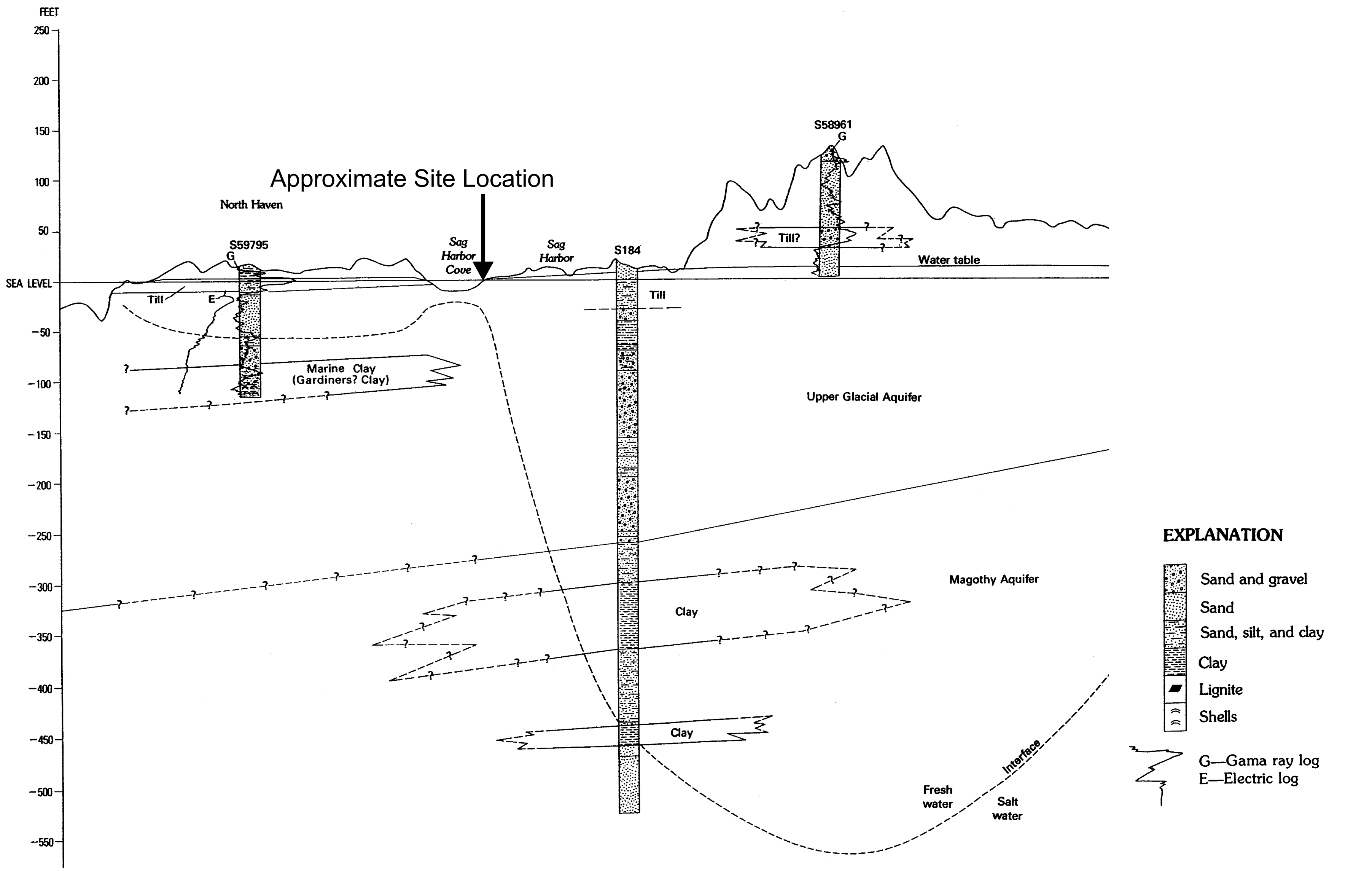
RLA/DWGS/KEYSPAN/SAGHARBOR1620(5/21/01)

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

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

REGIONAL CROSS SECTION OF THE SOUTH FORK OF LONG ISLAND, SOUTHAMPTON, NEW YORK

FIGURE 1-6



SOURCE: USGS, WATER SUPPLY PAGE 2073

RLA/DWGS/KEYSPAN/SAGHARBOR1620(5/21/01)

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

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

GEOLOGICAL CROSS SECTION THROUGH SAG HARBOR AND SAG HARBOR COVE
SOUTH FORK OF LONG ISLAND, SOUTHAMPTON, NEW YORK

FIGURE 1-7

As indicated by boring log No. S184, on **Figure 1-7**, shallow glacial sediments within the Sag Harbor area are comprised of sand, silt and clay and is referred to as Till. This sand, silt and clay strata appears to be roughly 40 feet thick and then transitions into a more sand-rich strata approximately 10-20 feet thick. Below the sand-rich strata is a clay-rich strata approximately 50 feet thick. Below the clay strata are alternating layers of sand, clay and sand and gravel. The total thickness of the Pleistocene aged glacial sediments within the Sag Harbor area is approximately 280 feet. Below the glacial sediments are a thick sequence of Cretaceous-aged sediments of sand, silt and clay which comprise the Magothy aquifer.

Geologic information generated as part of this Remedial Investigation, as well as a discussion of the geologic and hydrogeologic conditions of the site and surrounding area, are presented in **Section 3.0**.

1.5.8 Regional Hydrogeology

The saturated sands and gravels of the Lloyd, Magothy and the Upper Glacial deposits form Long Island's three major aquifers. Together, these constitute Long Island's Sole Source Aquifer System, as designated by the Environmental Protection Agency (EPA) pursuant to Section 1424(e) of the Safe Drinking Water Act.

Precipitation serves as the system's only source of fresh water recharge. Recharge for the Magothy aquifer within the south fork of Long Island occurs through the Upper Glacial aquifer. A groundwater divide exists through the south fork of Long Island, with groundwater north of the divide flowing northward (into Peconic Bay, Nyack Bay, Sag Harbor Cove, Gardiners Bay and Napeague Bay) and groundwater south of the divide flowing southward toward various local bays and inlets or directly to the Atlantic Ocean (USGS Water Supply Paper 2073).

Figure 1-8 is a groundwater contour map for the south fork of Long Island. As indicated, regional groundwater flow in the Sag Harbor area within the Upper Glacial aquifer is toward the north and northwest, with groundwater discharging to Sag Harbor Cove and Sag Harbor Bay.

Source: Suffolk County Department of Health Services, March 1999

RLA/DWGS/KEYSPAN/SAGHARBOR1620(5/21/01)

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

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

WATER TABLE CONTOUR MAP FOR THE SOUTH FORK OF LONG ISLAND SOUTHAMPTON, NEW YORK

FIGURE 1-8

The glacial deposits described in **Section 1.5.7** comprise the Upper Glacial aquifer within the south fork of Long Island and the underlying Cretaceous deposits comprise the semi-confined Magothy aquifer. The Upper Glacial aquifer is the major source of water supply of the south fork (USGS Water Supply Paper 2073). In general the freshwater/saline-water interface at or near the shore is typically found within the Upper Glacial aquifer. As one moves farther inland, the freshwater/saline water interface shifts to within the Magothy aquifer. The approximate thickness of the freshwater-bearing zone in the Upper Glacial and Magothy aquifers across the south fork is shown on **Figure 1-7**. In all parts of the south fork, saline water extends into the Magothy aquifer and, in many areas, into the Upper Glacial aquifer as well. Hence, it is not likely that the underlying Lloyd aquifer contains freshwater within the south fork, and it cannot be considered as a potential freshwater supply (USGS Water Supply Paper 2073).

Horizontal hydraulic conductivities of the Upper Glacial aquifer within the south fork are reported to be relatively high with averages ranging from 159 ft./day (Fetter 1971) to 350 feet/day (USGS Water Supply Paper 2073). Vertical hydraulic conductivities within the Upper Glacial aquifer can be highly variable due to the presence of silty-clayey sand units identified throughout this aquifer in certain parts of the south fork. Hydraulic conductivities in the Magothy aquifer are approximately 50 feet per day (horizontal) and 1.4 feet per day (vertical). The Raritan Clay, separating the Magothy from the Lloyd aquifer, exhibits hydraulic conductivities of 0.01 feet per day (horizontal) and 0.001 feet per day (vertical) (N.E. McClymonds and O.L. Franke, 1972; and McClymonds and Franke, 1970). These extremely low hydraulic conductivities effectively inhibit infiltration and discharge through the Raritan Clay.

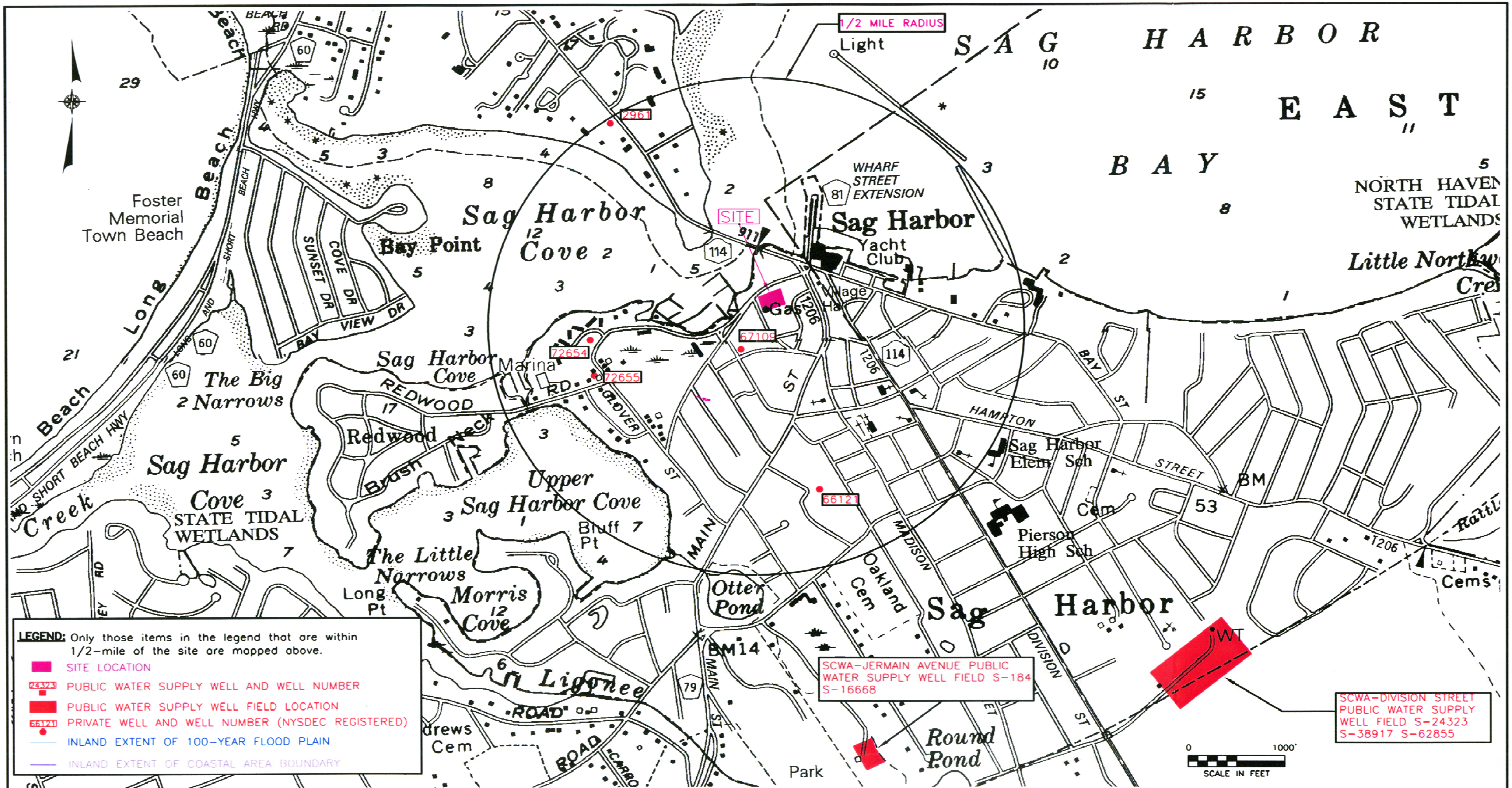
Hydrogeologic information generated as part of this Remedial Investigation, along with a discussion of local hydrogeologic conditions at the site and study area, are presented in **Section 3.0**.

1.5.9 Potable Water Supply

A total of five NYSDEC-registered private supply wells are located within a 1/2 mile radius of the site. The location of each well is shown on **Figure 1-9** and details regarding each identified well are provided on **Table 1-3**.

Based on a review of records maintained by the NYSDEC, the five privately owned water supply wells that were identified within 1/2 mile of the site include NYSDEC Well Numbers S-2961, S-66121, S-67109, S-72654 and S-72655. Well S-2961 is located approximately 1/2 mile to the north of the site, across the Sag Harbor Cove within the Village of North Haven. The well is screened from 41 to 45 feet below grade. It is owned by the Village of North Haven and is reportedly used for "fire" (protection) purposes. Wells S-72654 and S-72655, which are located approximately 2,100 feet west of the site are also used for fire protection and are reportedly owned by the Village of Sag Harbor. These wells are 106 feet and 41 feet deep, respectively. Well S-66121 is a residential well and is located approximately 2,100 feet south of the site. This well is screened from 43 to 48 feet below grade. The remaining privately-owned water well, S-67109, is a residential well located approximately 500 feet to the southwest of the site. This well is screened from 41 to 45 feet below grade.

There are also two public water supply well fields located approximately 1 mile from the site. The Suffolk County Water Authority's (SCWA) Jermain Avenue Public Water Supply Well Field exists approximately 1 mile south of the Sag Harbor former MGP site. This well field consisted of two wells; however, according to SCWA representatives, it was abandoned prior to the 1980s. The SCWA's Division Street public water supply well field is located approximately 1 mile southeast of the Sag Harbor site. This well field consists of three active wells screened within the shallow portion of the Magothy aquifer at depths ranging from 133 to 269 feet below grade. These well fields are also depicted on **Figure 1-9**.



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

PUBLIC AND PRIVATE WELLS WITHIN A ONE–HALF MILE RADIUS OF SITE

FIGURE 1–9

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

TABLE 1-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

DATA ON PUBLIC AND PRIVATE WATER SUPPLY WELLS WITHIN A ONE-HALF MILE RADIUS OF SITE

NYSDEC WELL NUMBER	Use of Well	Owner	Well Location	Depth (ft)	Screened Interval (ft)	Pumping Capacity (gpm)
S-2961	Fire	North Haven Village	Ferry Rd, N. Haven	43	26 - 41	500
S-66121	Domestic	John Schroeder	Suffolk St. Ext.	50	43 - 48	15
S-67109	Domestic	Lou Giacobbe	8 Rose St.	47	41 - 45	5
S-72654	Fire	Village of Sag Harbor	West Water St. (near Glover St.)	106	--	--
S-72655	Fire	Village of Sag Harbor	West Water St. (near Glover St.)	41	--	--

Notes:

-- : Information not available on NYSDEC Well Completion Report

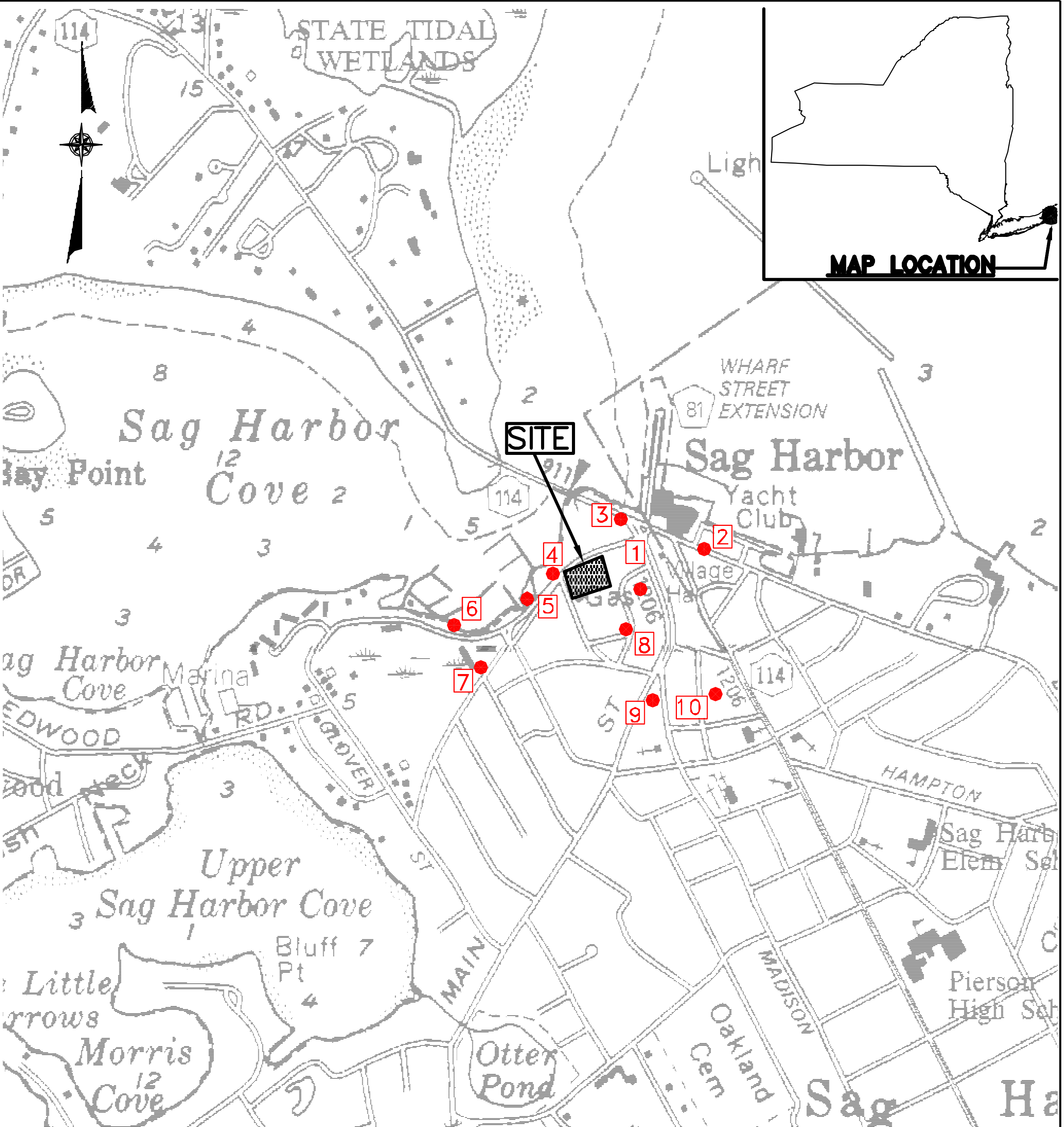
Source: NYSDEC Well Location Maps and Completion Reports

1.6 Environmental Database Searches

In order to identify other potential sources of chemical constituents within the study area that may impact the air, water or soil quality of the site and surrounding properties, a search of federal and state environmental databases was conducted. The results of the database searches are presented in **Appendix A**. The database searches included sites located within 1 mile of the site boundaries.

Based on a review of the database searches, 10 potential areas of environmental concern (AOCs) were identified within 1/4 mile of the site boundaries. **Figure 1-10** depicts the general location of these 10 potential AOCs. **Table 1-4** summarizes information on each of the 10 AOCs. Based on a regional northwest direction of groundwater flow within the Sag Harbor area, four of these sites ("Bulova Watch Corporation," "Whalers Pharmacy," "Emporium Hardware" and "LILCO at Main Street and Spring Street") are located potentially upgradient of the site property, and therefore, may represent potential sources of subsurface contamination within the site area.

The Bulova Watch Factory site, located on Washington Street, is slightly less than one-quarter mile southeast of the site. Based upon information provided by representatives of the New York State Department of Environmental Conservation (NYSDEC), contamination of groundwater by chlorinated organics has been documented at this site, and off-site migration of the plume has occurred to the north and northwest (towards the Sag Harbor former MGP site). A representative of the NYSDEC stated that discharge of the plume to Sag Harbor Cove has been documented "just to the west of the Yacht Club." As discussed in **Section 1.7** of this report, chlorinated organics were detected in groundwater samples collected on-site, as well as in the vicinity of the site, during the 1993 Preliminary Site Assessment conducted at the "Sag Harbor Bridge Street Site" as well as the Phase I Site Investigation conducted at the Sag Harbor former MGP site in 1995. Groundwater samples collected in support of the 1993 Preliminary Site Assessment of the "Sag Harbor Bridge Street" site revealed the presence of several chlorinated organics in monitoring well MW-3 (chlorobenzene and chloromethane), located immediately south of the former MGP site, and monitoring well AST-2 (1,1-dichloroethane),



LEGEND:

1 ● POTENTIAL OFFSITE AREA OF ENVIRONMENTAL CONCERN

0 1000'
SCALE IN FEET

SOURCE: USGS SAG HARBOR WEST QUADRANGLE, 1956.
ENVIRONMENTAL DATA RESOURCES/TOXICS TARGETING ENVIRONMENTAL DATABASES

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

IDENTIFIED AREAS OF ENVIRONMENTAL CONCERN WITHIN STUDY AREA

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

FIGURE 1–10

TABLE 1-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

IDENTIFIED AREAS OF ENVIRONMENTAL CONCERN WITHIN STUDY AREA

Figure 1-10 Map ID	Area of Concern Address	Approx. Distance From Site/Direction	NYSDEC SPILLS NO. FOR LUST/SPILLS	SPILL	MATERIAL SPILLED	QUANTITY SPILLED	SPILL DATE	Summary Report Findings/Key Issues
1	Whalers Pharmacy Main Street Sag Harbor, NY	460 feet ENE	8606560	closed (1/26/87)	#2 fuel oil	100 gal	1/24/87	Basement affected; "could have been pumped into sewer"; 15 yards (of soil) removed
2	Dynamic Duce 8 Bay Street, NY Sag Harbor, NY	1,020 feet ENE	9104825	closed (8/4/91)	diesel	25 gal	8/4/91	Spill into surface water of harbor; approximately 20 gal recovered
3	Unknown (reportedly Harbor Cove Realty) Main Street/Route 114 Sag Harbor, NY	630 feet NNE	9601158	closed (10/4/96)	unknown petroleum	unknown	4/23/96	cleaned up by responsible party
4	Unknown Bridge Street/Long Island Avenue Sag Harbor, NY	170 feet NW	8909871	closed (2/6/90)	PCB oil	unknown	1/14/90	spill to ground
5	Whalers Marina West Water Street Sag Harbor, NY	440 feet WSW	8710533 and 8802709	closed (12/5/88 and 5/6/91, respectively)	gasoline and diesel, respectively	unknown/ unknown	5/26/87, 6/25/88	8710533: 3 yards of contaminated soil stockpiled and spill was to be closed upon its removal / 8802709: spill to surface water
6	Barons Cove Marina West Water Street Sag Harbor, NY	830 feet WSW	8703608 and 9411252	closed (8/5/87 and 1/31/95, respectively)	diesel and unknown petroleum, respectively	unknown/ unknown	7/31/87, 11/22/94	8703608: Spill to surface water / 9411252: spill to land
7	US Postal Service Long Island Avenue Sag Harbor, NY	660 feet SW	8905290	closed (10/17/94)	#2 fuel oil	unknown	8/29/89	Spill occurred during tank test; tank removed, contaminated soil removed; 4 wells installed, no floating product
8	Emporium Hardware Main Street Sag Harbor, NY	720 feet SE	9111087 and 9400079	closed (1/27/92 and 6/30/94, respectively)	unknown and unknown petroleum, respectively	unknown/ unknown	1/27/92, 4/3/94	9100087: Caused by boiler misfiring, spill contained and cleanup met standard / 9400079: no specific details provided
9	LILCO Main Street/Spring Street Sag Harbor	760 feet SE	8607284	closed (3/26/87)	"non-PCB oil"	48 gal	3/2/87	Spill into sewer; "only evidence of spill is black spot on concrete"
10	Bulova Watch Corporation* Washington Street and Church Street Sag Harbor	1,130 feet SE	9103395 and 9501433	closed (10/16/92) and open, respectively)	unknown petroleum in both cases	unknown/ unknown	6/26/91, 5/4/95	Product found in wells associated with both spills (8" of product found in a well associated with spill # 9501433)

Notes:

* : This site is listed as a "NYSDEC Inactive Hazardous Waste Site" and "Active Hazardous Spill Site". Chlorinated solvents [1,1,1-trichloroethane (TCA), and trichloroethene (TCE)] have been detected over regulatory levels in unsaturated soils and downgradient wells. 1,1 Dichloroethene and Perchloroethene have also been detected over regulatory levels in downgradient wells. A plume which apparently discharges to Sag Harbor cove has been identified as originating from this site. A soil vapor extraction system was installed on-site in 1994. The system was subsequently shut down in March 1999, after sampling had indicated that concentratioins of contaminants had decreased below regulatory levels.

located approximately 100 feet south of the former MGP site. Monitoring Well MW-06, located in the extreme northeast corner of the former MGP site, also exhibited several chlorinated organics, including 1,2 dichloroethene, trichloroethene and vinyl chloride during the 1995 Phase I Site Investigation. Based on the documented extent of the Bulova Watch Factory plume and the chlorinated organics detected in monitoring wells located on-site as well as south (upgradient) of the site, it is likely that the plume has impacted groundwater quality within the former MGP site. The NYSDEC has indicated that since there is no known use of the Upper Glacial aquifer in this area, remedial actions at the Bulova Watch Factory site have focused on source removal activities (soil vapor extraction) and the groundwater plume has yet to be fully delineated or remediated.

The three remaining areas of environmental concern located upgradient of the site are all "closed" petroleum spill sites. One of these sites is the Whalers Pharmacy which is approximately 460 feet east-northeast of the site. The spill at this site involved 100 gallons of No. 2 fuel oil. As a result, 15 yards of soil was removed and the spill was closed in January of 1987. The second site is Emporium Hardware, also located on Main Street approximately 720 feet southeast of the site. This site involved two spills of "unknown petroleum." The first spill (1/27/92) was caused by boiler misfiring and no details were provided regarding the second spill (4/03/94). Both of these spills were closed on January 27, 1992 and June 30, 1994, respectively. The third closed spill site was listed as LILCO on Main Street and Spring Street, located approximately 760 feet southeast of site. This spill involved 48 gallons of "non-PCB oil" spilled into the sewer. This spill was closed as of March 26, 1987. Since these spills were all closed by the NYSDEC, it is unlikely that they have adversely impacted the former MGP site.

1.7 Previous Site Investigations

This section provides an overview of prior site investigations. On-site and off-site historical sample locations are shown on **Drawing 1**. **Drawing 1** is provided in a map pocket at the end of this section.

November 1988 Preliminary Assessment
Completed By: The NUS Corporation Superfund Division

In April, May and June of 1987, two limited environmental investigations were conducted by Storch Associates along Bridge Street and Rose Street in support of a proposed drainage improvement project. Specifically, the environmental investigations were conducted in response to concerns expressed by the Suffolk County Water Authority (SCWA) associated with a release from a fuel oil tank. These investigations documented the presence of chemical constituents in soil and groundwater in the area. The Mayor of the Village of Sag Harbor subsequently requested that the New York State Department of Environmental Conservation (NYSDEC) undertake an investigation of the area pursuant to its "Superfund" program. As a result, the area was subsequently listed on the New York State Registry of Inactive Hazardous Waste Disposal sites (Site Code 1-52-126) and the United States Environmental Protection Agency (USEPA) assigned the NUS Region 2 Field Investigation Team (FIT) the task of performing a Preliminary Assessment (PA) of the site.

The study area, referred to as the "Sag Harbor Bridge Street site," included the former MGP site, the Long Island Fisherman site (a local business which printed a publication catering to the local sport fishery industry) to the south, as well as other surrounding properties. The PA was completed in November 1988. The PA included a NYSDEC file search, background data collection, and site reconnaissance. Of particular importance was an evaluation of the findings of the prior investigations conducted by Storch Associates. These prior investigations included: advancing of 14 soil borings, 5 of which were sampled and analyzed; the installation and sampling of 2 groundwater monitoring wells; the sampling of 1 existing well; and the collection and analysis of 1 storm water effluent sample. Based on the presence of "notable levels of contaminants in soils and groundwater and significant potential target populations in air, surface water, groundwater and on-site exposure pathways," the PA recommended that a high priority Screening Site Inspection (SSI) be conducted.

March 1989 Screening Site Investigation
Completed By: The NUS Corporation Superfund Division

In accordance with the recommendations of the PA, the USEPA assigned the NUS Region 2 Field Investigation Team (FIT) the task of completing a Screening Site Inspection (SSI) of the site. The objectives of the SSI were to evaluate and characterize the potential risks associated with the site, specifically to verify and substantiate the data collected during the PA, and to further characterize the site and surrounding area through the collection and analyses of additional environmental samples. The SSI was completed in March 1989.

The site (referred to as the LILCO gas storage area), along with the following four adjoining properties, was targeted for sampling activities: The Long Island Fisherman building (former printing facility), the "Greenberg property," the "Casman property," and the Harbor Close Condominiums. According to the NUS SSI report, on November 30, 1988, a total of 11 soil samples were collected from the above-mentioned properties to characterize constituents of the waste source areas and to identify chemical constituents at possible on-site targets. The NUS FIT did not collect groundwater samples.

Analysis of soil samples collected at the LILCO and Long Island Fisherman properties showed the presence of various polynuclear aromatic hydrocarbons (PAHs) and inorganics. Samples collected at the Long Island Fisherman also showed notable concentrations of chrysene, bis(2-ethylhexyl)phthalate, benzo(g,h,i)perylene, as well as estimated concentrations of barium, iron, silver, and pesticides. Also noteworthy, as presented in the NUS SSI report, was documentation from October 1984 of a leaking aboveground fuel oil storage tank at the former Long Island Fisherman printing facility. Soil samples were subsequently collected from the Long Island Fisherman property, and laboratory analysis indicated the presence of No. 2 fuel oil as well as potential PCB-containing oil. The spill was reportedly remediated by removing approximately 35 cubic yards of soil. Monitoring wells were installed, and the case was closed as of April 1986.

The soil sample collected from the Greenberg property showed elevated concentrations of butylbenzyl phthalate and estimated concentrations of benzoic acid, di-n-butylphthalate, Aroclor 1248, Aroclor 1254, barium, calcium, lead and zinc. The soil sample collected from the Casman property showed elevated concentrations of fluoranthene and pyrene, as well as estimated concentrations of benzoic acid, PAHs, barium, iron, lead, manganese and zinc. The soil samples collected from the Harbor Close Condominium property showed elevated concentrations of arsenic and vanadium, as well as estimated concentrations of DDE, DDD, DDT, aluminum, chromium, copper, iron and PAHs. According to the NUS SSI report, certain chemicals detected in the soil samples are associated with those commonly found at the town gas plants, while others are associated with fuel oils. Sources of the PCBs, pesticides and various inorganics were unknown.

The NUS SSI report recommended that the site receive a medium priority for further evaluation in a Listing Site Inspection (LSI). The report also recommended that the LSI focus on the following:

- Extent of soil contamination on Bridge Street, and determine whether the contamination is limited to Bridge Street.
- Analytical documentation of background surface soil conditions.
- Documentation of an observed release to groundwater.
- Documentation of an observed release to surface water.

<u>December 1989 Listing Site Inspection</u>
Completed By: The NUS Corporation Superfund Division

The Listing Site Inspection (LSI) report undertaken was effectively a three-volume compilation of 50 “references” that included historical documentation of prior studies and land use, references to environmentally sensitive and historic areas, published hydrogeological studies, memoranda, field notes, and raw analytical data associated with historical as well as additional site reconnaissance activities undertaken by NUS and others. The LSI report effectively provided further documentation of environmental baseline conditions at the site and surrounding areas, as well as additional documentation of environmental concerns (primarily through non-analytical sampling and site reconnaissance activities). The three-volume document that comprises the LSI report was ultimately appended to the SSI report as Volumes II, III and IV.

September 1993 Preliminary Site Assessment
Completed By: Engineering-Science, Inc.

In 1991, the Sag Harbor Bridge Street site was investigated further as part of a Preliminary Site Assessment (PSA) conducted by Engineering-Science, Inc. (ESI). The report was prepared for the New York State Department of Environmental Conservation (NYSDEC), Division of Hazardous Waste Remediation. The objective of the PSA was to provide sufficient information for NYSDEC to reclassify the site.

Task 1 of the PSA involved a record search and site inspection. Based on the results of Task 1, the report concluded in a May 1992 draft that sufficient information was not available to reclassify the site. As a result, further investigation was recommended including additional soil and groundwater sampling. These activities were subsequently undertaken and documented in a September 1993 PSA report.

According to the PSA report, the data collected during this investigation indicated that environmental samples containing mercury, silver, lead, and a number of organic chemicals, including polychlorinated biphenyls (PCBs) were identified on and around the Sag Harbor Bridge Street site." However, these constituents were not classified as hazardous under NYSDEC regulations, specifically Title 6 of the New York Code of Rules and Regulations Part 371 (6 NYCRR Part 371).

During the investigation, lead was detected in seven soil samples at concentrations exceeding "the maximum estimated naturally occurring concentration." According to the PSA report, four of these samples were collected from the LILCO property, two samples from the Casman property, and one sample from the Suffolk Electric Motors property. Silver and mercury were also detected at elevated concentrations. Two of these samples were collected from a concrete pit located along the north wall of the building on the Long Island Fisherman property. PCBs were also detected on the Long Island Fisherman property and Greenberg property; however, samples collected from these two properties were well below the regulatory limit and the baseline concentration established during previous investigations.

Based on the results of over 150 soil samples collected in support of the PSA and previous investigations, the report recommended the following:

- The Sag Harbor Bridge Street site should not be nominated for listing on the New York State Registry of Inactive Hazardous Wastes sites because listed and/or characteristic hazardous waste, as defined under 6 NYCRR Part 371, was not determined to be present on-site;
- The New York State Department of Health (NYSDOH) and Suffolk County Department of Health Services (SCDHS) review the sample results generated during the investigation in order to determine whether hazardous substances detected on-site could pose health risks to persons on and near the site; and
- The Long Island Fisherman site be delisted from the Registry due to the lack of documented hazardous waste.

NYSDEC subsequently delisted the entire "Sag Harbor Bridge Street" site (Site No. 1-52-126) from the Registry of Inactive Hazardous Waste sites in March 1995.

<u>April 1997 Phase I Site Investigation Report</u>
Completed By: Fluor Daniel GTI

LILCO retained Fluor Daniel GTI in 1995 to further investigate conditions on the former MGP site as part of a Phase I Site Investigation. The stated objectives of the study included:

- Determine the shallow geology of the site;
- Determine the generalized groundwater flow/movement at the site;
- Determine the nature/character of any on-site soil and groundwater MGP residuals;

- Determine the environmental conditions at the former holder locations;
- Evaluate the potential application of an interim remedial measure (IRM) for the site;
- Evaluate site conditions and determine if there exists any imminent risk to the site employees and the public; and
- Evaluate the potential for site-related constituents to migrate beyond the site boundaries.

As part of the field investigation, Fluor Daniel GTI conducted surface soil sampling in 12 locations, subsurface soil sampling in 6 locations and groundwater sampling from 6 monitoring wells. The Phase I report was finalized in April 1997. Surface soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), cyanide, metals and pesticides. Subsurface soil samples were analyzed for VOCs, SVOCs, cyanide and pesticides.

Benzene, toluene, ethylbenzene and xylenes (BTEX), PAHs, cyanide, metals and pesticides were detected in surface soil at locations throughout the site. Subsurface soil samples were collected from three of the six boring locations for laboratory analysis during the Phase I Investigation. BTEX, PAHs, and pesticides were detected in all three subsurface soil samples; cyanide was detected in one of the three soil samples analyzed.

Groundwater samples were collected from six monitoring well locations (MW-1 through MW-6). BTEX compounds were detected in all six wells. MW-5 demonstrated the highest BTEX concentrations. According to the Fluor Daniel GTI report, concentrations of BTEX exceeded New York State groundwater standards in all six wells. PAHs were detected in five of the six monitoring wells. MW-1 and MW-5 were found to contain the highest concentrations of SVOCs. Concentrations of detected SVOCs generally exceeded New York State groundwater standards. Cyanide was detected in three of the six groundwater samples. The highest cyanide concentrations were found in wells within the former MGP process area (MW-1 and MW-2). Metals were detected in all six groundwater samples analyzed. According to the Fluor Daniel GTI report, the highest detected metals concentrations were found in wells within the former MGP process area (MW-1 and MW-2). According to the Fluor Daniel GTI report, pesticide compounds were not detected in any of the groundwater samples collected in association with the Phase I investigation.

It was concluded that on-site groundwater was impacted by site-related constituents and exceeded established groundwater quality guidance values. Although the complete extent of migration of impacted groundwater was not determined, the report stated that there were no apparent users of impacted groundwater. Therefore, IRMs for groundwater were not recommended. It was also concluded that on-site soil was impacted by site-related constituents and exceeded established soil cleanup objectives. However, since a fence secured the site, and it was overlain by gravel (which precluded direct contact), IRMs for soil were not warranted.

Based on the findings of the above study, the NYSDEC relisted the "Sag Harbor Gas Plant" on the Registry of Inactive Hazardous Waste sites in January 1998 (Site No. 1-52-159).

Previous sampling locations at the Sag Harbor former MGP site are provided on **Drawing 1** in the map pocket at the end of this section.

1.8 Cut and Plug Interim Remedial Measures

An Interim Remedial Measure (IRM) is defined in the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) No. 4042: Interim Remedial Measures, as a

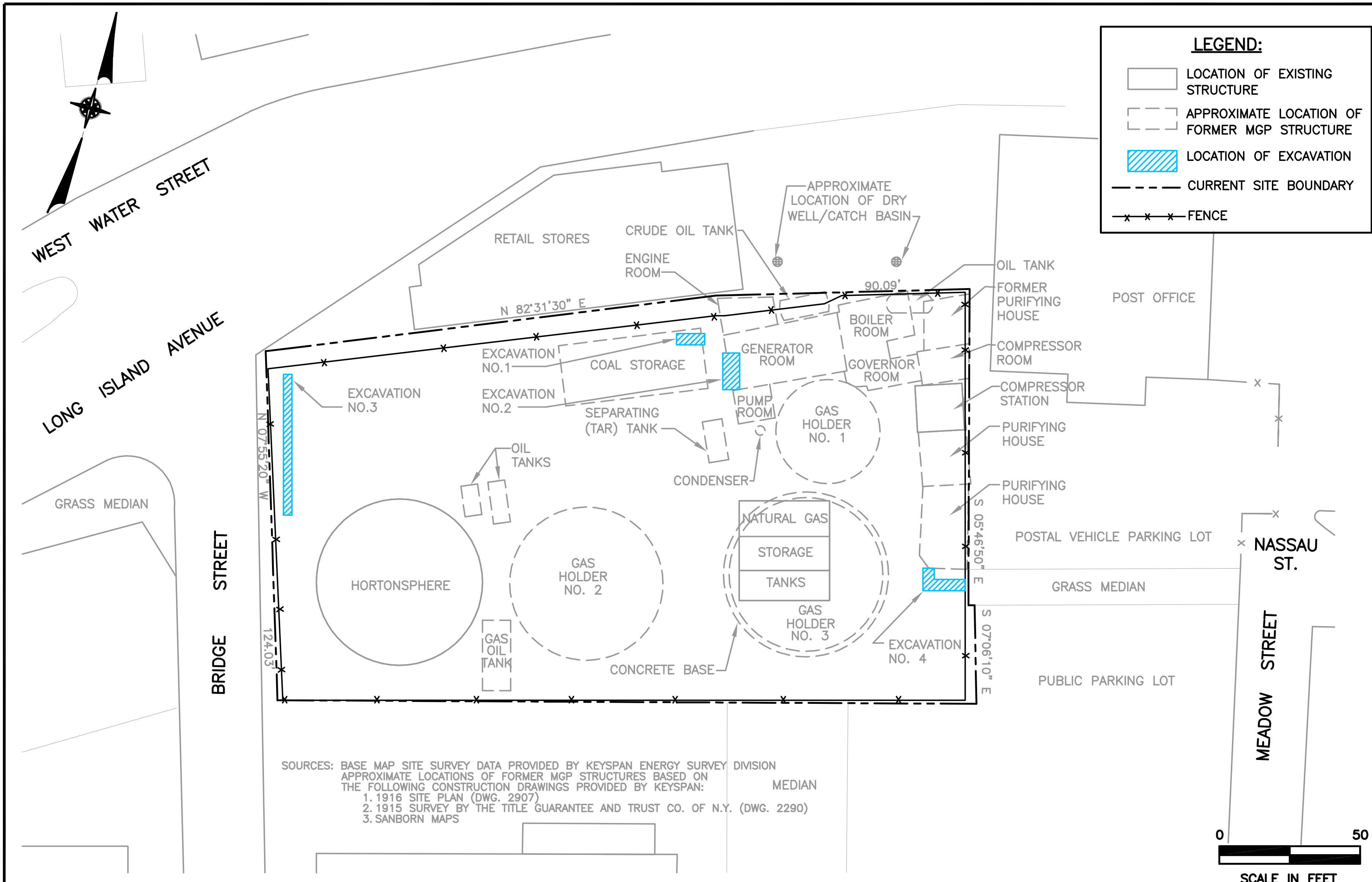
> "discrete set of activities to address both emergency and non-emergency site conditions which can be undertaken without extensive investigation and evaluation, to prevent, mitigate, or remedy environmental damage or the consequences of environmental damage attributable to a site listed in the Registry."

Although intended to be a temporary or partial response, an IRM can be included as part of, as well as comprise the entire, final remedy for the site. If the IRM proves to be effective, the Record of Decision can ultimately recommend that no further action is required.

A "cut and plug" IRM Program was previously undertaken at the Sag Harbor former MGP site. The objective of the Cut and Plug IRM Program was to locate underground piping associated with historic MGP operations so that each pipe could be cut, drained of any fluids and plugged in order to limit the potential for any off-site migration of MGP-related constituents. The Cut and Plug IRM Program was undertaken at the Sag Harbor former MGP site between January 4 and January 8, 1999. **Figure 1-11** shows the location of each completed excavation.

Historical site drawings were reviewed and candidate piping that offered potential to traverse the site boundaries was identified. In accordance with the work plan, all candidate piping that could be located that was four inches in diameter or larger, and offered potential to traverse the site boundaries, was terminated. Based on a review of site drawings, the following candidate piping was targeted: abandoned 4-inch clay sewer pipe on the central-northern portion of the site; abandoned 4-inch gas pipe on the northwestern portion of the site; and an abandoned 4-inch gas pipe on the southeastern portion of the site. The abandoned 4-inch clay sewer pipe on the central northern portion of the site and the abandoned 4-inch gas pipe in the southeastern portion of the site were located and capped with concrete. The targeted 4-inch gas pipe on the northwestern portion of the site was not confirmed to exist (an approximate 3' wide by 51' long excavation was conducted along the northwestern boundary of the site).

Section 2.8 provides details of the field activities completed as part of this IRM and **Section 4.2.2** provides a discussion of the results and findings. Analytical results are included in **Appendix B**.



SAG HARBOR FORMER MPG SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

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

CUT AND PLUG IRM EXCAVATIONS

FIGURE 1–11

LEGEND:

B-01(A)/ MW-03(A)	■	SOIL BORING CONVERTED TO MONITORING WELL LOCATION FROM STORCH ASSOCIATES INITIAL ENVIROMENTAL INVESTIGATION–MAY 1987
B-01(E)/ MW-01(E)	■	SOIL BORING CONVERTED TO MONITORING WELL LOCATION FROM GTI PHASE I INVESTIGATION–APRIL 1997
B-02(A)	●	SOIL BORING SAMPLING LOCATION FROM STORCH ASSOCIATES INITIAL ENVIROMENTAL INVESTIGATION–MAY 1987
B-01(B)	●	SOIL BORING SAMPLING LOCATION FROM NUS CORPORATION SUPERFUND DIVISION SCREENING SITE INSPECTION (SSI)–MARCH 1989
B-01A(C)	●	SOIL BORING SAMPLING LOCATION FROM NUS CORPORATION SUPERFUND DIVISION LISTING SITE INSPECTION (LSI)–JUNE 1989
B-08(E)	●	SOIL BORING SAMPLING LOCATION FROM GTI PHASE I INVESTIGATION–APRIL 1997
SS-01(D)	○	SURFACE SOIL SAMPLING LOCATION FROM ENGINEERING SCIENCE, INC. PRELIMINARY SITE ASSESSMENT (PSA)–SEPTEMBER 1993
SS-01(E)	○	SURFACE SOIL SAMPLE LOCATION FROM GTI PHASE I INVESTIGATION–APRIL 1997
SHCP-01	x	APPROXIMATE LOCATION OF GRAB SOIL SAMPLE FROM "CUT AND PLUG" PROGRAM EXCAVATION–JANUARY 1999
		APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
		LOCATION OF EXISTING STRUCTURE
		CURRENT SITE BOUNDARY
		FENCE

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

SOURCE: 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.

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

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

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
SAG HARBOR, NEW YORK

PREVIOUS SAMPLE LOCATIONS

PROJECT NO.	1620-D
DATE:	JUNE 2002
SCALE:	AS SHOWN
DRAWING NO.	1

2.0 FIELD INVESTIGATION PROGRAM

2.1 Organization and Overview of Field Program Activities

Environmental samples collected 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. **Drawing 2**, presented at the end of this section, provides the locations of the samples collected during this investigation.

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

- Soil vapor sampling;
- Surface soil sampling;
- Subsurface soil sampling;
- Existing monitoring point inventory, assessment and groundwater sampling;
- Groundwater probe installation and sampling;
- Groundwater monitoring well installation and sampling;
- Ambient air sampling;
- Perimeter and location-specific air monitoring; and
- Surveying and mapping.

The completed field investigation scope of work and sampling programs are presented in this section. Descriptions of drilling and sampling methods and procedures are presented in **Section 2.2.** Environmental samples collected as part of the field investigation program were analyzed for various chemical constituents. The media sampled, chemical constituents analyzed and the laboratory methods for these analyses are summarized in **Table 2-1**. More specific

TABLE 2-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

SAMPLE MEDIA, CHEMICAL CONSTITUENTS AND ANALYTICAL METHODS

Chemical Constituents	SAMPLE MEDIA AND ANALYTICAL METHOD			
	Soil/Sediment	Groundwater/Surface Water/Pore Water	Soil Vapor	Air
BTEX	USEPA Method 8020	USEPA Method 8020	--	--
MTBE	USEPA Method 8020	USEPA Method 8020	--	--
BTEX and Naphthalene	--	--	USEPA Modified Method T0-14	USEPA Modified Method T0-14
PAHs	USEPA Method 8270	USEPA Method 8270	--	--
Total Phenols	USEPA Method 9065	--	--	--
VOCs	--	USEPA Method 8260	--	--
Chlorinated VOCs	--	USEPA Method 8260	--	--
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	--	--
PCBs	USEPA Method 8082	USEPA Method 8082	--	--
Full NYSDEC TCL Organics	USEPA Methods 8260, 8270 and 8080	--	--	--
Full NYSDEC TAL Metals	USEPA Methods 6010/7471	--	--	--
Iron and Manganese	--	USEPA Method 6010	--	--
Total Organic Carbon (TOC)	USEPA SW-846 Method 9060	USEPA Method 415.1	--	--
Vertical Permeability	ASTM Method 5084	--	--	--
Grain Size	ASTM Method D422-63	--	--	--
Bulk Density	ASTM Method D2937-94	--	--	--
Specific Gravity	ASTM Method D854-92	--	--	--
Moisture Content	ASTM Method D2216-92	--	--	--
TAL Metals	--	USEPA Methods 6010/7471	--	--
Sulfate	--	USEPA Method 375.4	--	--
Sulfide	--	USEPA Method 376.2	--	--
Phosphorous	--	USEPA Method 365.2	--	--
Nitrate	--	USEPA Method 352.2	--	--
Nitrite	--	USEPA Method 354.1	--	--
Biological Oxygen Demand (BOD)	--	USEPA Method 405.1	--	--
Methane	--	USEPA Method 3810	--	--
Hydrogen	--	Microseeps Method AM19	--	--
Ethylene	--	USEPA Method 3810	--	--
Ethane	--	USEPA Method 3810	--	--
Chloride	--	USEPA Method 325.3	--	--
Ferrous Iron and Manganese	--	USEPA Method 6010	--	--
Alkalinity	--	USEPA Method 160.1	--	--
Total Dissolved Solids (TDS)	--	USEPA Method 160.2	--	--

Note:

-- : Not sampled/analyzed.

information is presented in the Generic Work Plan for the project. On-site and off-site sample locations are shown on **Drawing 2**, provided in a map pocket at the end of this section.

2.2 Field Methods/Procedures

Drilling and sampling methods and procedures are presented in this section. Further 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, Volume II: Generic Work Plan," dated February 2000.

Surface Soil Sampling

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

Subsurface Soil Sampling

Subsurface soil samples were collected using a direct push (Geoprobe) sampling technique with a decontaminated probe sampler. The samples were screened for VOCs, utilizing a PID or FID; inspected for staining, 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 C**.

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 at a designated 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.

During soil probe installation, a PID was used to monitor VOCs in the breathing zone and at the probe 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 project field book.

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

Upon completion, recovered sample material that was not retained for laboratory analysis was placed back into the probe hole and each probe hole was either allowed to naturally collapse into itself or, if located in a potential source area, pressure grouted. All probe holes were restored at grade with the same material that was originally in place. For example, asphalt areas were replaced with asphalt, concrete areas were replaced 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 manually oscillated to purge approximately three casing volumes from the screen and rod assembly. The screen, check valve and rods were decontaminated and new tubing was used between each interval. The purge water was monitored in the field for the following parameters utilizing a calibrated Horiba U-10 multiple parameter instrument: pH, conductivity, turbidity, dissolved oxygen, temperature and salinity. Subsequent to stabilization of these parameters, groundwater samples were collected for laboratory analysis. Additionally, any evidence of odors, sheens or the presence of free product, were noted. Groundwater samples were then collected from the tubing/check valve assembly into laboratory supplied glass bottles.

Upon completion, all probe holes in potential source areas were pressure-grouted to grade and all other probe holes were allowed to naturally collapse. All probe holes were restored at grade with the same material that was originally in place as described previously.

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. As with the groundwater probes completed as part of this investigation, monitoring wells were installed at three 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 12' 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. 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.

Deep Groundwater

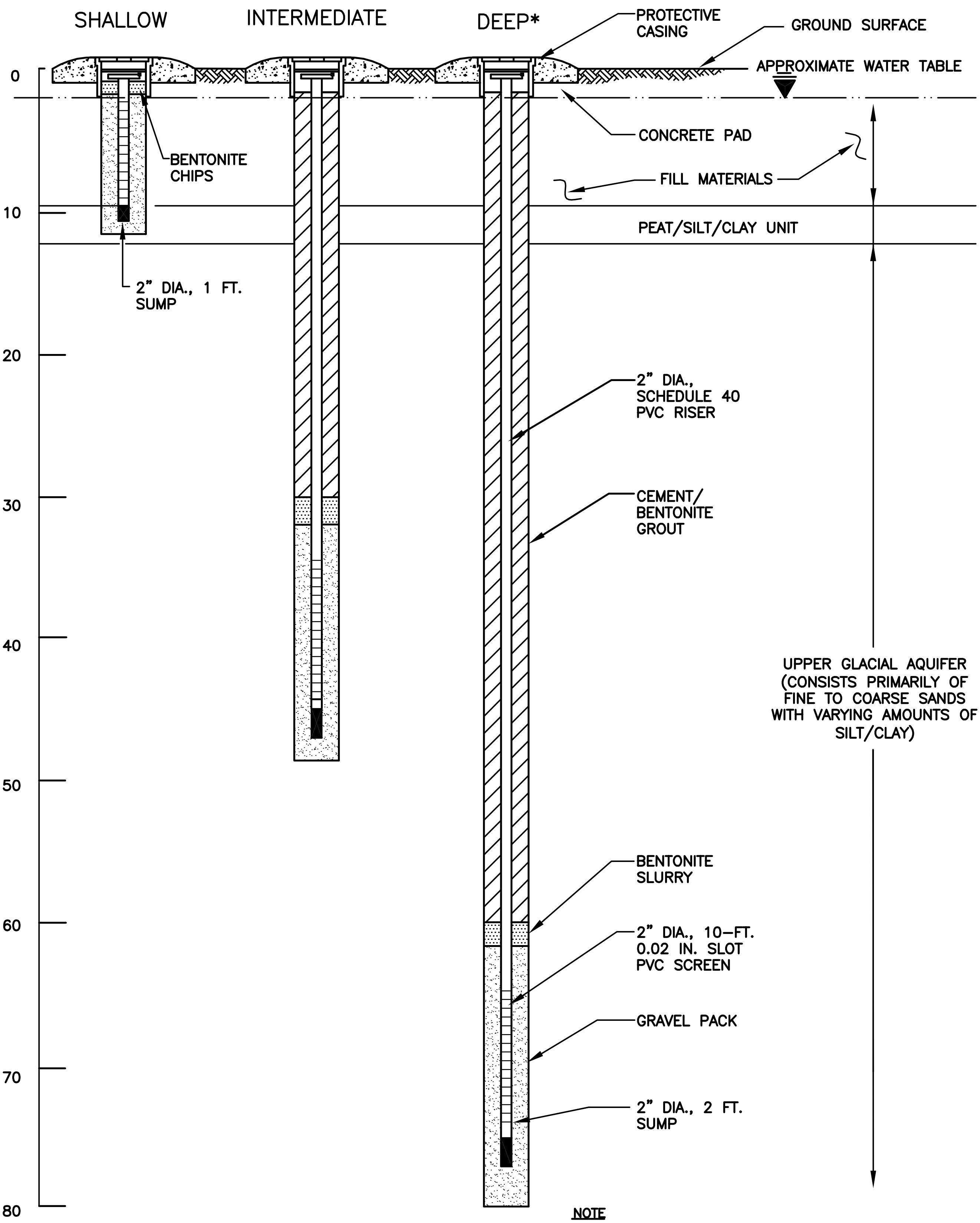
Deep monitoring well SHMW-02D, the only deep well installed as part of this investigation, was installed below the peat/silt/clay unit and screened between 65 and 75 feet bgs. For the purpose of this investigation, deep groundwater is considered groundwater between 45 and 75 feet bgs. The objective of deep well SHMW-02D was to obtain and analyze a representative sample in order to characterize the quality of the deep groundwater zone and, secondly, to obtain potentiometric head elevations needed to determine the vertical gradient between the shallow, intermediate and deep groundwater zones.

Figure 2-1 shows the typical construction of a monitoring well cluster installed under this investigation program.

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

Monitoring wells were constructed with 2-inch diameter, Schedule 40, 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 on-site wells were fitted with flush-mounted locking steel protective casings. **Table 2-2** summarizes the completed well construction details. In addition, the boring logs for these monitoring wells are included in **Appendix C**.

A number 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 the intermediate and the deep 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.



NOTE
* ONLY ONE CLUSTER INCLUDED A DEEP WELL (SHMW-02D)

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

TYPICAL CONSTRUCTION OF NEW MONITORING WELL CLUSTERS

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

FIGURE 2-1

TABLE 2-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

MONITORING WELL CONSTRUCTION SUMMARY

MONITORING WELL *	WELL DEPTH (feet bgs)	TOTAL DEPTH (feet bgs)	GROUND SURFACE ELEVATION (feet)	MEASURING POINT ELEVATION (feet) **	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 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

Notes

* Construction details for MW-01 through MW-06 taken from Fluor Daniel GTI report.
** Top of casing elevation
*** Ground and/or casing elevation not valid (ie. Flush mounted well)

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 new DOT-approved 55-gallon drums for subsequent off-site disposal by KSE.

The new groundwater monitoring wells were developed after their installation. The development process consisted of pumping the wells with a submersible or centrifugal pump while monitoring the flow rate, pH, conductivity, turbidity, dissolved oxygen, temperature, salinity and depth to water. During the development process, the submersible pump or suction pipe was rapidly moved up and down in the groundwater column. This surging action loosens up any fine material adjacent to the gravel pack in the screen zone and permits more water to enter the well. The development process continued until the turbidity readings were 50 NTUs or less and stabilization of the measured field parameters was achieved. All development water was temporarily containerized on-site in frac tanks. After waste characterization, all containerized liquids were removed from the site for off-site disposal by KSE.

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

Groundwater Sampling

Subsequent to installation and development, groundwater samples were collected from the monitoring wells. Prior to sampling, the total depth and depth to water at each well was measured 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.

Monitoring wells were sampled using disposable plastic bailers after purging the equivalent of three to five well volumes of groundwater from each well. Each well was purged using a 12-volt submersible pump or peristaltic pump. During purging, groundwater was pumped through a 4-inch diameter tube or flow cell. The groundwater entered through the bottom of the flow cell and exited through a tube near the top. The probes from the Horiba-U10 and the oxidation reduction potential (ORP) meter were placed into the flow cell so that the parameters for pH, specific conductance, temperature, turbidity, dissolved oxygen, ORP and salinity could be monitored, and recorded using field instrumentation. 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. All purge water was temporarily containerized in DOT-approved 55-gallon drums and transferred into the on-site frac tanks for subsequent off-site disposal by KSE.

Soil Vapor Sampling

Using a hand operated slide hammer, each soil vapor sample was collected by driving a decontaminated stainless steel gas probe approximately 3 to 4 feet bgs. The soil gas probes were then purged using a vacuum pump. After purging each probe for approximately 5 minutes and recording the PID measurement, the probe was then capped and allowed to stabilize for approximately 5 minutes. After the stabilization period, the probe was connected to a laboratory-supplied Summa canister. Summa canisters are stainless steel vessels that have been cleaned and certified contaminant-free by the contract laboratory. Each Summa canister was shipped to the sampling site under a high vacuum (<1 m Torr) to ensure that the canister remained free of contaminants prior to use. After connecting the Summa canister to the soil gas probe, a valve on the canister was opened and the vacuum slowly drew the sample into the canister over a period of approximately 10 minutes. After collecting the gas sample, the valve was closed and disconnected from the soil gas probe. Due to high water table conditions, the planned five on-site soil vapor samples could not be collected during the field investigation.

Air Sampling

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

2.3 Existing Well Inventory and Sampling

At the beginning of the field investigation, an existing groundwater monitoring well inventory was undertaken to locate existing wells and assess their suitability for sampling. The well inventory/assessment focused on wells installed in 1995 in support of the Phase I Site Investigation completed by Fluor Daniel GTI (discussed under **Section 1.7**).

Table 2-3 provides a summary of information obtained during the survey with regard to the existence and condition of each monitoring well. Monitoring well locations are shown on **Drawing 2**. A total of six wells (MW-01 through MW-06) were located within the Sag Harbor site.

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

Each existing well was sampled in March of 2000, and the resultant data was provided on a priority turnaround basis so the information could be utilized in determining the location of additional monitoring wells. Additionally, the existing monitoring wells were resampled in April of 2000 along with the newly installed monitoring wells, with the exception of MW-04, which

TABLE 2-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
EXISTING MONITORING WELL INVENTORY

MONITORING WELL IDENTIFICATION	LOCATION	DIAMETER (Inches)	DEPTH BELOW SURFACE (feet) Measured March 2000	DEPTH BELOW SURFACE (feet) Measured April 2000	DEPTH BELOW SURFACE (feet) Documented	MEASURED DEPTH TO WATER (feet) March 2000	MEASURED DEPTH TO WATER (feet) April 2000	FINAL TURBIDITY AFTER WELL DEVELOPMENT(NTUs) March 2000	FINAL TURBIDITY AFTER WELL DEVELOPMENT(NTUs) April 2000	FREE PRODUCT IDENTIFIED March 2000	FREE PRODUCT IDENTIFIED April 2000	REMARKS March 2000	REMARKS April 2000
MW-01	Central portion of site	2	7.34	7.31	7.32	0.44	0.35	185	35	None	None	Gray with hydrocarbon odor	Light gray with slight hydrocarbon odor
MW-02	Southeastern corner of site	2	7.27	7.11	7.25	0.94	0	939	15	Sheen	Sheen	Black with hydrocarbon odor	Colorless with hydrocarbon odor
MW-03 *	Northwestern portion of site	2	10.2	10.02	10.17	0.46	0.74	>999	0	Sheen	None	Black with hydrocarbon odor	Colorless with hydrocarbon odor
MW-04	Southwestern corner of site	2	6.83	NA	6.81	0.19	NA	35	NA	Slight Sheen	NA	Light brown with hydrocarbon odor	NA
MW-05	Northeastern portion of site	2	6.08	6.11	7.46	0.19	0.68	397	0	Sheen	Sheen, oil blebs	Brown with hydrocarbon odor	Colorless with slight hydrocarbon odor
MW-06	Northeastern corner of site	2	7.49	7.5	7.47	0.72	0.91	730	0	Sheen	None	Dark gray with hydrocarbon odor	Colorless with slight hydrocarbon odor

Notes:

MW: Monitoring wells installed by Fluor Daniel GTI, 1992.

N/A: Not Applicable.

*: MW-04 not sampled in April 2000 due to flooding of area which completely submerged flush mounted well cover.

--: Information not available.

could not be sampled at that time due to the well cover being submerged under surface water that had accumulated in the southwest corner of the site. Purging and sampling procedures for the existing wells were consistent with the procedures described under **Section 2.2**. The groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), total cyanide and Resource Conservation and Recovery Act (RCRA) metals. At four selected downgradient monitoring wells, an additional analysis for free cyanide was performed.

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

2.4 On-site Field Investigation Program

The activities completed as part of the On-site Field Investigation Program are summarized in **Table 2-4**. The on-site sample locations are shown on **Drawing 2**, presented at the end of this section.

Surface Soil

A total of 13 surface soil samples were collected on-site. Surface soil samples were collected at former MGP structures and operations in areas considered to be potential sources of chemical constituents. Samples were collected from 0 to 2 and 0 to 6 inches below the soil surface, beneath the crushed stone covering the site, using disposable plastic scoops. The analytical results of surface soil samples are presented and discussed in **Section 4.2.1**.

Subsurface Soil

A total of 11 shallow soil probes were advanced on-site using the Geoprobe system. Boring logs are included in **Appendix C**. Soil samples were collected continuously. In general, two samples were selected from each boring for laboratory analysis. In situations where staining, NAPL, odors and elevated PID readings were encountered, the soil probes were

TABLE 2-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

ACTIVITY	SAMPLE MEDIA	QUANTITY PROPOSED	QUANTITY ACTUAL	ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Geotechnical Analysis
Surface Soil Samples	Soil	10	10	SHSS-01, SHSS-03, SHSS-05, SHSS-07 thru SHSS-13	6"	SHSS-01, SHSS-03, SHSS-05, SHSS-07 thru SHSS-13	--	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
	Soil	2	3	SHSS-02, SHSS-04, SHSS-06	2"	SHSS-02, SHSS-04, SHSS-06	--	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
Soil Probes	--																					
Soil Probe Samples	Soil	34	49	SHSB-01	28'	SHSB-01 (0.5-1.5)	--	--	--	--	■	--	■	--	--	--	--	■	--	--		--
						SHSB-01 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-01 (26-28)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-02	54'	SHSB-02 (0.5-1.5)	--	--	--	--	■	--	■	--	--	--	--	■	--	--	--	--
						SHSB-02 (6-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-02 (16-18)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-02 (52-54)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-03	36'	SHSB-03 (1-3)	--	--	--	--	■	--	■	--	--	--	--	■	--	--	--	--
						SHSB-03 (10-12)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-03 (34-36)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-04	32'	SHSB-04 (.5-.7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-04 (4-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-04 (24-26)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-05	90'	SHSB-05 (.5-.7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-05 (4-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-05 (22-24)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-05 (88-90)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHMW-02 (adjacent to SHSB-05)	80'																	
				SHSB-06	52'	SHSB-06 (.5-1.5)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-06 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-06 (50-52)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-07	30	SHSB-07 (.5-1)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-07 (8-10)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-07 (26-28)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-08	52	SHSB-08 (2-4)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-08 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-08 (50-52)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-09	32	SHSB-09 (1-3)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-09 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-09 (26-28)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-10	52	SHSB-10 (2-4)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-10 (24-26)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-11	32	SHSB-11 (1.8-3.5)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-11 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-11 (8-10)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-11 (30-32)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-12	36	SHSB-12 (1-3)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-12 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-12 (34-36)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-13	36	SHSB-13 (2-4)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-13 (10-12)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-13 (18-20)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-13 (34-36)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-18	32	SHSB-18 (1-3)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-18 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-18 (30-32)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-19	52	SHSB-19 (2-4)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-19 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-19 (50-52)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--

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

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH	SAMPLE ID	ANALYTICAL PARAMETERS															Geotechnical Analysis
		PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	
Groundwater Probes	--																					
Groundwater Probe Samples	Groundwater	30	36	SHGP-01	34'	SHGP-01 (1-5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-01(32-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-02	62'	SHGP-02 (1-5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-02 (32-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-02 (48-52)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-02 (58-62)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-03	35'	SHGP-03 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-03 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-04	32'	SHGP-04 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-04 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-05	62'	SHGP-05 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-05 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-05 (48-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-05 (60-62)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-06	33'	SHGP-06 (.5-4.5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-06 (31-33)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-07	32'	SHGP-07 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-07 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-08	32'	SHGP-08 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-08 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-09	32'	SHGP-09 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-09 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-10	62'	SHGP-10 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-10 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-10 (48-52)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-10 (58-62)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-11	32'	SHGP-11 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-11 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-12	32'	SHGP-12 (0-4)	--	--	■	--	--	--	--	--	--	■	--	--	--	--	--	--
						SHGP-12 (30-32)	--	--	■	--	--	--	--	--	--	■	--	--	--	--	--	--
				SHGP-13	32'	SHGP-13 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-13 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-25	34'	SHGP-25 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-25 (32-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-26	32'	SHGP-26 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-26 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--

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

SUMMARY OF ON-SITE FIELD INVESTIGATION PROGRAM

ACTIVITY	SAMPLE MEDIA	QUANTITY PROPOSED	QUANTITY ACTUAL	ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Geotechnical Analysis
Existing Groundwater Monitoring Wells	Groundwater	6	11	MW-01	7.50	MW-01 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
						MW-01 (April)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	■	--
				MW-02	7.30	MW-02 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
						MW-02 (April)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	■	--
				MW-03	12.00	MW-03 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
						MW-03 (April)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	■	--
				MW-04	6.85	MW-04 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
				MW-05	7.50	MW-05 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
						MW-05 (April)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	■	--
				MW-06	11.00	MW-06 (March)	■	--	■	--	■	--	--	--	--	--	--	--	--	--	■	--
						MW-06 (April)	■	--	■	■	■	--	--	--	--	--	--	--	--	--	■	--
Newly Constructed Groundwater Monitoring Wells	Groundwater	4	4	SHMW-01	8.00	SHMW-01 S	■	--	■	■	■	--	--	--	■	--	--	--	--	--	■	--
					48.00	SHMW-01 I	■	--	■	■	■	--	--	--	■	--	--	--	--	--	■	■
				SHMW-02	48.00	SHMW-02 I	■	--	■	■	■	--	--	--	■	--	--	--	--	--	■	--
					90.00	SHMW-02 D	■	--	■	■	■	--	--	--	■	--	--	--	--	--	■	■
Ambient Air Sampling	Air	2	2	SHAA-01	NA	SHAA-01	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHAA-02	NA	SHAA-02	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
Soil Vapor Samples *	Soil Vapor/Gas	5	0	SHSV-01	Up to 3-4 feet	SHSV-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSV-02	Up to 3-4 feet	SHSV-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSV-03	Up to 3-4 feet	SHSV-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSV-04	Up to 3-4 feet	SHSV-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHSV-05	Up to 3-4 feet	SHSV-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

■: Analyzed

--: Not Analyzed

*: Soil Vapor samples could not be collected due to insufficient vadose zone.

advanced beyond the planned depth and additional samples were selected for chemical analysis in an effort to define the vertical extent of these conditions.

A total of four deep soil probes were also advanced on-site using the Geoprobe system. These borings were completed to a depth of approximately 52 feet bgs. Soil samples were collected continuously. In general, two or three samples were selected from each boring for laboratory analysis. These samples typically included one saturated sample, one unsaturated sample and one sample from the bottom of the boring. In areas where deep borings were advanced beyond the planned depth, due to the presence of staining, NAPL, etc., additional soil samples were selected for chemical analysis in an effort to define the vertical extent of these conditions.

The determination of the sample collection depths were dependent on the field observations of the collected soil sample. Consistent with the approved Work Plan, if soil staining, an apparent naphthalene/hydrocarbon-like odors or elevated PID readings were observed, the boring was advanced until 10 feet of visibly "clean" soil was encountered and low PID readings were noted before the final soil sample was collected. The analytical results of soil samples collected from soil probes advanced on-site are presented and discussed in **Section 4.2.2**.

Groundwater Probes

A total of 15 groundwater probes were advanced on-site in order to define groundwater conditions vertically and horizontally, and assist in the placement of permanent groundwater monitoring wells. The number of probes, the targeted sampling depths and the location of each probe was determined based on the location of former MGP structures and the anticipated direction of groundwater flow determined during previous studies. Generally, probes were advanced to a maximum depth of approximately 35 feet below grade and sampled at the following approximate intervals: 2 to 6 feet (shallow groundwater zone) and 30 to 34 feet (intermediate groundwater zone). One groundwater probe was also sampled at approximately 50 and 62 feet bgs, and two groundwater probes were sampled at approximately 52 and 62 feet bgs.

The analytical results of groundwater probe samples collected on-site are presented and discussed in **Section 4.2.3**.

Groundwater Monitoring Wells

A total of four new monitoring wells were installed in two well clusters on–site. Monitoring well cluster SHMW-01(S,I), consisting of two wells, was installed on the northwestern portion of the site. Monitoring well cluster SHMW-02(I,D), also consisting of two wells, was installed in the area of the former Separating (Tar) Tank. Monitoring wells were installed by the hollow stem auger method. The number of wells and the depth and location of each well was determined based on the results of the initial round of groundwater sampling conducted at existing wells, completed groundwater probe results, and the anticipated direction of groundwater flow determined during previous studies.

At the SHMW-01 cluster, split spoon soil samples were collected continuously from or near the surface of the soil (beneath the crushed stone) to a depth of 38 feet at the intermediate well in order to characterize the subsurface deposits and hydrogeologic conditions at the site. Due to the fact that a soil boring was located in close proximity to the SHMW-02 cluster, split spoon samples were only collected from a depth of approximately 35 to 46 feet bgs at the intermediate well, and from a depth of 50 feet to the terminal depth (approximately 90 feet bgs) of the deep well. Geotechnical samples were also collected during the soil boring and drilling activities associated with the installation of both of the monitoring well clusters. Samples selected for geotechnical analysis were collected from 0.5 to 1.5 feet bgs and 36 to 38 feet bgs at SHMW-01I, and from 1.0 to 3.0 feet bgs, 35 to 37 feet bgs, 40 to 42 feet bgs, 44 to 46 feet bgs, 65 to 67 feet bgs, 69 to 71 feet bgs and 73 to 75 feet bgs at SHMW-02D. These samples were analyzed for total organic carbon, grain size, bulk density, specific gravity and moisture content. The analytical results of groundwater samples collected on-site are presented and discussed in **Section 4.2.3**.

Air

One indoor air sample and one outdoor ambient air sample was collected on the Sag Harbor site. The indoor air sample was collected from within the compressor station building at the northeast corner of the site to identify potential health risks to workers. The outdoor air sample was collected at a location near the center of the site. The analytical results of the air samples are presented and discussed in **Section 4.2.4**.

2.5 Perimeter and Location-Specific Air Monitoring

During the completion of on-site field activities, perimeter air monitoring was conducted at the site boundary. A photoionization detector (PID) and a dust monitoring instrument were used to detect any potential off-site migration of volatile organic compounds (VOCs) or dust emanating from the on-site field operations. Readings were taken at established air monitoring stations located at approximately 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 and other intrusive activities, 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 intrusive field activity. Each monitoring station contained a data logging PID and a data logging dust meter. In addition, a PID was used to monitor the air quality within the worker's breathing zone and to 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 at the conclusion of the day's work. This information is also available in the project files.

2.6 Off-site Field Investigation Program

The off-site investigation was completed to delineate and assess the presence of chemical constituents that may have migrated off the site. The investigation activities that were completed as part of the Off-site Field Investigation Program are summarized in **Table 2-5**. Off-site sample locations are shown on **Drawing 2**, presented at the end of this section.

Subsurface Soil

Four soil probes were advanced off-site in order to determine if migration of chemical constituents has occurred off-site. The probes were advanced on adjacent properties located off the northwest, northeast, southwest, and southeast corners of the site. Soil samples were collected continuously. Boring logs are included in **Appendix C**. The analytical results of subsurface soil samples are presented and discussed in **Section 4.3.1**.

Groundwater Probes

A total of 15 groundwater probes were advanced off-site. The approved work plan called for the installation of 11 off-site groundwater probes with four north of the site, three northwest of the site, two west and two south of the site. However, based on preliminary groundwater data obtained from these 11 probes, it was determined that additional off-site probes were needed to further define off-site migration of site constituents. These additional 4 groundwater probes included: SHGP-27, placed southwest of the site; SHGP-28, placed west of the site; and SHGP 29 and SHGP-30, placed north of the site.

TABLE 2-5

SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

ACTIVITY	SAMPLE MEDIA	QUANTITY PROPOSED	QUANTITY ACTUAL	ID	DEPTH	SAMPLE ID	BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Geotechnical Analysis
Soil Probes	--		4																			
Soil Probe Samples	Soil	8	9	SHSB-14	52	SHSB-14 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-14 (48-52)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-15	52	SHSB-15 (5-7)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-15 (16-18)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-15 (26-28)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-15 (48-50)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-16	52	SHSB-16 (6-8)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
						SHSB-16 (50-52)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
				SHSB-17	32	SHSB-17 (14-16)	■	--	■	■	■	--	■	--	--	--	--	--	--	--	--	--
Groundwater Probes	--	11	15																			
Groundwater Probe Samples	Groundwater	22	33	SHGP-14	35	SHGP-14 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-14 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-15	35	SHGP-15 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-15 (26-28)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-15 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-16	35	SHGP-16 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-16 (26-28)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-16 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-17	35	SHGP-17 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-17 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-18	32	SHGP-18 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-18 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-19	35	SHGP-19 (3-7)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-19 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-20	35	SHGP-20 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-20 (33-35)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-21	33	SHGP-21 (2-6)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-21 (31-33)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-22	32	SHGP-22 (1-5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-22 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-23	34	SHGP-23 (2-6)	--	--	■	--	--	--	--	--	--	--	■	--	--	--	--	--
						SHGP-23 (32-34)	--	--	■	--	--	--	--	--	--	--	■	--	--	--	--	--
				SHGP-24	35	SHGP-24 (1-5)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-24 (33-35)	--	--	■	--	--	--	--	--	--	--	■	--	--	--	--	--
				SHGP-27	32	SHGP-27 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-27 (30-32)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-28	38	SHGP-28 (4-8)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-28 (34-38)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-29	34	SHGP-29 (7-11)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-29 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
				SHGP-30	50	SHGP-30 (0-4)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-30 (30-34)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--
						SHGP-30 (46-50)	■	--	■	--	--	--	--	--	--	--	--	--	--	--	--	--

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

SUMMARY OF OFF-SITE FIELD INVESTIGATION PROGRAM

ACTIVITY	SAMPLE MEDIA	QUANTITY		ID	DEPTH	SAMPLE ID	ANALYTICAL PARAMETERS															
		PROPOSED	ACTUAL				BTEX	MTBE	PAHs	RCRA Metals	Total Cyanide	Free Cyanide	Total Phenols	PCBs	Iron & Manganese	VOCs	Chlorinated VOCs	Full TCL/TAL	TOC	BTEX and Naphthalene	TDS & Chloride	Geotechnical Analysis
Newly Constructed Groundwater Monitoring Wells	Groundwater	12	14	SHMW-03	14.00	SHMW-03 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-03 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-04	13.00	SHMW-04 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					47.50	SHMW-04 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-05	13.00	SHMW-05 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-05 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-06	8.00	SHMW-06 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-06 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-07	12.00	SHMW-07 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-07 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-08	12.00	SHMW-08 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-08 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
				SHMW-09	14.00	SHMW-09 S	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
					48.00	SHMW-093 I	■	--	■	■	■	■	--	--	--	--	--	--	--	--	■	--
Soil Vapor Samples	Soil Vapor/Gas	13	13	SHSV-06	Up to 3-4 feet	SHSV-06	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-07	Up to 3-4 feet	SHSV-07	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-08	Up to 3-4 feet	SHSV-08	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-09	Up to 3-4 feet	SHSV-09	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-10	Up to 3-4 feet	SHSV-10	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-11	Up to 3-4 feet	SHSV-11	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-12	Up to 3-4 feet	SHSV-12	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-13	Up to 3-4 feet	SHSV-13	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-14	Up to 3-4 feet	SHSV-14	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-15	Up to 3-4 feet	SHSV-15	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-16	Up to 3-4 feet	SHSV-16	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-17	Up to 3-4 feet	SHSV-17	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--
				SHSV-18	Up to 3-4 feet	SHSV-18	--	--	--	--	--	--	--	--	--	--	--	--	--	■	--	--

Notes:

■: Analyzed

--: Not analyzed

In general, depending upon topography, drilling conditions and the depth to the water table, the probes were advanced to target the depths just below groundwater interface (shallow groundwater zone) and approximately 30 feet below the interface (intermediate groundwater zone). Two probes were also sampled at slightly shallower depths of 26 to 28 feet bgs. Additionally, one sample at SHGP-30 was collected at 46 to 50 feet bgs. A total of 33 samples were selected for analysis. The analytical results of off-site groundwater probe samples are presented and discussed in **Section 4.3.2**.

Groundwater Monitoring Wells

In order to characterize off-site groundwater, a total of 14 monitoring wells were installed at seven locations. Each of the seven off-site monitoring well clusters consisted of a shallow and an intermediate well. Although the work plan only called for six well clusters, an additional cluster (SHMW-09S,I) was added to the west of the site, within the Harbor Close Condominium Parking lot. The construction of the off-site groundwater monitoring wells was consistent with the procedures and practices for the on-site monitoring wells, as described in **Section 2.2**. All of the groundwater monitoring wells were completed at grade with flush-mounted locking manhole covers.

The depth of wells depended upon topography, depth to the water table, and on the presence of low permeability materials at depth. Shallow wells are between 7 and 12 feet bgs in total depth and intermediate wells are approximately 45 feet bgs in total depth. Well depths and construction details for all off-site wells are summarized in **Table 2-2**. Boring logs for the monitoring wells are included in **Appendix C**.

Soil cuttings generated during the installation of off-site groundwater monitoring wells, regardless of any visual evidence, odors or elevated PID measurements indicative of the presence of chemical constituents, was stored in on-site roll-off containers.

Upon completion, all wells were developed in accordance with the procedures described in **Section 2.2**. All development water was containerized and transported back to the site and pumped into the on-site frac tanks for subsequent off-site disposal by KSE.

Groundwater samples were collected from the 14 newly installed monitoring wells in April 2000. Groundwater sampling procedures were consistent with **Section 2.2**. The analytical results of the groundwater samples are presented and discussed in **Section 4.3**.

Soil Vapor

A total of 13 soil vapor samples were collected to the southwest, west, northwest, north and northeast of the site. The analytical results of the soil vapor samples are presented and discussed in **Section 4.3.3**.

2.7 Water Level Measurements

Water level measurements were recorded at each of the on-site existing groundwater monitoring wells sampled during the initial March 17, 2000, groundwater sampling round and the April 19 and 20, 2000, sample round. Additionally, in order to generate groundwater contour maps and determine groundwater flow directions, depth to water measurements were collected on December 18, 2000 and April 23, 2001, at all existing and newly installed monitoring wells as well as the surface water gauging station setup on Sag Harbor Cove. Water level data is summarized in **Table 2-6**. 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.

TABLE 2-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER AND SURFACE WATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	MEASURING POINT ELEVATION (feet above msl)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
MW-01	4/25/2000	4.88	1.22	3.66
MW-01	4/26/2000	4.88	1.09	3.79
MW-01	4/26/2000	4.88	1.13	3.75
MW-01	4/26/2000	4.88	1.16	3.72
MW-01	4/26/2000	4.88	1.12	3.76
MW-01	12/18/2000	4.88	0.96	3.92
MW-01	4/23/2001	4.88	1.23	3.65
MW-01	4/23/2001	4.88	1.11	3.77
MW-02	12/18/2000	4.21	0.21	4.00
MW-02	4/23/2001	4.21	0.38	3.83
MW-02	4/23/2001	4.21	0.35	3.86
MW-03	12/18/2000	4.30	1.47	2.83
MW-03	4/23/2001	4.30	1.60	2.70
MW-03	4/23/2001	4.30	1.58	2.72
MW-04	12/18/2000	3.98	0.06	3.92
MW-04	4/23/2001	3.98	0.52	3.46
MW-04	4/23/2001	3.98	0.46	3.52
MW-05	12/18/2000	4.58	0.92	3.66
MW-05	4/23/2001	4.58	1.45	3.13
MW-05	4/23/2001	4.58	1.40	3.18
MW-06	12/18/2000	5.18	1.00	4.18
MW-06	4/23/2001	5.18	1.33	3.85
MW-06	4/23/2001	5.18	1.62	3.56
SHMW-01I	12/18/2000	4.13	3.34	0.79
SHMW-01I	4/23/2001	4.13	1.74	2.39
SHMW-01I	4/23/2001	4.13	2.50	1.63
SHMW-01S	12/18/2000	4.09	0.87	3.22
SHMW-01S	4/23/2001	4.09	1.15	2.94
SHMW-01S	4/23/2001	4.09	1.07	3.02
SHMW-02D	4/25/2000	4.66	1.84	2.82
SHMW-02D	4/26/2000	4.66	0.99	3.67
SHMW-02D	4/26/2000	4.66	1.39	3.27
SHMW-02D	4/26/2000	4.66	1.75	2.91
SHMW-02D	4/26/2000	4.66	1.45	3.21
SHMW-02D	12/18/2000	4.66	3.62	1.04
SHMW-02D	4/23/2001	4.66	1.79	2.87
SHMW-02D	4/23/2001	4.66	2.57	2.09
SHMW-02I	12/18/2000	4.63	3.55	1.08
SHMW-02I	4/23/2001	4.63	2.15	2.48
SHMW-02I	4/23/2001	4.63	2.85	1.78
SHMW-03I	12/18/2000	4.87	4.18	0.69
SHMW-03I	4/23/2001	4.87	2.81	2.06
SHMW-03I	4/23/2001	4.87	3.68	1.19

TABLE 2-6 (continued)
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER AND SURFACE WATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	MEASURING POINT ELEVATION (feet above msl)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
SHMW-03S	12/18/2000	4.80	3.70	1.10
SHMW-03S	4/23/2001	4.80	3.55	1.25
SHMW-03S	4/23/2001	4.80	3.60	1.20
SHMW-04I	4/25/2000	5.13	2.25	2.88
SHMW-04I	4/26/2000	5.13	1.31	3.82
SHMW-04I	4/26/2000	5.13	1.73	3.40
SHMW-04I	4/26/2000	5.13	2.17	2.96
SHMW-04I	4/26/2000	5.13	1.85	3.28
SHMW-04I	12/18/2000	5.13	3.70	1.43
SHMW-04I	4/23/2001	5.13	2.85	2.28
SHMW-04I	4/23/2001	5.13	3.39	1.74
SHMW-04S	4/25/2000	5.27	3.66	1.61
SHMW-04S	4/26/2000	5.27	3.45	1.82
SHMW-04S	4/26/2000	5.27	3.41	1.86
SHMW-04S	4/26/2000	5.27	3.47	1.80
SHMW-04S	4/26/2000	5.27	3.49	1.78
SHMW-04S	12/18/2000	5.27	4.51	0.76
SHMW-04S	4/23/2001	5.27	3.41	1.86
SHMW-04S	4/23/2001	5.27	3.45	1.82
SHMW-05I	12/18/2000	5.60	4.58	1.02
SHMW-05I	4/23/2001	5.60	3.47	2.13
SHMW-05I	4/23/2001	5.60	3.98	1.62
SHMW-05S	12/18/2000	5.79	3.82	1.97
SHMW-05S	4/23/2001	5.79	3.84	1.95
SHMW-05S	4/23/2001	5.79	3.85	1.94
SHMW-06I	12/18/2000	4.15	2.98	1.17
SHMW-06I	4/23/2001	4.15	1.65	2.50
SHMW-06I	4/23/2001	4.15	2.24	1.91
SHMW-06S	12/18/2000	4.16	0.61	3.55
SHMW-06S	4/23/2001	4.16	0.83	3.33
SHMW-06S	4/23/2001	4.16	0.73	3.43
SHMW-07I	4/25/2000	4.72	1.83	2.89
SHMW-07I	4/26/2000	4.72	1.19	3.53
SHMW-07I	4/26/2000	4.72	1.44	3.28
SHMW-07I	4/26/2000	4.72	1.75	2.97
SHMW-07I	4/26/2000	4.72	1.56	3.16
SHMW-07I	12/18/2000	4.72	3.30	1.42
SHMW-07I	4/23/2001	4.72	2.02	2.70
SHMW-07I	4/23/2001	4.72	2.57	2.15
SHMW-07S	4/25/2000	4.63	0.69	3.94
SHMW-07S	4/26/2000	4.63	0.55	4.08
SHMW-07S	4/26/2000	4.63	0.56	4.07
SHMW-07S	4/26/2000	4.63	0.61	4.02
SHMW-07S	4/26/2000	4.63	0.60	4.03
SHMW-07S	12/18/2000	4.63	0.93	3.70
SHMW-07S	4/23/2001	4.63	0.96	3.67
SHMW-07S	4/23/2001	4.63	0.90	3.73

TABLE 2-6 (continued)
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER AND SURFACE WATER MEASUREMENTS AND CALCULATED ELEVATIONS

MONITORING WELL ID	DATE OF MEASUREMENT	MEASURING POINT ELEVATION (feet above msl)	DEPTH TO WATER (feet)	WATER ELEVATION (feet above msl)
SHMW-08I	4/23/2001	4.15	2.07	2.08
SHMW-08I	4/23/2001	4.15	2.73	1.42
SHMW-08S	12/18/2000	4.93	0.73	4.20
SHMW-08S	4/23/2001	4.93	1.11	3.82
SHMW-08S	4/23/2001	4.93	0.96	3.97
SHMW-09I	4/25/2000	3.72	1.46	2.26
SHMW-09I	4/26/2000	3.72	0.91	2.81
SHMW-09I	4/26/2000	3.72	1.09	2.63
SHMW-09I	4/26/2000	3.72	1.39	2.33
SHMW-09I	4/26/2000	3.72	1.26	2.46
SHMW-09I	12/18/2000	3.72	2.56	1.16
SHMW-09I	4/23/2001	3.72	1.77	1.95
SHMW-09I	4/23/2001	3.72	2.18	1.54
SHMW-09S	4/25/2000	4.03	1.52	2.51
SHMW-09S	4/26/2000	4.03	1.20	2.83
SHMW-09S	4/26/2000	4.03	1.29	2.74
SHMW-09S	4/26/2000	4.03	1.46	2.57
SHMW-09S	4/26/2000	4.03	1.39	2.64
SHMW-09S	12/18/2000	4.03	1.82	2.21
SHMW-09S	4/23/2001	4.03	1.75	2.28
SHMW-09S	4/23/2001	4.03	1.89	2.14
SHTG-01	4/25/2000	9.52	10.20	- 0.68
SHTG-01	4/26/2000	9.52	8.04	1.48
SHTG-01	4/26/2000	9.52	9.27	0.25
SHTG-01	4/26/2000	9.52	10.17	- 0.65
SHTG-01	4/26/2000	9.52	9.21	0.31
SHTG-01	12/18/2000	9.52	12.30	- 2.78
SHTG-01	4/23/2001	9.52	8.48	1.04
SHTG-01	4/23/2001	9.52	10.45	- 0.93

2.8 Cut and Plug Interim Remedial Measures

As previously stated in **Section 1.8**, a "cut and plug" IRM Program was previously undertaken at the Sag Harbor former MGP site. The objective of the Cut and Plug IRM Program was to locate underground piping associated with historic MGP operations so that each pipe could be cut, drained of any fluids and plugged in order to limit the potential for any off-site migration of MGP-related constituents. The Cut and Plug IRM Program was undertaken at the Sag Harbor former MGP site between January 4 and January 8, 1999. **Figure 1-11** shows the location of each completed excavation.

Historical site drawings were reviewed and candidate piping that offered potential to traverse the site boundaries was identified. In accordance with the work plan, all candidate piping that could be located that was four inches in diameter or larger, and offered potential to traverse the site boundaries, was terminated. Based on a review of site drawings, the following candidate piping was targeted: abandoned 4-inch clay sewer pipe on the central-northern portion of the site; abandoned 4-inch gas pipe on the northwestern portion of the site; and an abandoned 4-inch gas pipe on the southeastern portion of the site. The abandoned 4-inch clay sewer pipe on the central northern portion of the site and the abandoned 4-inch gas pipe in the southeastern portion of the site were located and capped with concrete. The targeted 4-inch gas pipe on the northwestern portion of the site was not confirmed to exist (an approximate 3' wide by 51' long excavation was conducted along the northwestern boundary of the site).

Trenches were excavated using a backhoe and, in some instances, excavation was conducted manually by hand, by Foster Wheeler, Inc. Pipes exposed within excavations were cut, drained of any liquid contents and plugged with concrete by Coastal Environmental Technologies (Coastal), a subcontractor to Foster Wheeler, Inc. Coastal contained all liquid contents drained from piping and transported the material for proper off-site disposal. After completing this operation, excavations were backfilled with native soil as well as non-native clean fill. However, pipes suspected of containing gas were not immediately cut and plugged. Instead, they were marked for tapping by KSE and these excavations were temporarily left open. Open excavations were secured using temporary construction fences.

During the IRM, a total of four soil samples were obtained from the trenches for analysis of BTEX compounds, PAHs, RCRA metals and total cyanide. Samples selected for analysis were collected from excavations where visible staining or MGP residuals were noted. The first sample (SHCP-1) was collected from Excavation 1, which was targeted to locate the abandoned underground 4-inch clay sewer pipe on the central northern portion of the site. This sample was selected from the middle of the trench at a depth of 3.5 feet and exhibited staining and a hydrocarbon odor. The second soil sample (SHCP-2) was collected from Excavation 3, which was targeted to locate the abandoned 4-inch gas pipe on the northwestern portion of the site. This sample was collected from the middle of the trench and also exhibited staining and a petroleum odor. The third and fourth samples (SHCP-3 and SHCP-4) were collected from Excavation 4, which was targeted to locate the abandoned underground 4-inch gas pipe on the southeastern portion of the site. Sample SHCP-3 was collected at a depth of 3.5 feet in the middle of the trench and exhibited a slight petroleum odor. Sample SHCP-4 was collected at a depth of 3 feet, approximately 2 feet west of the entrance gate. This additional sample was selected because this area was darker in color and closer to the property line. Analytical results for these samples are presented in **Appendix B**.

2.9 Surveying and Mapping

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

2.10 Tidal Survey

A tidal survey was performed at the Sag Harbor site between April 25, 2000 and April 27, 2000. Four shallow wells (MW-01, SHMW-04S, SHMW-07S and SHMW-09S), three intermediate wells (SHMW-04I, SHMW-07I and SHMW-09I), and one deep well (SHMW-02D) were selected for water level monitoring during the 48-hour long tidal survey. In addition, a surface water gauging station was setup on Sag Harbor Cover in order to record tidal fluctuations over the survey period. The tidal survey was conducted in order to identify if tidal influences affect groundwater at the site. Additionally, data collected from the intermediate and deep wells was used to examine generalized tidal response of intermediate and deep groundwater zones at the site.

MiniTROLL™ pressure transducer/data loggers were deployed in each of the selected wells and gauging station to depths of between approximately 4 and 7 feet below the top of casing. When the transducers were installed, data loggers were set to convert the pressure head of the water column above each transducer to elevation head, or height of the water column above each MiniTROLL™. All transducers were recording data by April 25, 2000 at 14:15 hours and continued to record until April 27, 2000, 14:15 hours.

Three complete tidal cycles were monitored during the survey period. A complete tidal cycle is interpreted as the interval between one high tide and the next high tide. Because the transducers and dataloggers record elevation heads in all wells simultaneously, instantaneous data is obtained for all survey stations. Data gathered during the tidal survey is presented and discussed in the **Section 3.3.1**.

2.11 Laboratory Analysis and Data Management

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

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

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

2.12 Data Validation/Data Usability

All analytical data packages submitted by both laboratories, Mitkem Corporation Inc., and Air Toxics Ltd, were validated in accordance with New York State 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.

2.12.1 Sample Collection and Analysis

The field program consisted of collecting samples from various environmental media including surface soil, subsurface soil, Geoprobe groundwater, monitoring well groundwater, ambient air, and soil vapor. Sample collection was performed in accordance with the procedures set forth in the Work Plan for the Sag Harbor former MGP site dated February, 2000. The water and soil samples were analyzed by Mitkem, a subcontractor to D&B, in accordance with the USEPA SW-846 methods stipulated in the Work Plan as well as NYSDEC ASP QA/QC requirements. The ambient air and soil vapor samples were analyzed by Air Toxics 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 **Tables 2-4** and **2-5**. The environmental samples were primarily analyzed for the following parameters:

Sample Type	**Analytical Parameters**
Geoprobe Groundwater	BTEX and PAHs
Monitoring Well Groundwater	BTEX, PAHs, Chlorides, TDS, RCRA metals and CN
Soil Borings (Subsurface Soil)	BTEX, PAHs, RCRA metals, CN and phenols
Surface Soil	BTEX, PAHs, total Phenols RCRA metals and cyanide
Ambient Air	Volatile organics and naphthalene
Soil Vapor	BTEX and naphthalene

In addition to the above analyses, several of the monitoring well samples were also analyzed for dissolved gases and wet chemistry parameters. Several Geoprobe groundwater samples were also analyzed for chlorinated volatile organic compounds. Several subsurface soil samples were also analyzed for the full TCL and TAL parameters, and select surface soil samples were analyzed for PCBs. Analytical methods and detection limits are presented in **Appendix D**.

2.12.2 Data Quality Objectives

The primary objective for this investigation was to obtain valid defensible data to be used to determine the nature, extent and sources of chemical constituents at the site in support of site characterization, as well as the future evaluation of appropriate remedial alternatives. The data was also utilized during the Remedial Investigation to monitor for the health and safety of workers at the site and potential receptors off-site. This objective was achieved by designing a sampling program to encompass the entire site and surrounding area. The 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.).

2.12.3 Data Quality and Usability

In order to determine the quality and usability of the sample results, the data packages submitted by the laboratories were validated. Data validation was performed in accordance with NYSDEC 10/95 ASP QA/QC requirements. A validation report was prepared for each sample delivery group (SDG) or data package. Copies of 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 usable for environmental assessment purposes. The findings of the validation process are summarized below.

General Findings

The majority of sample analyses were performed within the NYSDEC 10/95 ASP specified holding times. All calibrations were run in accordance with the specified methods.

Several samples required reanalysis at secondary dilutions due to compound concentrations exceeding the instrument calibration range. The data for the compounds which exceeded the calibration range were taken from the diluted runs and flagged “D” on the data summary tables with all other results being taken from the undiluted or initial analysis.

Several samples had surrogate recoveries outside QC limits. The samples were reanalyzed as required by the NYSDEC ASP. The “best set,” most contractually compliant data has been included on the data summary tables.

Several water samples required filtering of the metals fraction by the laboratory prior to analysis due to a turbidity of >50 NTUs. In these instances, the metals results have been reported as dissolved.

BTEX and PAH compound concentrations were calculated using the response factors from the initial calibrations, which is acceptable with USEPA SW-846 methodologies.

On-site Field Investigation

Acetone has been qualified as estimated, possibly biased high, in sample SHSB-03 (1-3). That is, the method blank associated with this sample also contained acetone and the sample concentration was greater than 10 times the concentration found in the method blank.

All analytical results for samples SHSB-13 (10-12) and SHSB-11 (8-10) have been qualified as estimated, possibly biased high, due to percent moistures of 83% and 81%, respectively. Protocol states that for a solid sample if the % moisture is greater than 50%, the results should be qualified as estimated.

In the volatile fraction of sample SHSB-1 (0.5-1.5), the results for acetone and naphthalene have been qualified as nondetect due laboratory contamination.

Sample SHGP-03 (33-35) was only analyzed for BTEX since the PAH sample bottles were broken upon receipt at the laboratory.

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

Off-site Field Investigation

The xylene results for samples SHGP-14 (33-35) have been qualified as nondetect due to field blank contamination. That is, xylenes were detected in the field blank associated with these samples and the concentrations found in the field blank and the sample were comparable.

The xylene result for SHGP-27 (30-32) has been qualified as nondetect due to blank contamination. The trip blank associated with this sample also contained xylenes at the same concentration (1 ug/l).

Free cyanide was detected in the field blank associated with samples SHMW-06I, SHMW-06S, SHMW-07I, SHMW-07S, SHMW-08I, SHMW-08S, SHMW-01 and SHMW-02, therefore, the free cyanide results for the samples have been qualified as estimated.

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

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

SOURCE: 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.

0 30
SCALE IN FEET

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

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

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
SAG HARBOR, NEW YORK

SAMPLE LOCATION MAP

PROJECT NO.: 1620-D
DATE: JUNE 2002
SCALE: AS SHOWN
DRAWING NO.: 2

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Introduction

The following section presents a discussion of the geologic and hydrogeologic findings along with an evaluation and interpretation of data collected during the completion of the Remedial Investigation. Data generated as part of the field investigation and utilized as part of this evaluation includes the following:

- Logs from completed borings, test pits and monitoring wells;
- Geotechnical analysis of selected soil samples;
- Hydraulic head measurements from existing and newly installed monitoring wells; and
- Water level measurements obtained during a 48-hour tidal survey.

This data was evaluated and interpreted in conjunction with the regional geology/hydrogeology characterization of the study area and surrounding environs, as presented in **Sections 1.5.7 and 1.5.8.** The locations of probes, borings and monitoring wells referenced in this section are shown on **Drawing 2** located in the map pocket at the end of **Section 2.0**, and boring logs are included in **Appendix C.**

Based on geologic information collected during the field investigation, 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 of the report. **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. Relying on the above cross sections, a discussion of site stratigraphy is presented in **Section 3.2.**

Additionally, water table and potentiometric surface contour maps were prepared from tidal survey water level measurements and synoptic water level measurements collected from monitoring wells and a surface water gauging station. Figures depicting observed tidal fluctuations as well as groundwater contour maps were generated from this data and are included and discussed in **Section 3.3**.

3.2 Site Stratigraphy

3.2.1 Fill Deposits

As discussed in **Section 1.5**, the Sag Harbor area consisted of tidal marshland which was filled to allow for development in the 1730s. As a result, the site and surrounding area contains a shallow layer of fill material typically overlaying marsh deposits of peat and silt/clay. 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 are highly variable in character and thickness. The fill consists primarily of sand but also includes varying amounts of silt, clay, gravel and cobbles. Also present are 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 are also present. Staining, naphthalene/hydrocarbon-like odors and oily sheen were commonly observed in the fill material within and adjacent to the site. As illustrated on **Drawings 3A** and **3B**, presented at the end of this section, the fill is approximately 6 to 8 feet thick throughout the site and rests on top of the underlying peat deposit. One area where the peat deposit may be absent and the fill is in direct contact with the shallow sand unit (see **Section 3.2.3**) is within the general vicinity of the former Gas Holder No. 3, as defined by soil probes SHSB-09 and SHSB-10. However, the recovery of soil samples was poor at both probe locations at the intervals where the peat deposit would have been expected, making a determination regarding the presence or absence of the peat deposit in this area inconclusive. Off-site, the fill material ranges from approximately 4 to 6 feet in thickness and appears to be underlain by peat deposits in most locations with the exception of areas to the north of the site. This is based on soil data obtained from well locations SHMW-03 and SHMW-04. In this area, the fill appears to be in direct contact with underlying sand units.

Two shallow soil samples, SHMW-01 (0.5'-1.5') and SHMW-02D (1'-3'), were collected in order to characterize geotechnical properties of the fill present at or near the water table. The geotechnical data obtained from these samples is summarized on **Table 3-1**. Total organic content (TOC) of the fill samples were relatively high at 3.4 percent and 10.8 percent, respectively. The fraction of organic content within a soil is the dominant characteristic affecting the adsorption capacity of nonionic organic compounds such as BTEX and PAHs 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 therefore immobilize such organic contaminants. Higher organic contents indicate increased capacity for adsorption and immobilization of organic compounds. Results of the TOC analysis suggests the fill would have a relatively high adsorption capacity for BTEX and PAHs.

Review of the additional geotechnical data presented in **Table 3-1** indicates that the fill material contains appreciable amounts of silt and finer material with SHMW-01 (0.5-1.5 feet) and SHMW-02D (1-3 feet) having 10 and 7 percent, respectively, of each sample passing through the No. 200 sieve (0.074 mm). Additionally, the effective grain size (d10) of each sample varies from silt (0.073 mm) to fine sand (0.165 mm) indicating a low to moderate hydraulic conductivity for this material.

3.2.2 Peat and Silt/Clay Units

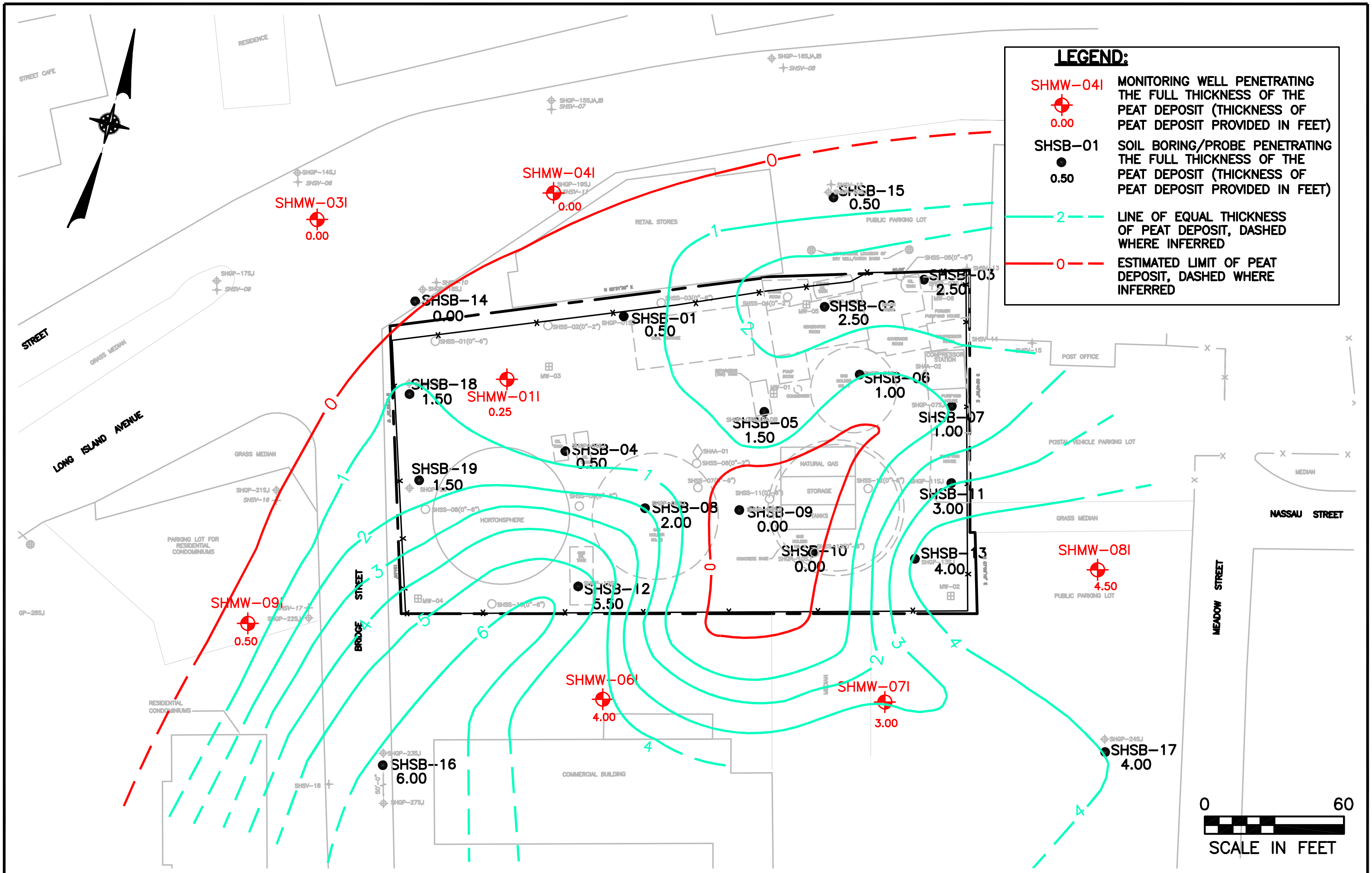
A fairly continuous peat deposit which mainly occurs in conjunction with fine-grained inorganic sediments consisting of silt, sandy silt, silty sand, clayey sand and clay (herein referred to as the Silt/Clay Unit) underlies the fill unit throughout the site and much of the surrounding area. The peat deposit is generally described as a brown to black clay rich peat with a distinctive marsh-like or hydrogen sulfide-like odor that is generally found between 7 and 8 feet bgs. **Figure 3-1** is a contour map depicting the estimated total thickness and extent of the peat deposit. The peat deposit appears to be thickest within the southwest corner of the site, as

TABLE 3-1

SAG HARBOR
FORMER MGP SITE REMEDIAL INVESTIGATION
GEOTECHNICAL ANALYTICAL RESULTS FOR
SELECTED SOIL SAMPLES

Sample Identification		SHMW-01S	SHMW-02D	SHMW-01I	SHMW-02I	SHMW-02D	SHMW-02D
Depth (feet)		0.5-1.5 ft.	1-3 ft.	36-38 ft.	35-36 ft.	65-67 ft.	69-71 ft.
Date Collected		3/22/00	4/17/00	3/24/00	4/17/00	4/18/00	4/18/00
CHARACTERISTIC	UNIT						
w	%	13.9	28.5	19.7	19.0	15.7	17.5
Sieve	%	10	7	23	2	4	2
TOC	%	3.4	10.8	0.4	0.2	2.4	0.9
G_s	none	2.63	2.41	2.67	2.66	2.60	2.66
d_{10}	mm	0.073	0.165	<0.073	0.20	0.185	0.22

w - Water content
Sieve - % sample particles passing 200 sieve
TOC - Total Organic Carbon
Gs - Specific Gravity
d10 - Effective grain size : diameter at which 10% of sample particles are finer and 90% are coarser
% - Percent
mm - Milimeters
< Less than



SAG HARBOR FORMER MGP SITE
SAG HARBOR, NEW YORK

THICKNESS AND EXTENT OF THE PEAT DEPOSIT

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

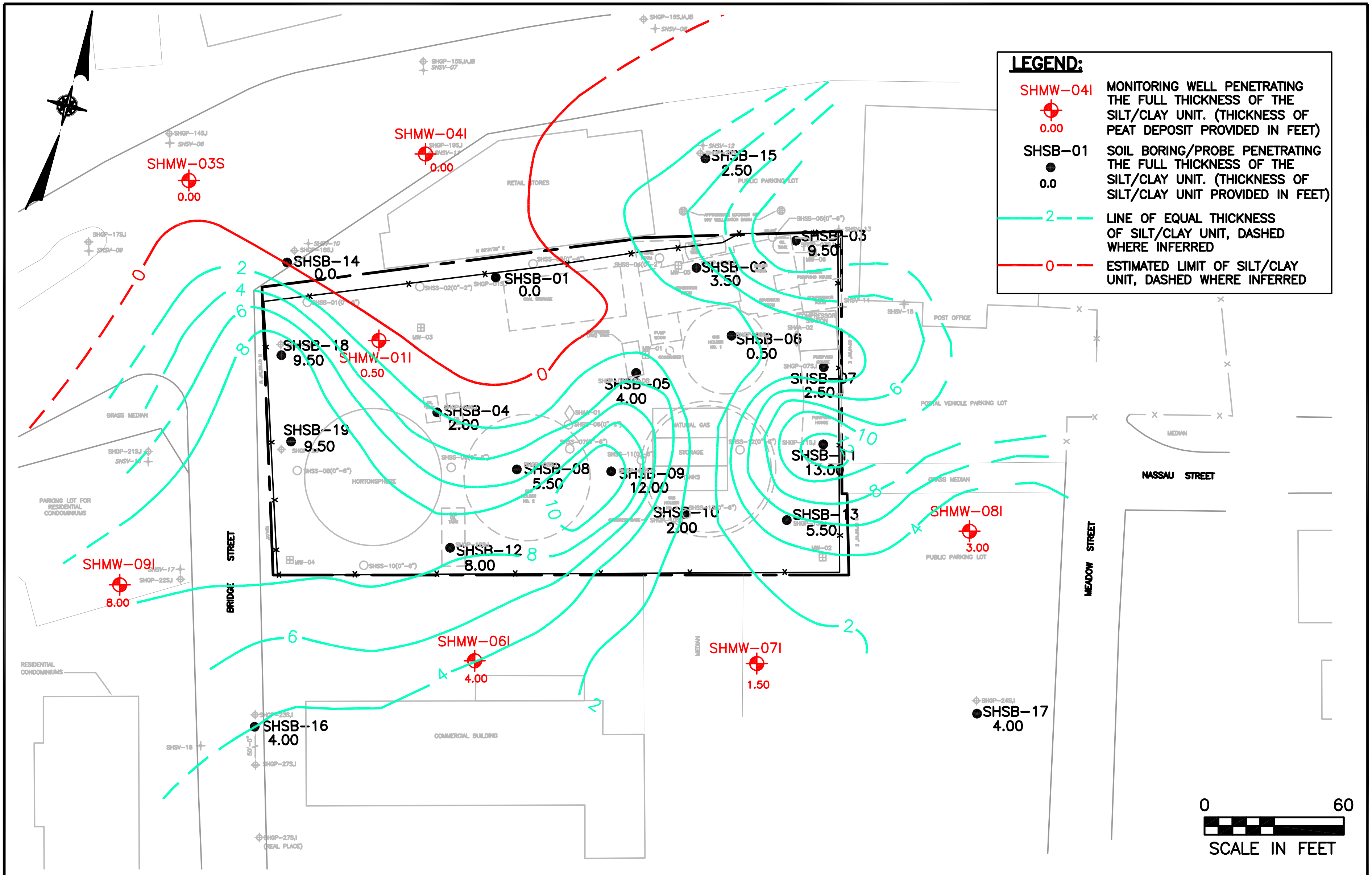
FIGURE 3-1

defined by SHSB-12 (5.5 feet) and off-site soil probe SHSB-16 (6.0 feet). It also appears to be fairly thick in the southeastern portion of the site, as defined by SHSB-13 (4.0 feet) and off-site soil probe SHSB-17 (4.0 feet). The peat deposit appears to be thinnest or absent in the northern portions of the site, as defined by SHSB-04 (0.5 feet), SHMW-01 (0.5 feet). The peat deposit also appears to be absent at soil probe locations SHSB-09 and SHSB-10; however, the recovery of soil samples at the intervals where the peat would be expected was poor, making a determination as to the presence or absence of the peat deposit in this area inconclusive. As shown on **Figure 3-1**, the peat deposit appears to be absent to the north of the site, as indicated by soil recovered from monitoring well boreholes SHMW-03I, SHMW-04I and soil probe SHSB-14.

At most locations, the peat deposit 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 Silt/Clay Unit can be generally described as a brown silty fine sand with clay containing varying amounts of coarse sand and gravel. At a number of locations, it is described as a dark brown silt being soft to slightly plastic in consistency, indicating a high percentage of clay. As shown in **Figure 3-2**, the thickness of the Silt/Clay Unit varies considerably across the site. It appears to be thickest at SHSB-09 (12 feet), located in the south central portion of the site, while data suggests that the unit appears to be less than 1-foot or possibly absent along the northwestern portion of the site, as indicated by SHSB-01 and SHMW-01I, as well as off-site to the northwest as indicated by SHSB-14. Additionally, the Silt/Clay Unit appears to be fairly thin within the area of former Gas Holder No. 1, as defined by SHSB-06 (0.5 feet), as well as former Gas Holder No. 3, as defined by SHSB-10 (2.0 feet). Where present, the Silt/Clay Unit may act as a confining unit, limiting the vertical migration of MGP-related constituents.

3.2.3 Shallow Sand Unit

A deposit of fairly well sorted brown, fine to medium grained, quartz sand characteristic of highly permeable glacial sands found throughout much of Long Island underlies the Silt/Clay Unit. Soil sample SHMW-02I (35-36 feet) was selected for geotechnical analysis given it



SAG HARBOR FORMER MGP SITE
SAG HARBOR, NEW YORK

THICKNESS AND EXTENT OF THE SILT/CLAY UNIT

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

FIGURE 3–2

consisted of a medium grained sand typical of the majority of sediment encountered in the shallow sand unit. Based on the geotechnical data presented in **Table 3-1**, only 2 percent of the grains comprising the sample were finer than 0.074 mm (i.e., grains that may be considered silt or clay), indicating very few silt/clay grains in the sample. The effective grain size (d10) of the sample was 0.20 mm ,indicating 90 percent of the sample consisted of grains larger than fine sand. This data suggests 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). Additionally, this sample was found to be relatively low in organic matter, having a TOC of only 0.20 percent, also typical of Long Island glacial sand deposits.

The shallow sand unit contains a series of fine sand and silt lenses encountered throughout its vertical extent to a depth of about 55 feet bgs. The presence of the fine sand/silt lenses interbedded with coarser sand is consistent with the glacial stratigraphy of the Sag Harbor area as described in **Section 1.5.7.** The fine sand/silt lenses vary from a brown silty fine sand to an almost pure silt deposit that is described as being soft to slightly plastic. At monitoring well locations SHMW-07 and SHMW-09, located south and southwest of the site, respectively, 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. Soil sample SHMW-01I (36-38 feet bgs) was selected for geotechnical analysis given it was characteristic of the majority of fine sand/silt lenses encountered at the site. As summarized in **Table 3-1**, results of the geotechnical analysis indicate the sample is comprised of 23 percent grains of silt size or smaller (0.074 mm) and a d10 of less than 0.073 mm, indicating a relatively lower hydraulic conductivity when compared to the more sand-rich zones which comprise the majority of the shallow sand unit. Additionally, the sample exhibited a relatively low TOC of only 0.4 percent.

As indicated by the geologic cross sections provided on **Drawings 3A** and **3B**, the fine sand/silt lenses are most prevalent south and southwest of the site. The north-central and northeastern portions of the site appear to be relatively free of the fine sand/silt lenses, as do the areas off-site to the northwest. However, stratigraphic data is limited in this off-site area due to the inability to collect split spoon samples at monitoring well clusters SHMW-03 and SHMW-04 below a depth of 12 feet. Sample collection activities in these areas had to be limited to shallow soil in order to minimize the disruption of automobile traffic along Long Island Avenue and West Water Street.

While a number of fine sand/silt lenses were encountered, they appear to be generally thin, with the majority being less than 5 feet 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. As illustrated in cross-sections B-B' and C-C', the only 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.

Due to their discontinuous nature, the fine sand/silt lenses do not represent an effective confining unit with regard to the vertical movement of groundwater and/or MGP-related constituents. However, the 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.

3.2.4 Deep Sand Unit

Though the majority of completed borings were terminated at or near 45 feet bgs, one deep boring (SHMW-02D) was completed to a depth of 90 feet bgs within the central portion of the site. Based on soil samples recovered below a depth of 55 feet bgs at this location, the deep sand unit is similar in character to the shallow sand unit, consisting of a brown fine to coarse sand with only a trace of silt; however, fine sand/silt lenses were not encountered. This appears to be consistent with the glacial stratigraphy of the Sag Harbor area as discussed in **Section 1.5.7**, where sand interbedded with silt and clay transitions into a more sand-rich strata at 50 to 55 feet below grade. Geotechnical analysis of two samples collected from SHMW-02D at 65 to 67 feet and 69 to 75 feet bgs, the results of which are summarized on **Table 3-1**, indicate only 2 to 4 percent of the samples consisted of grains finer than the Number 200 sieve (0.074 mm opening), suggesting the deep sand unit contains very few fines and has good water-transmitting properties. TOC analysis of the samples indicates a relatively large variation in TOC, with the 65 to 67-foot sample exhibiting a TOC of 2.4 percent, and the 69 to 71-foot sample exhibiting a TOC of only 0.9 percent. 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 completion of field activities which are summarized in **Table 2-6**, groundwater within the Sag Harbor former MGP site is encountered at relatively shallow depths ranging from less than 0.5 feet bgs at monitoring well MW-04, located in the extreme southwestern corner of the site, to a maximum of 1.60 feet at MW-06, located in the extreme northeast corner 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 between 3.50 and 3.85 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-07) also indicate a relatively shallow water table, with depth to water levels ranging from 0.73 to 0.96 feet bgs in this area.

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/silt/clay unit described in **Section 3.2.2**. Where this unit is 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/silt/clay unit is 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/silt/clay unit 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 unit is considered to be under partial confining conditions.

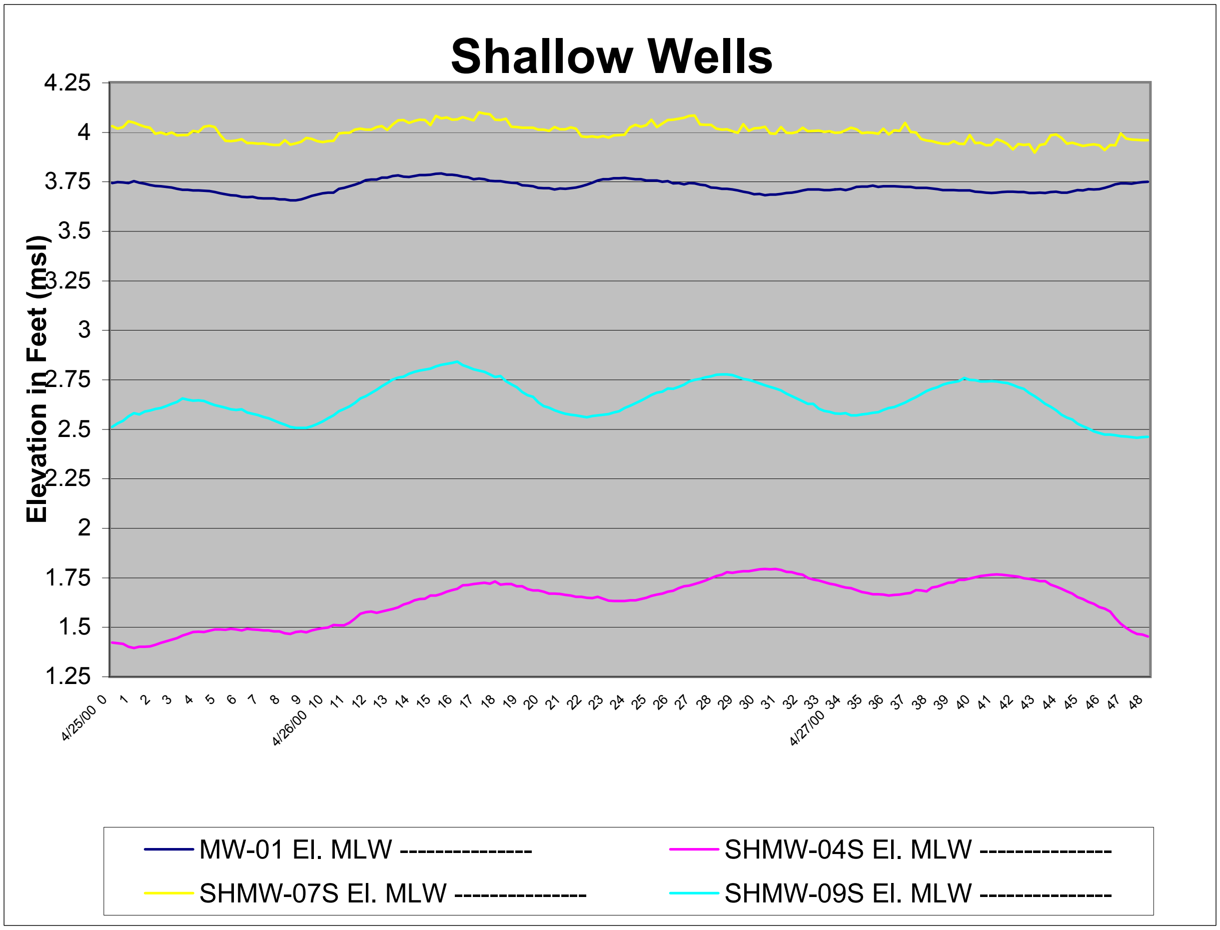
In order to determine groundwater flow patterns within the site and adjacent areas, a number of groundwater contour maps where generated during several different periods using synoptic water levels collected from the groundwater monitoring network consisting of 24 wells and one surface water gauging station. The water level data is summarized on **Table 2-6**. Groundwater contour maps were generated using data collected during periods of high tide, low tide and transitional or mid-tidal stages in an effort to identify the influence of tidal actions on groundwater flow patterns. Additionally, water levels associated with wet and dry periods were used to determine the potential influence that localized mounding of the water table may have on flow patterns after periods of precipitation. Finally, a 48-hour tidal survey was conducted at the surface water gauging station and selected monitoring wells in order to assess the degree to which groundwater levels are influenced by tidal fluctuations in Sag Harbor Cove. Additional details regarding how the tidal survey was conducted are presented in **Section 2.10**.

3.3.1 Tidal Influences on Groundwater Levels

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

The results of the tidal survey conducted on April 25 through April 27, 2000, are graphically displayed on **Figures 3-3** and **3-4**. Based on the results, Sag Harbor Cove has a tidal range of approximately 2 1/2 feet. Note that the tidal survey was conducted during a full moon or spring tide in order to observe the maximum tidal influence on groundwater flow patterns

FIGURE 3-3
SAG HARBOR FORMER MGP SITE INVESTIGATION
TIDAL FLUCTUATIONS OBSERVED IN SHALLOW MONITORING WELLS



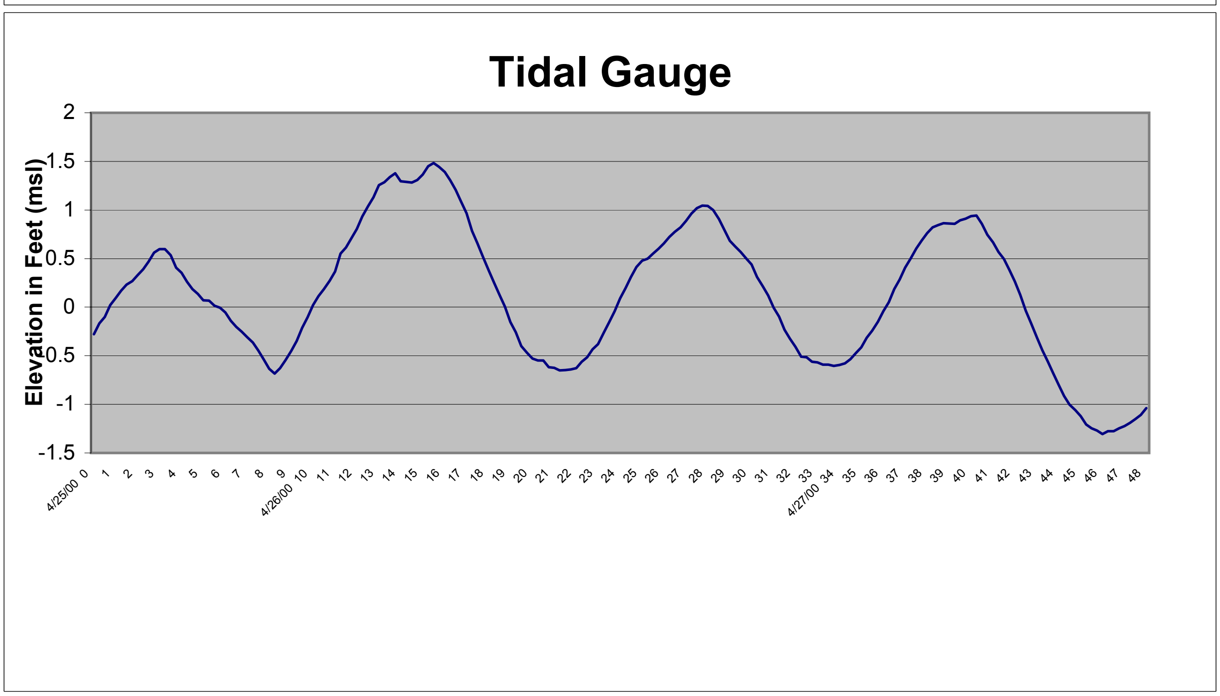
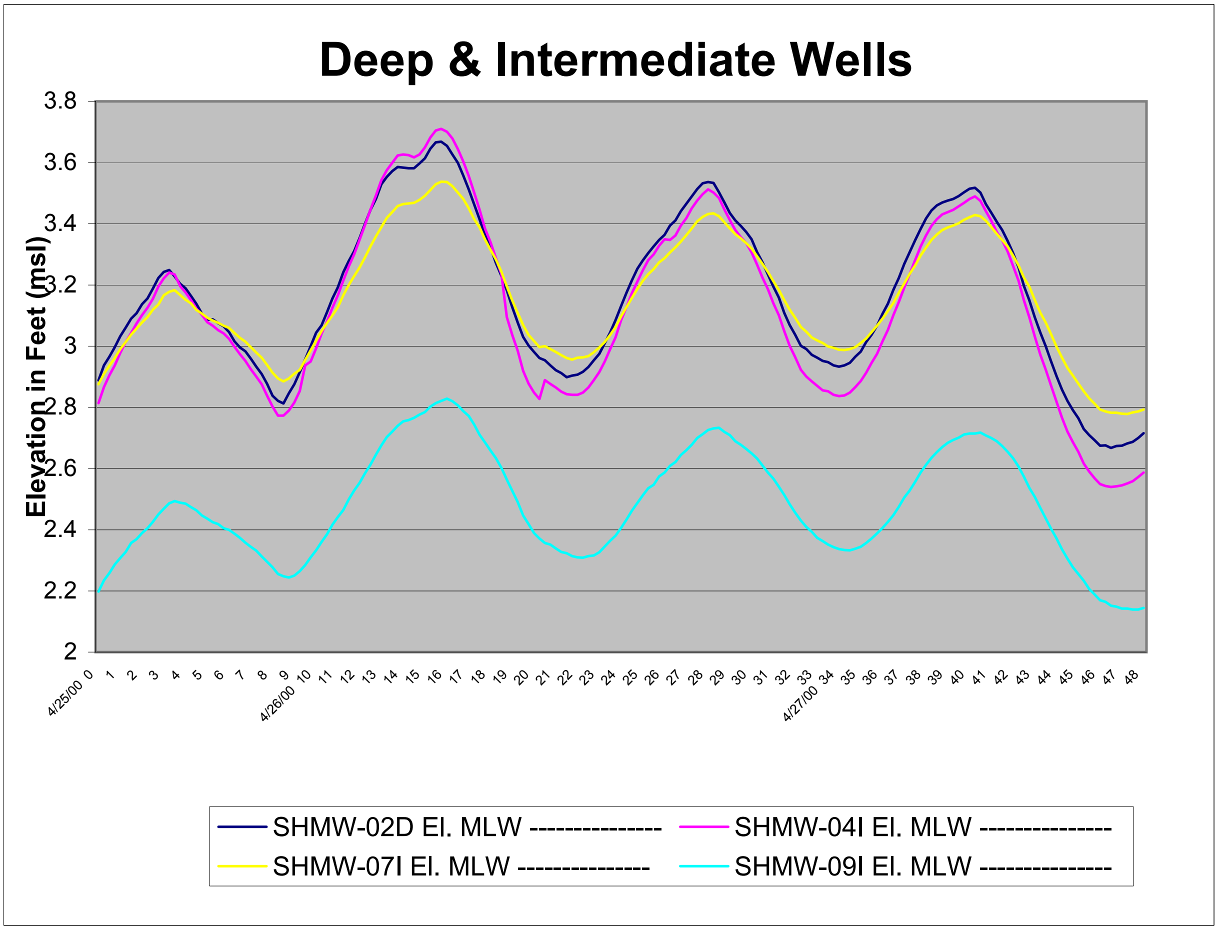
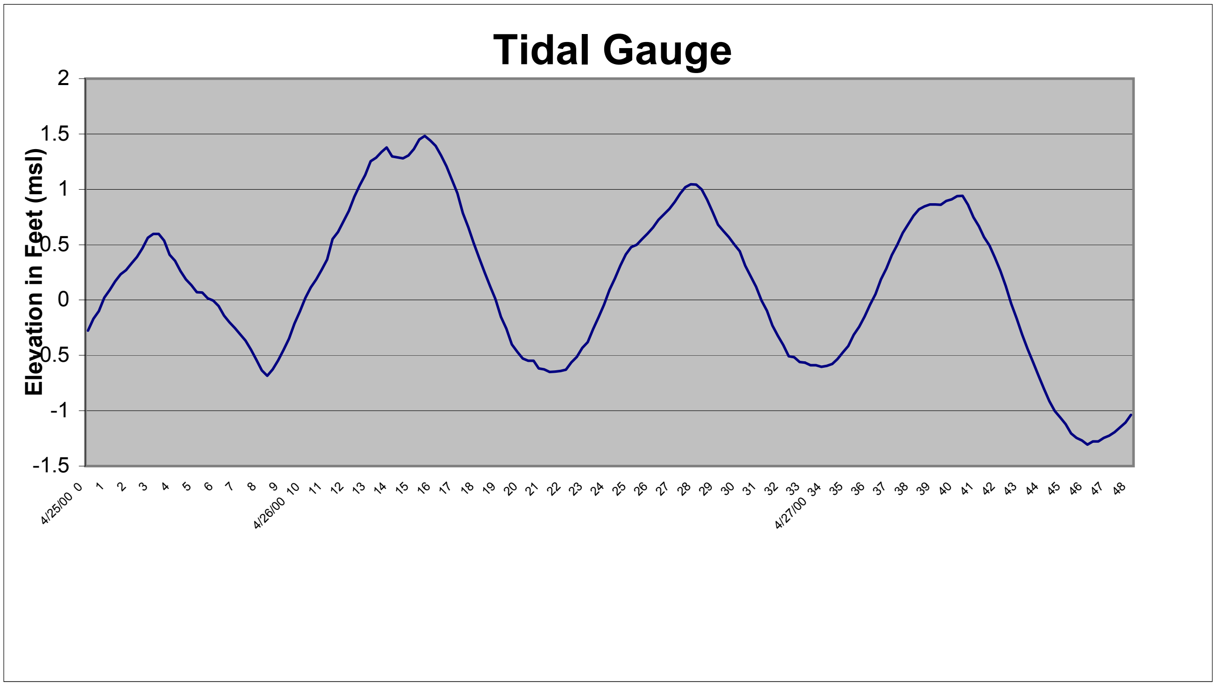


FIGURE 3-4
SAG HARBOR FORMER MGP SITE INVESTIGATION
TIDAL FLUCTUATIONS OBSERVED IN DEEP AND INTERMEDIATE MONITORING WELLS





within the site. As illustrated by **Figures 3-3** and **3-4**, tidal influences appear to be greatest in intermediate and deep monitoring wells screened below the peat/silt/clay unit, including SHMW-04I, SHMW-07I, SHMW-09I and the one deep well, SHMW-02D. Shallow monitoring wells screened at the water table and above the peat/silt/clay unit, including MW-01, SHMW-04S, SHMW-07S and SHMW-09S, exhibited the least tidal influence.

Comparison of the tidal data for shallow wells as presented on **Figure 3-3** indicates the greatest tidal influence in shallow groundwater was observed at wells SHMW-04S and SHMW-09S, with an observed fluctuation of between 0.5 and 0.3 feet, respectively. Of the four shallow wells utilized in the tidal survey, SHMW-04S is located closest to Sag Harbor Cove at approximately 150 feet from the shoreline. In addition, this well is located in an area where the peat/silt/clay unit appears to be absent. Shallow well SHMW-09S is located approximately 310 feet south of Sag Harbor Cove, in an area where the peat/silt/clay unit is present. Both wells exhibit a slight delay or lag of about 1/2 to 1 hour in their cyclic fluctuation when compared to the observed tidal cycle. Shallow monitoring wells MW-01 and SHMW-07S, located further inland, exhibit very little tidal influence and are both screened within the fill deposits and above the peat/silt/clay unit. The tidal data from the four shallow wells indicate the following:

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

The review of the tidal data for all intermediate and deep wells indicate groundwater below the peat/silt/clay unit is clearly influenced by tidal actions. The greatest influence was observed at SHMW-04I, located closest to Sag Harbor Cove. Based on the data presented in **Figure 3-4**, there is little if any lag in the tidal fluctuations observed within intermediate and deep wells when compared to the tidal cycle. This data suggests that groundwater located below the peat/silt/clay unit is in good hydraulic communication with Sag Harbor Cove.

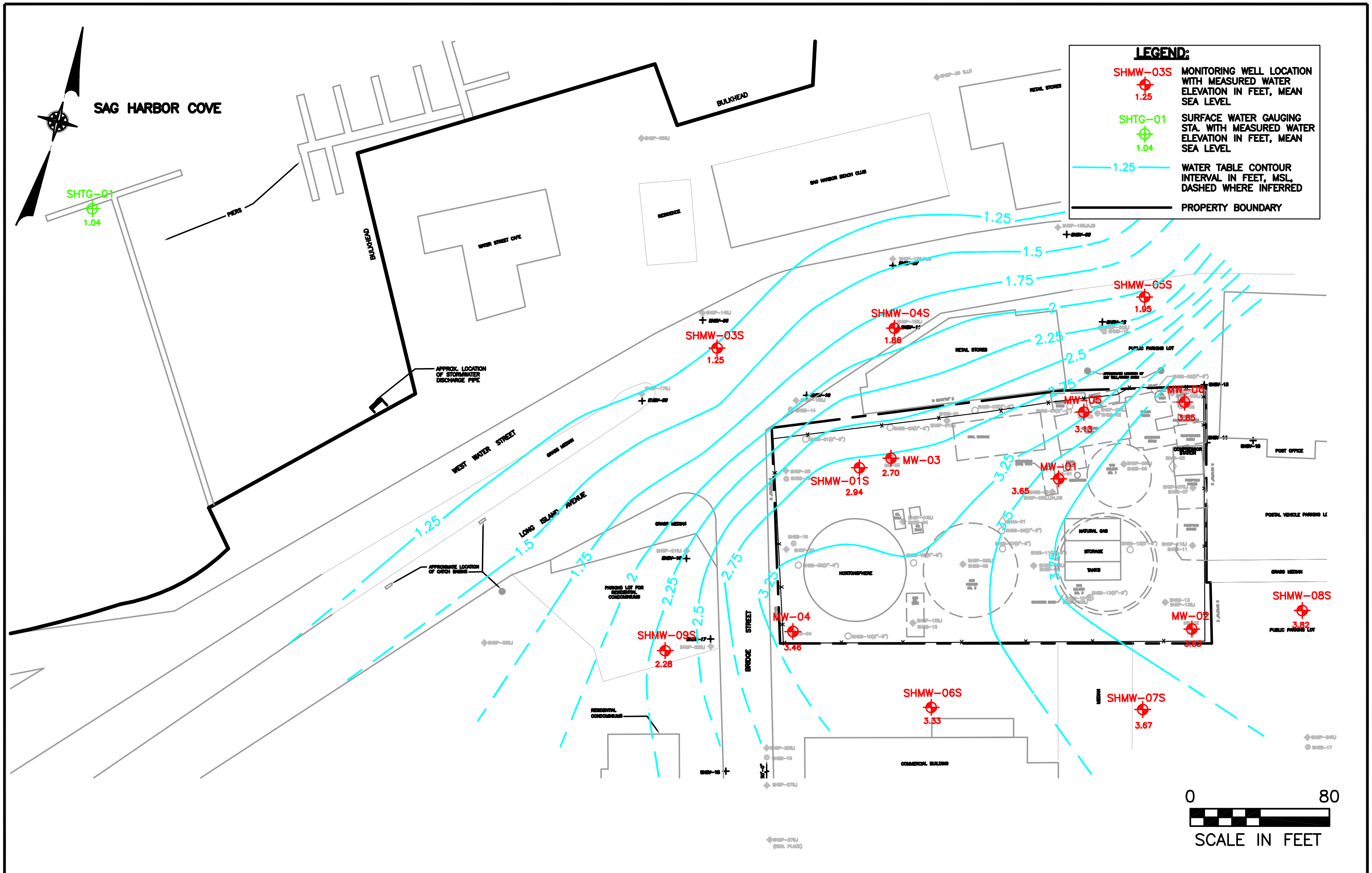
3.3.2 Horizontal Groundwater Flow Patterns

Based on the three rounds of synoptic water level measurements, 6 groundwater contour maps were created with 3 water table maps based on measurements from 15 shallow water table wells, and 3 intermediate zone (potentiometric surface) maps based on data from 9 intermediate wells. In addition, two water table maps were created for mid-tidal periods using water level data obtained from the 48-hour tidal survey. All maps incorporated surface water levels measured at the one gauging station located on Sag Harbor Cove. Data was utilized from high, low and mid-tidal stages, as well as during wet and dry periods in order to assess the influence of each condition on groundwater flow patterns.

In general, the water table maps represent the shallow groundwater zone which is located within and above the peat/silt/clay unit. The intermediate zone potentiometric surface maps represent the intermediate groundwater zone located below the peat/silt/clay unit 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 April 23, 2001, with **Figure 3-5** presenting a water table contour map and **Figure 3-6** presenting a potentiometric surface map for the intermediate groundwater zone. Both maps reflect dry conditions where no significant precipitation has occurred in at least 4 days. As shown on **Figure 3-5**, shallow groundwater appears to flow primarily in a west to northwesterly direction within the site as well as in off-site areas to the west and northwest. However, in the southern portion of the site there appears to be a southwesterly component of flow. **Figure 3-5** also indicates a more northerly flow component of shallow groundwater in the northern half of the site. Water table gradients on-site are relatively flat at 4.18×10^{-3} ft./ft., but increase off-site to the northwest in the direction of Sag Harbor Cove to approximately 1.44×10^{-2} ft/ft. **Figure 3-6** indicates groundwater flow is primarily to the west and northwest within the intermediate zone. However, this figure also suggests a possible easterly component of flow within the intermediate zone in the extreme eastern portion of the site. Overall, hydraulic gradients within the



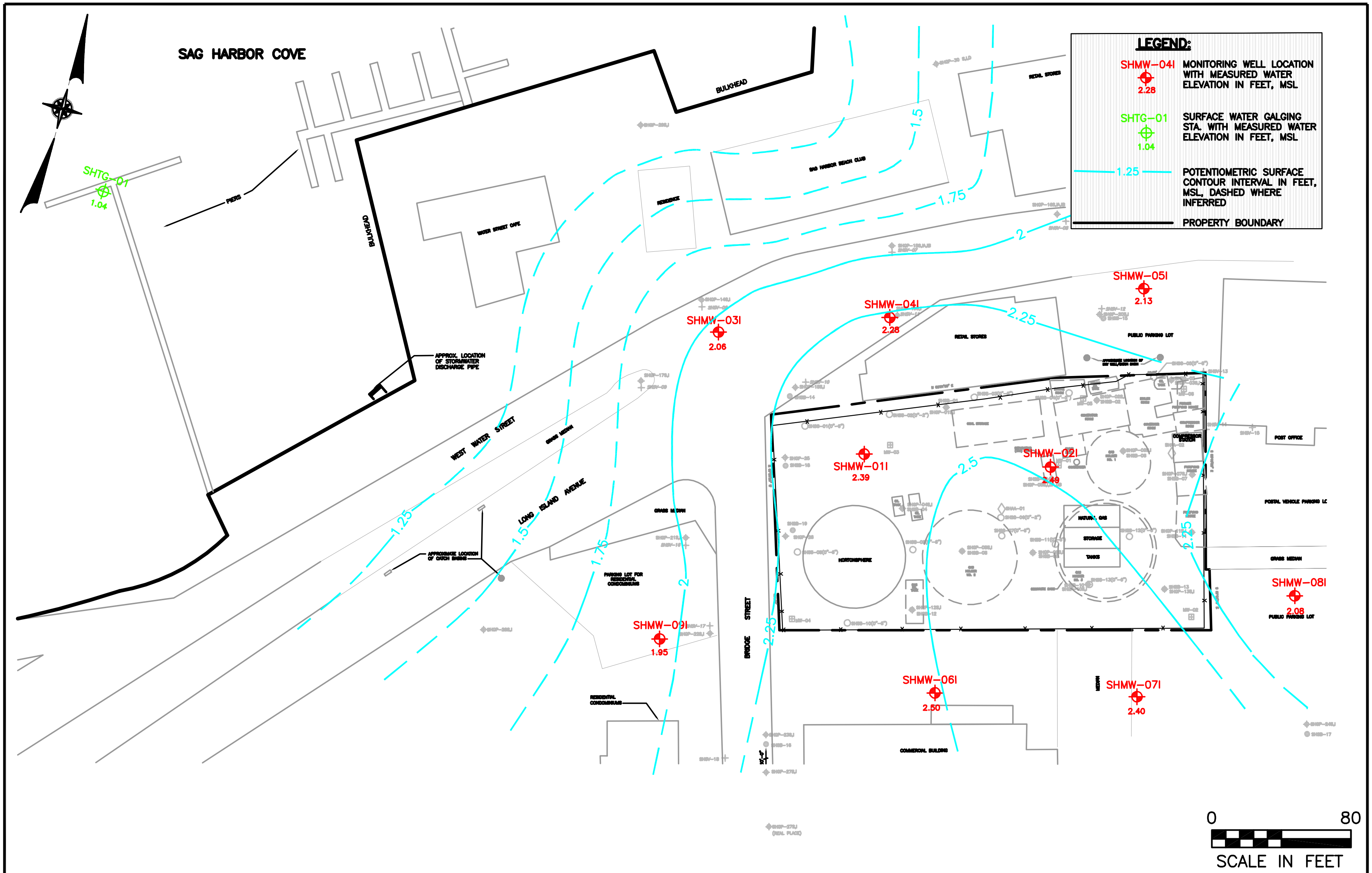
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

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

WATER TABLE CONTOUR MAP

HIGH TIDE – APRIL 23, 2001

FIGURE 3–5



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

POTENTIOMETRIC SURFACE OF INTERMEDIATE GROUNDWATER ZONE

HIGH TIDE – APRIL 23, 2001

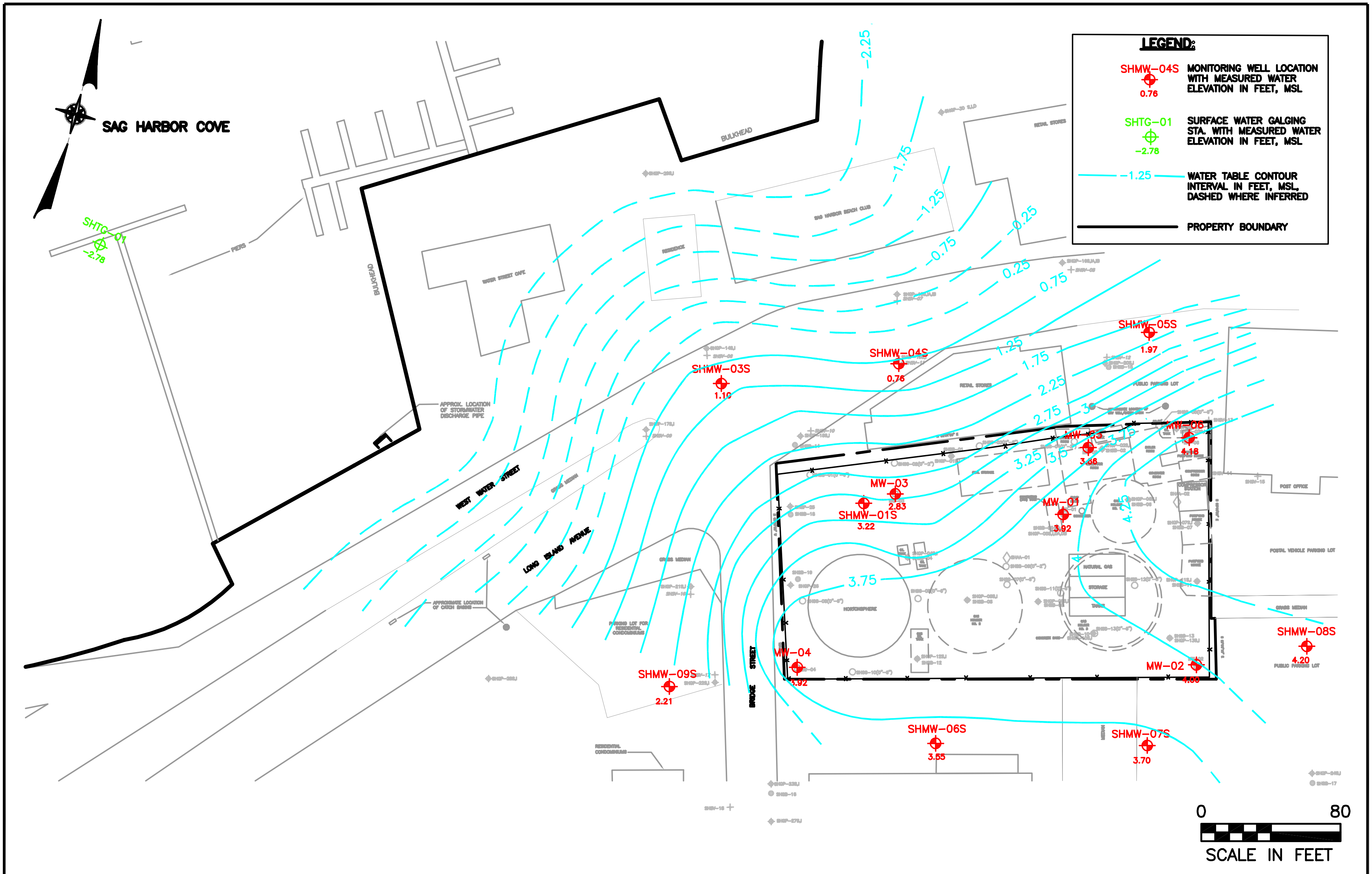
Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 3–6

intermediate zone appear to be relatively flat on-site at 1.48 x 10^{-3} ft./ft., and gradually increase off-site to the northwest and north to approximately 2.87 x 10^{-3} ft./ft. As discussed under **Section 3.3.1**, the intermediate wells appear to have a greater tidal influence and, as a result, the hydraulic gradient within this portion of the aquifer at or near the shoreline tends to flatten out in response to the increase in surface water levels during high tide.

Groundwater Flow at Low Tide

A total of four low tide groundwater contour maps were produced using data collected on December 18, 2000 **(Figures 3-7 and 3-8)** and on April 23, 2001 **(Figures 3-9 and 3-10).** Data collected on December 18, 2000 reflect a relatively wet period were a total of 0.6 inches of rain fell in 2 days prior to collection of measurements. The April 23, 2001 maps reflect dry conditions. In general, both low tide water table maps indicate similar flow directions with the majority of on-site and off-site groundwater movement being to the northwest, towards Sag Harbor Cove. However, both maps suggest a westerly and southwesterly component of flow in the eastern and southern portions of the site. This westerly flow component appears to continue across Bridge Street. **Figure 3-7** consistently shows a higher water table elevation than compared to **Figure 3-9**, which would be expected given the amount of precipitation on December 18, 2000. Additionally, **Figure 3-7** indicates mounding within the southwestern corner of the site where storm water regularly ponds. **Figure 3-7** also indicates a relatively strong hydraulic gradient within the northeast corner of the site, which may be associated with a localized mounding of the water table in this area. The mounding in the northeastern portion of the site is likely the result of storm water discharge to off-site dry wells located directly to the north and northeast of the site. As shown in **Figure 3-9**, this relatively strong gradient is not evident within the northeastern corner of the site during dry conditions. Overall, on-site hydraulic gradients are greater for both low tide maps when compared to the high tide maps, with **Figure 3-7** having a water table gradient of 5.48 x 10^{-3} ft./ft. and **Figure 3-9** exhibiting a gradient of 6.0 x 10^{-3} ft./ft. However, off-site to the northwest, where the peat/silt/clay unit is absent, both low tide water table maps indicate hydraulic gradients increase in the direction of Sag Harbor Cove.



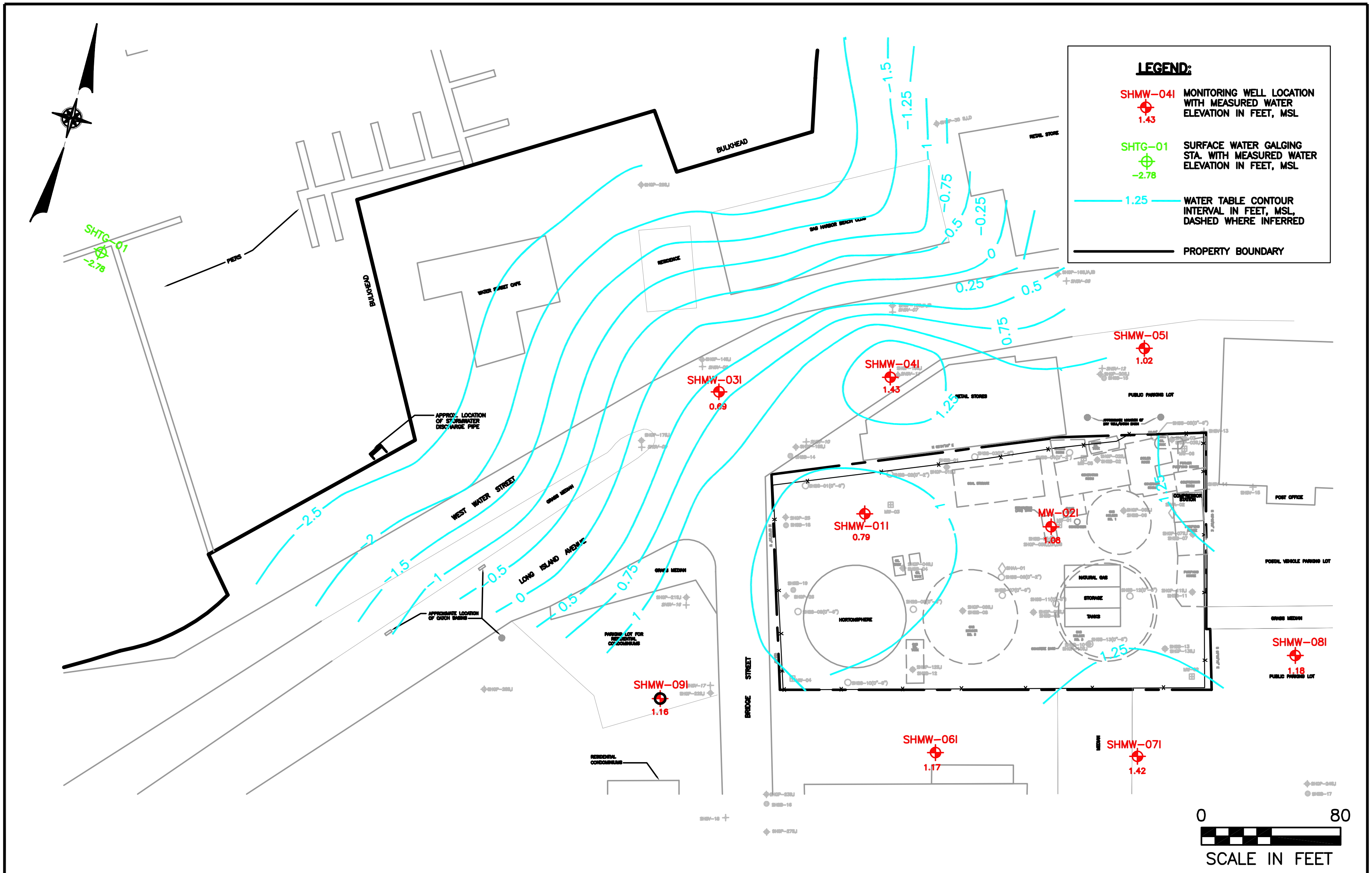
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP

LOW TIDE – DECEMBER 18, 2000

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

FIGURE 3-7



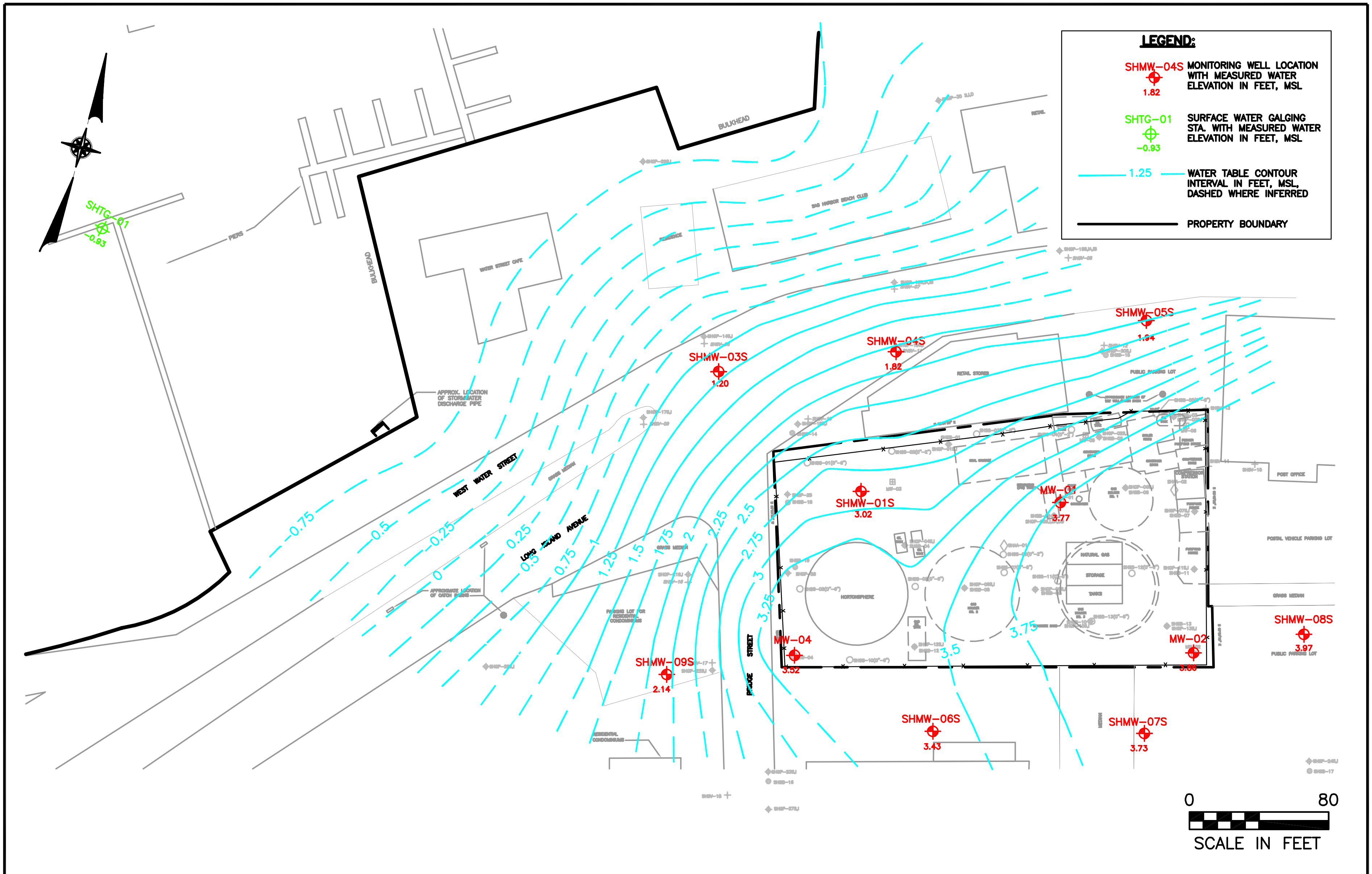
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

POTENTIOMETRIC SURFACE OF INTERMEDIATE GROUNDWATER ZONE

LOW TIDE – DECEMBER 18, 2000

FIGURE 3–8

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



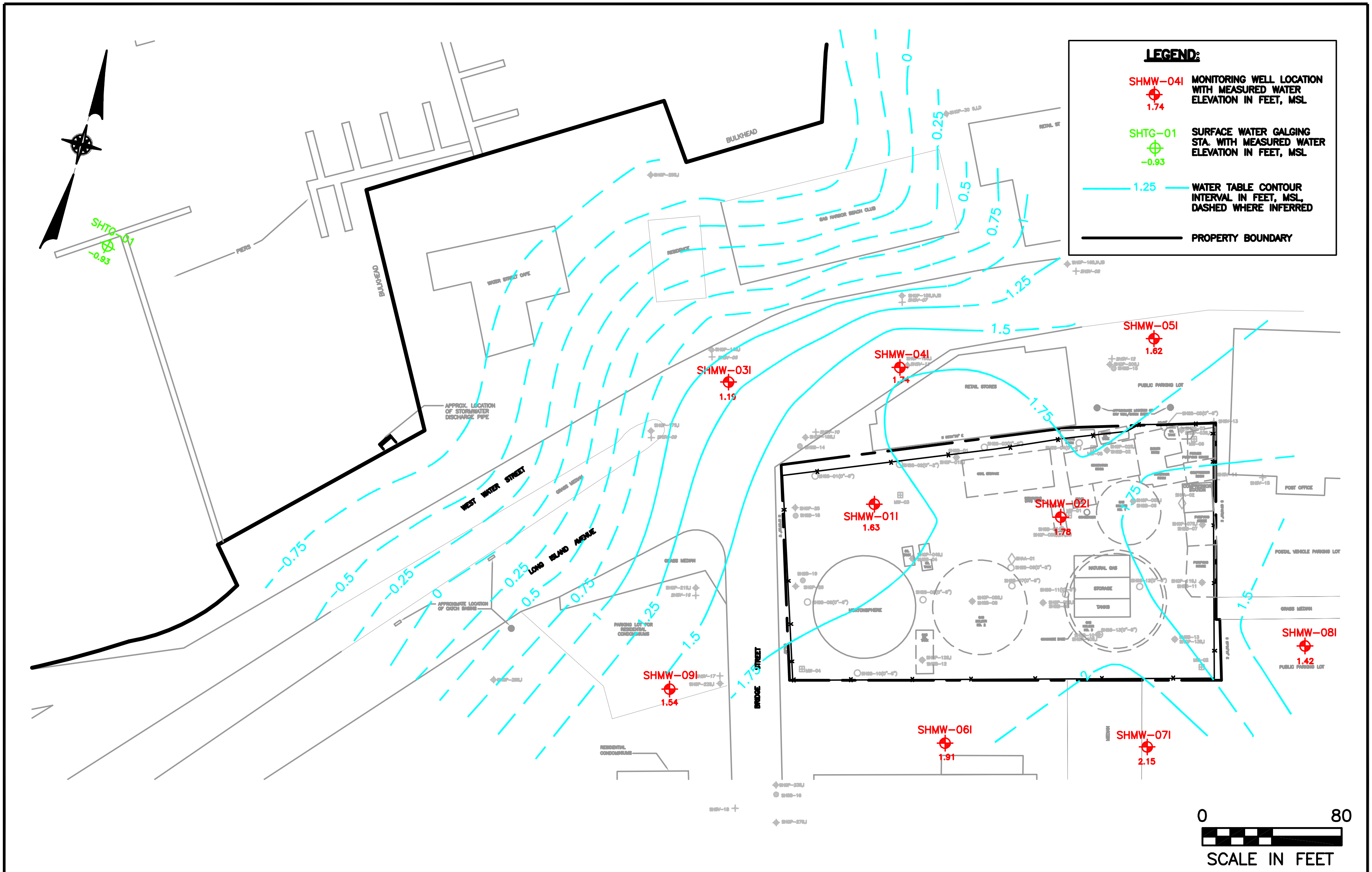
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP

LOW TIDE – APRIL 23, 2001

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

FIGURE 3-9



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

POTENTIOMETRIC SURFACE OF INTERMEDIATE GROUNDWATER ZONE

LOW TIDE – APRIL 23, 2001

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

FIGURE 3-10

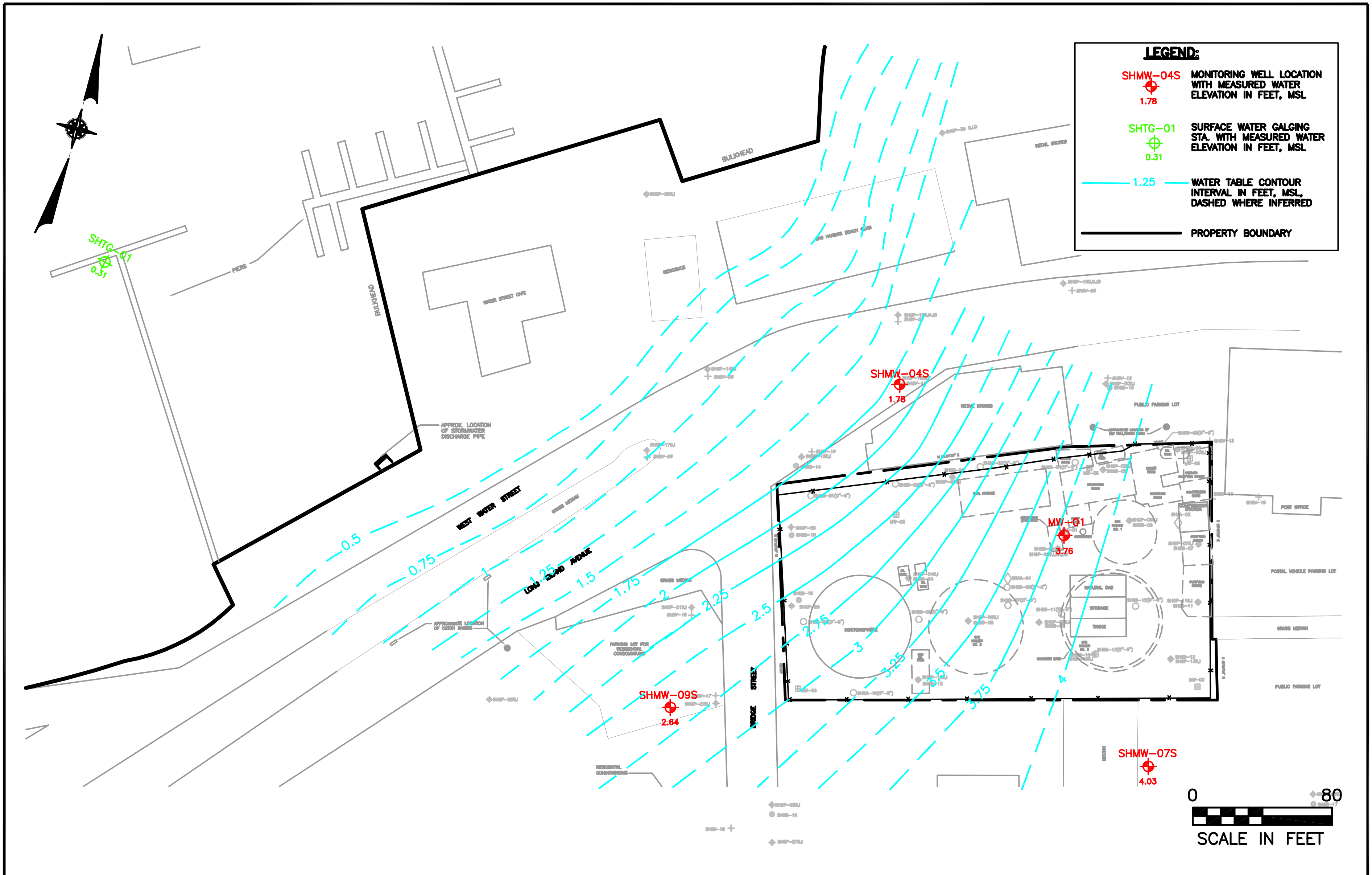
As with high tide conditions, hydraulic gradients within the intermediate groundwater zone are relatively flat on-site, but increase to the northwest as groundwater moves towards Sag Harbor Cove. **Figures 3-8** and **3-10** clearly indicate a more consistent northwesterly flow than the shallow water table maps. However, as with the intermediate zone high tide map, the two low tide maps suggest an easterly flow component in the extreme eastern portion of the site. Similar to the water table gradients, off-site hydraulic gradients increase rapidly toward the northwest with groundwater flow moving toward Sag Harbor Cove. The estimated hydraulic gradient within the intermediate groundwater zone ranges from 4.5×10^{-3} ft./ft. for **Figure 3-8** to 4.3×10^{-3} ft./ft. for **Figure 3-10**. The April 23, 2001 low tide map (**Figure 3-10**) indicates, on average, higher water levels when compared to the December 18, 2000 map (**Figure 3-8**), indicating short-term precipitation events have little influence on the intermediate groundwater zone.

Groundwater Flow at Mid-Tide

Figures 3-11 and **3-12** are water table contour maps for mid-tide periods, with **Figure 3-11** being based on data during an ascending or "flooding" tide and **Figure 3-12** based on a descending or "ebbing" tide. Both maps were created using water level data obtained during completion of the tidal survey described under **Section 3.4.1**. Note that intermediate groundwater zone maps were not produced given only three intermediate wells were utilized in the tidal survey. Both figures indicate groundwater flow is predominantly in a northwesterly direction toward Sag Harbor Cove during both mid-tide periods, with a fairly uniform hydraulic gradient over the area in which water level data is available. However, due to the limited number of monitoring wells used in the tidal survey, the degree of detail available with respect to groundwater flow patterns is limited for the mid-tidal flow maps when compared to the maps generated using synoptic water levels from all shallow wells.

3.3.3 Estimated Groundwater Flow Velocities

Due to the highly heterogeneous nature of the fill deposits, as well as the peat/silt/clay unit, an accurate estimate of groundwater flow velocity for the shallow groundwater zone cannot



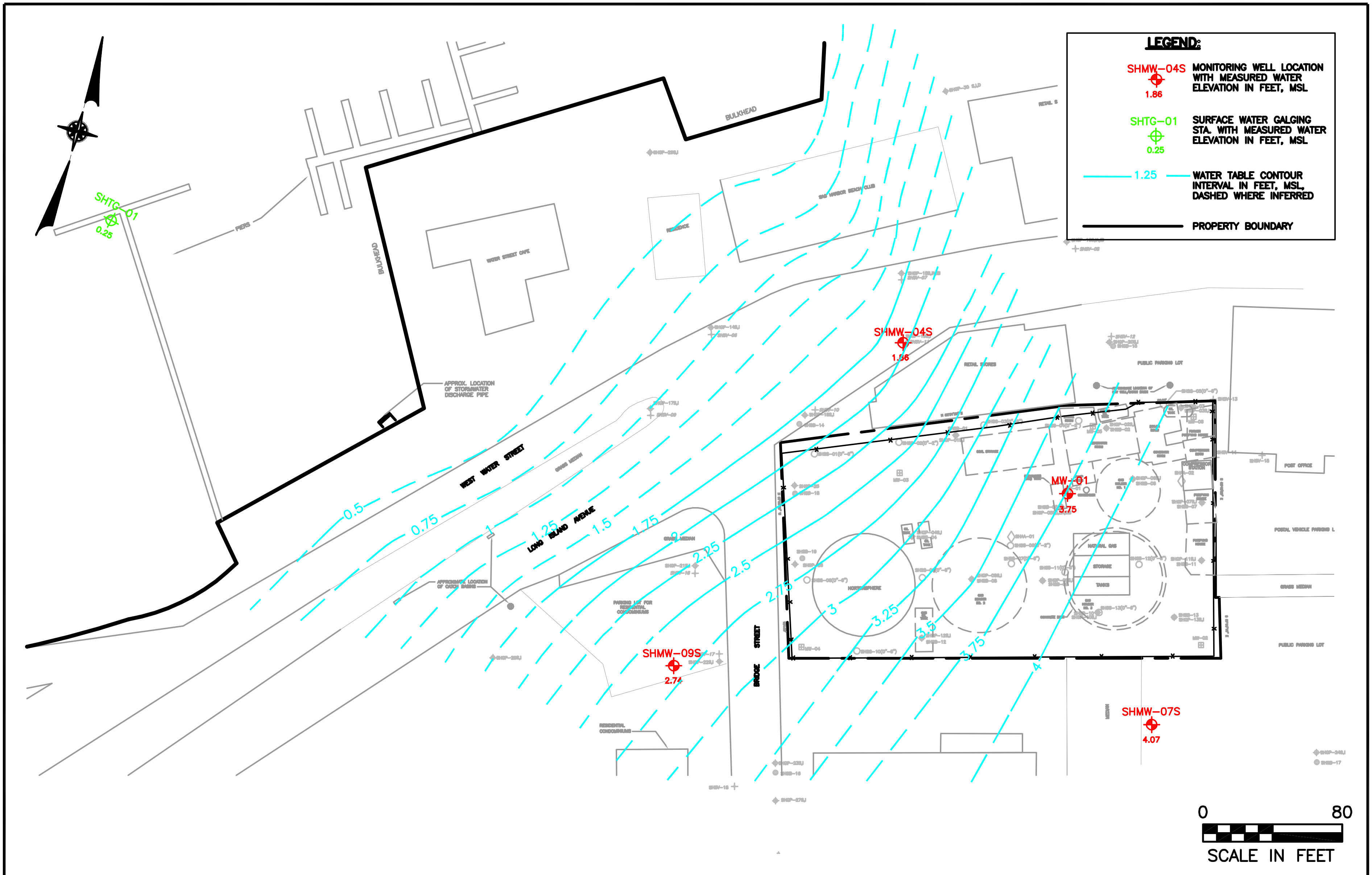
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP

MID–TIDE (FLOODING) – APRIL 26, 2000

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

FIGURE 3–11



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

WATER TABLE CONTOUR MAP

MID–TIDE (EBBING) – APRIL 26, 2000

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

FIGURE 3–12

be obtained for the site and surrounding area based on currently available data. However, an estimate of groundwater velocity for the intermediate groundwater zone (i.e., below the peat/ silt/clay unit to a depth of approximately 45 feet bgs) can be calculated with some reasonable level of accuracy given its relatively homogeneous and porous nature that is typical of glacial sands found through out the south fork of Long Island.

Using calculated hydraulic gradients based on the potentiometric contour maps for the intermediate groundwater zone, the average hydraulic conductivity for the Upper Glacial aquifer obtained from the USGS reports referenced in **Section 1.5.8**, and a modified form of Darcy's Law for groundwater flow velocity, an estimated value for groundwater velocity or vector within the intermediate groundwater zone can be calculated for the site and surrounding area where:

$$Va = \frac{KI}{N}$$

where:

Va = Groundwater velocity or Darcian velocity (ft./day)

I = Hydraulic gradient (feet per foot)

K = Hydraulic conductivity (ft./day)

N = Porosity of aquifer sediments (percent)

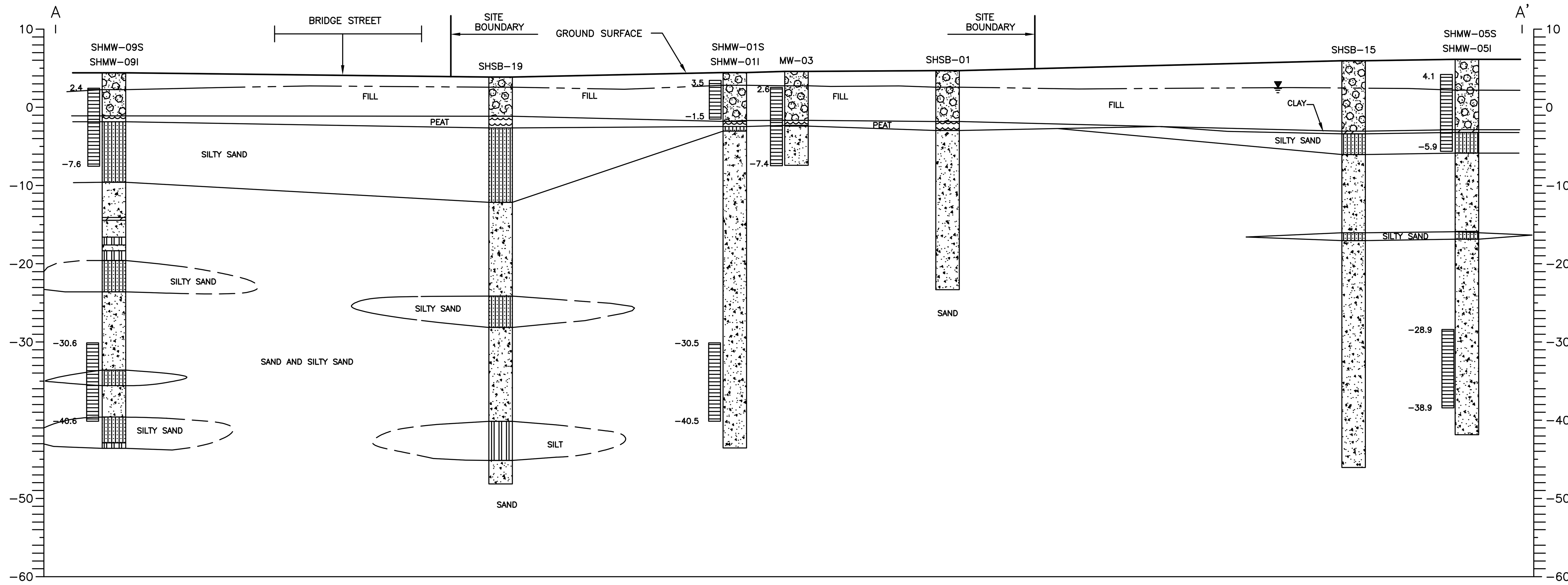
Using the calculated hydraulic gradients provided in **Section 3.3.2**, hydraulic gradients for the intermediate groundwater zone for the majority of the site as well as areas to the northwest range from only 1.48×10^{-3} ft./ft. during high tide to a maximum of 4.5×10^{-3} ft./ft. at low tide. Using a range of porosities of 0.20 to 0.35 for sand and gravel mixtures (Fetter, 1980), and an average horizontal hydraulic conductivity of 255 ft./day for the Upper Glacial aquifer, horizontal groundwater flow velocities range from 1.08 ft./day to 1.89 ft./day during periods of high tide, and from 3.28 ft./day to 5.74 ft./day during periods of low tide.

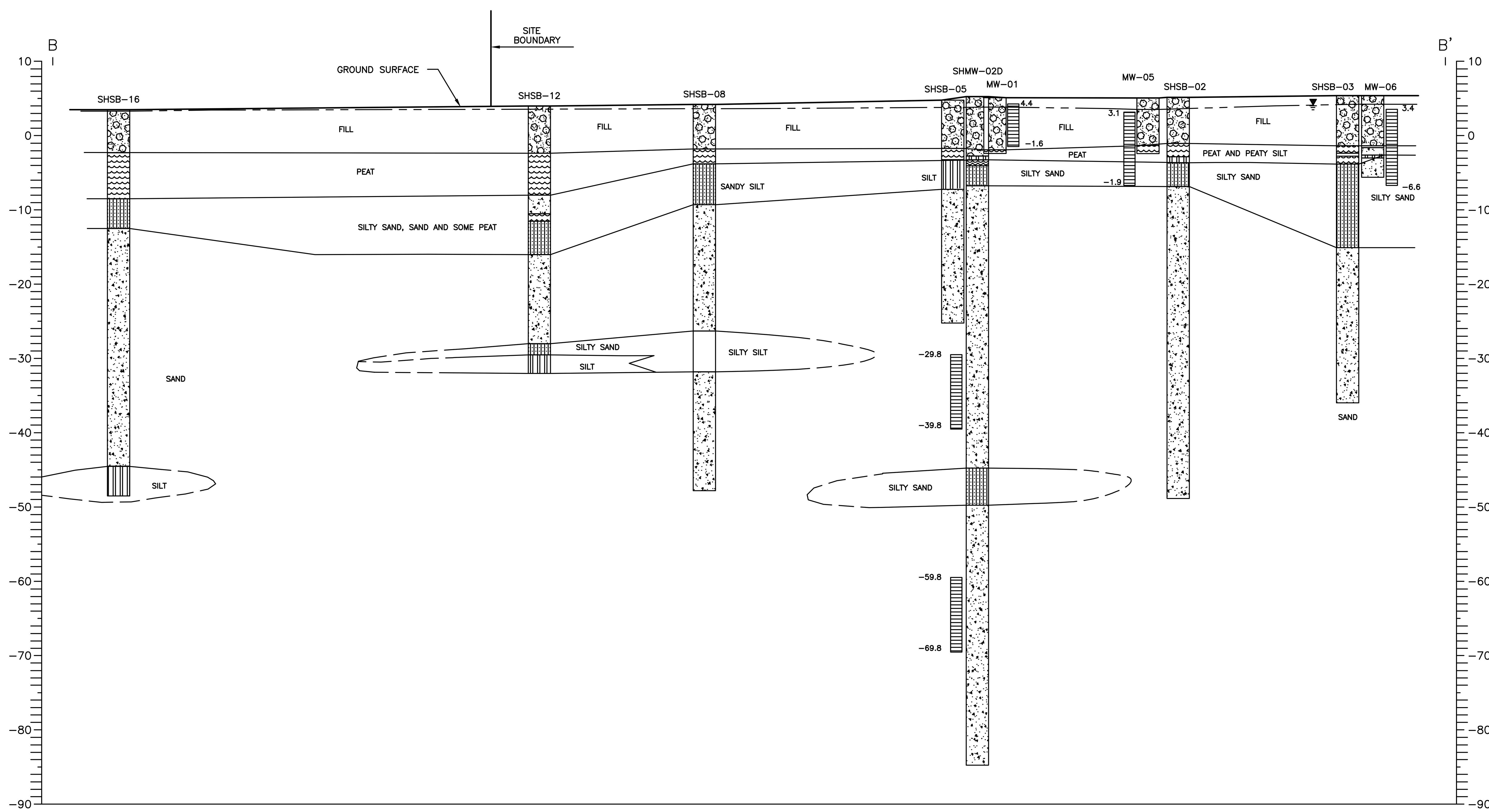
3.3.4 Vertical Groundwater Flow

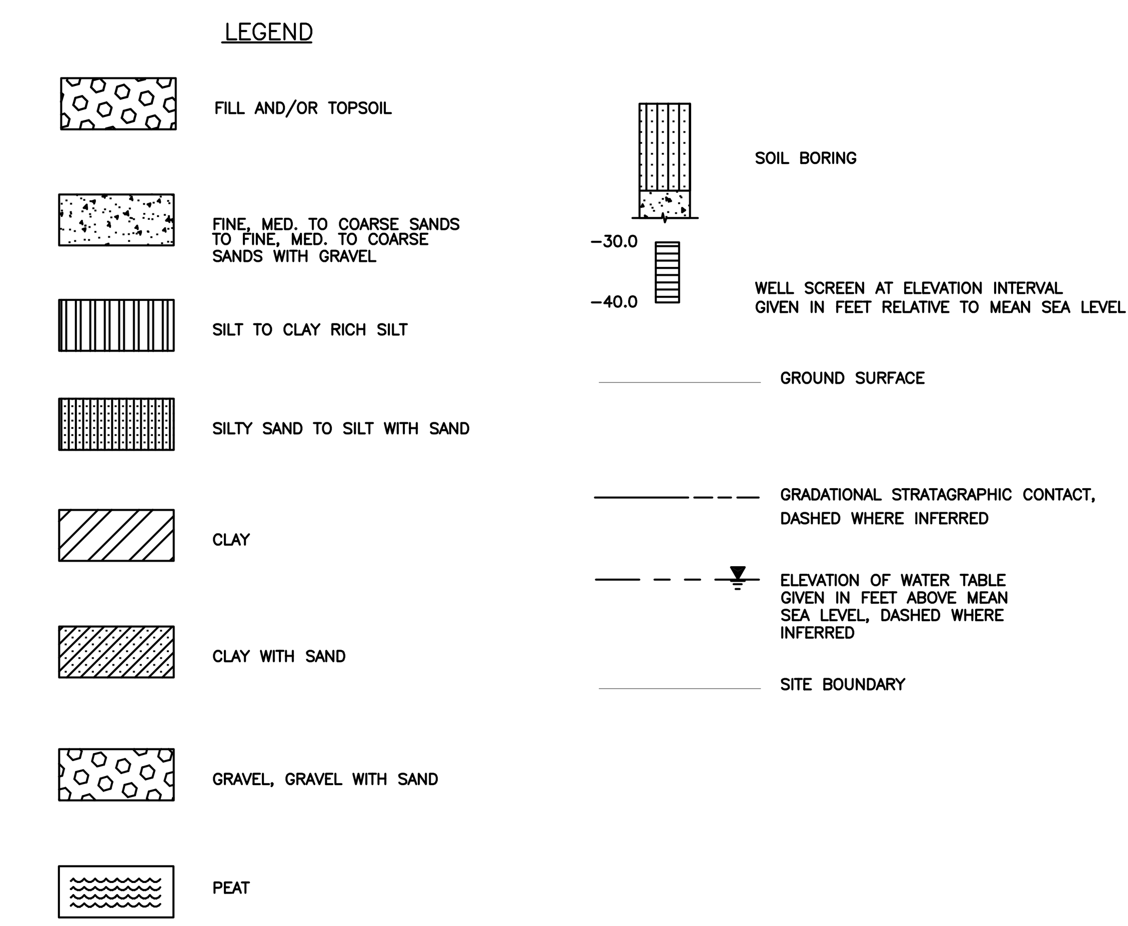
Water elevations measured in on-site and off-site monitoring wells (summarized on **Table 2-6)** were evaluated to determine vertical hydraulic gradients between shallow, intermediate and deep groundwater zones. As with horizontal gradients, tidal fluctuations as well as precipitation events appear to influence vertical hydraulic gradients. Additionally, the presence and/or absence of the peat/silt/clay unit appears to be another factor influencing vertical gradients. Review of water elevations measured at on-site well clusters SHMW-01 and SHMW-02 indicate a downward vertical gradient between shallow and intermediate wells during high tide and low tide periods. The greatest downward gradients are observed during low tide periods after periods of heavy precipitation such as during the December 18, 2000, water level round. This would be expected given 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. Comparison of water levels measured at intermediate well SHMW-02I and deep well SHMW-02D indicate an upward vertical gradient between the intermediate and deep groundwater zones. An upward vertical gradient and groundwater discharging conditions would be expected within the site area due to its close proximity to surface waters such as Sag Harbor Cove and Sag Harbor Bay.

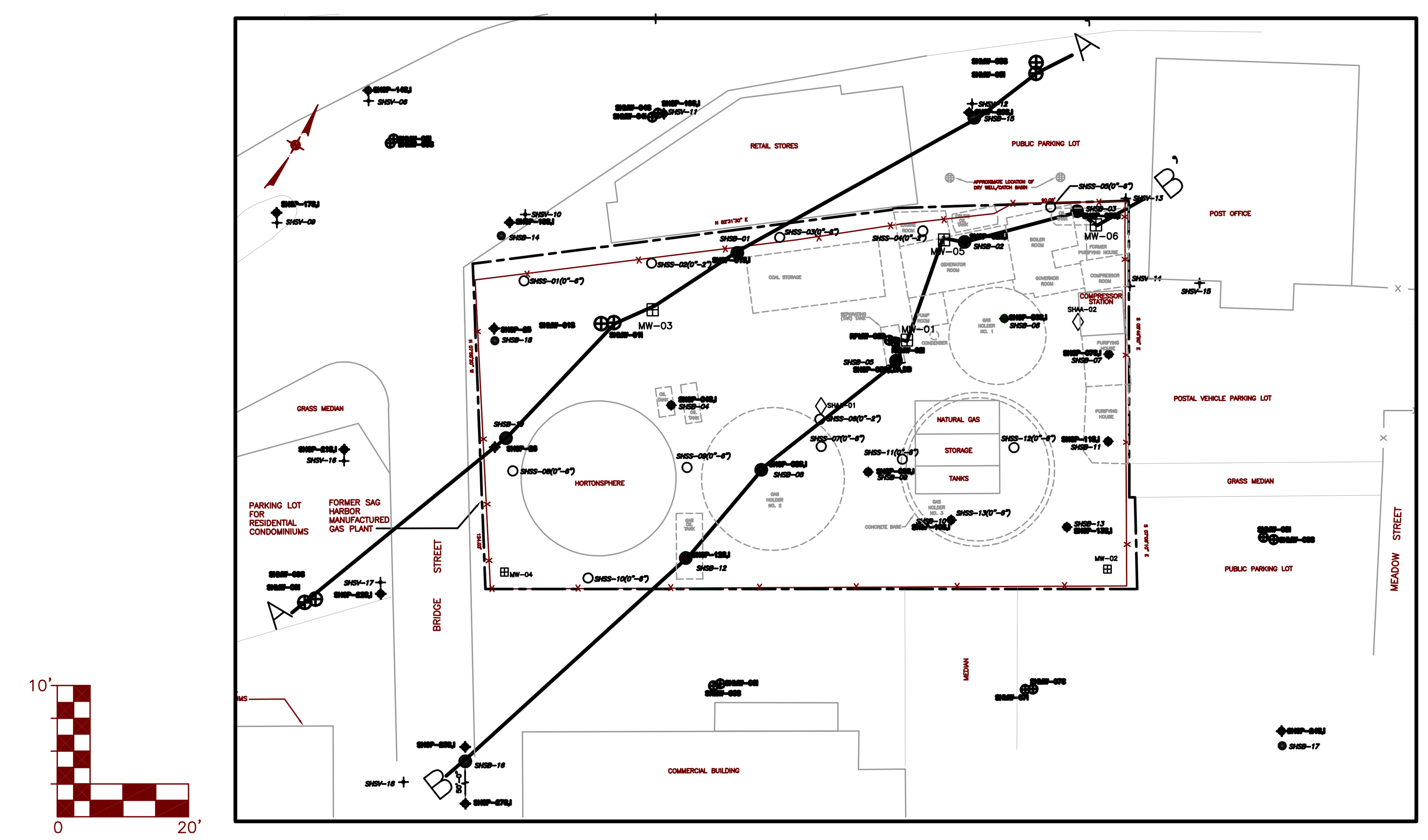
Similar to on-site well clusters, off-site well clusters to the south (SHMW-06 and SHMW-07) and west (SHMW-09) indicate downward vertical gradients between the shallow and intermediate groundwater zones. As shown in **Figures 3-1** and **3-2**, the peat/silt/clay unit is present within these areas, and therefore, is 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/silt/clay unit retards vertical movement of groundwater resulting in an increased gradient between shallow and intermediate groundwater.

Well clusters off-site to the north and northwest (SHMW-03 and SHMW-04) generally indicate an upward (discharging) hydraulic gradient between the shallow and intermediate zones, but primarily during periods of high tide. 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/silt/clay unit is absent within this area.









KEY MAP
SHOWING CROSS-SECTION LINES

SCALE: 1"=50'

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: R.W.	DRAWN BY: L.V.G.
DESIGNED BY: V.V.	CHECKED BY: T.P.F.

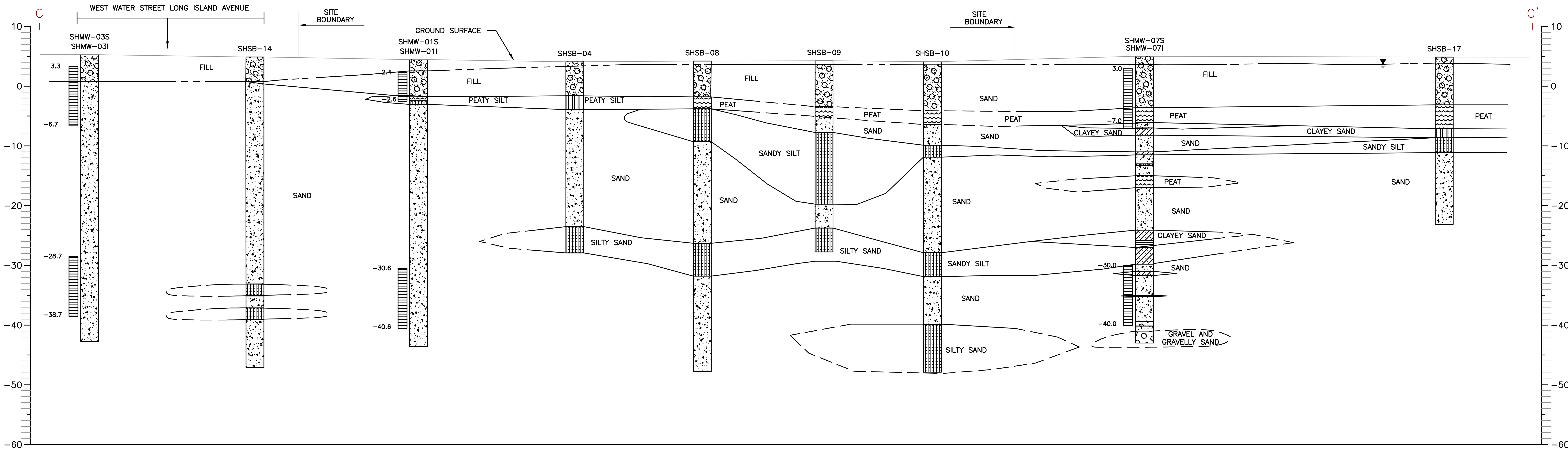
DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

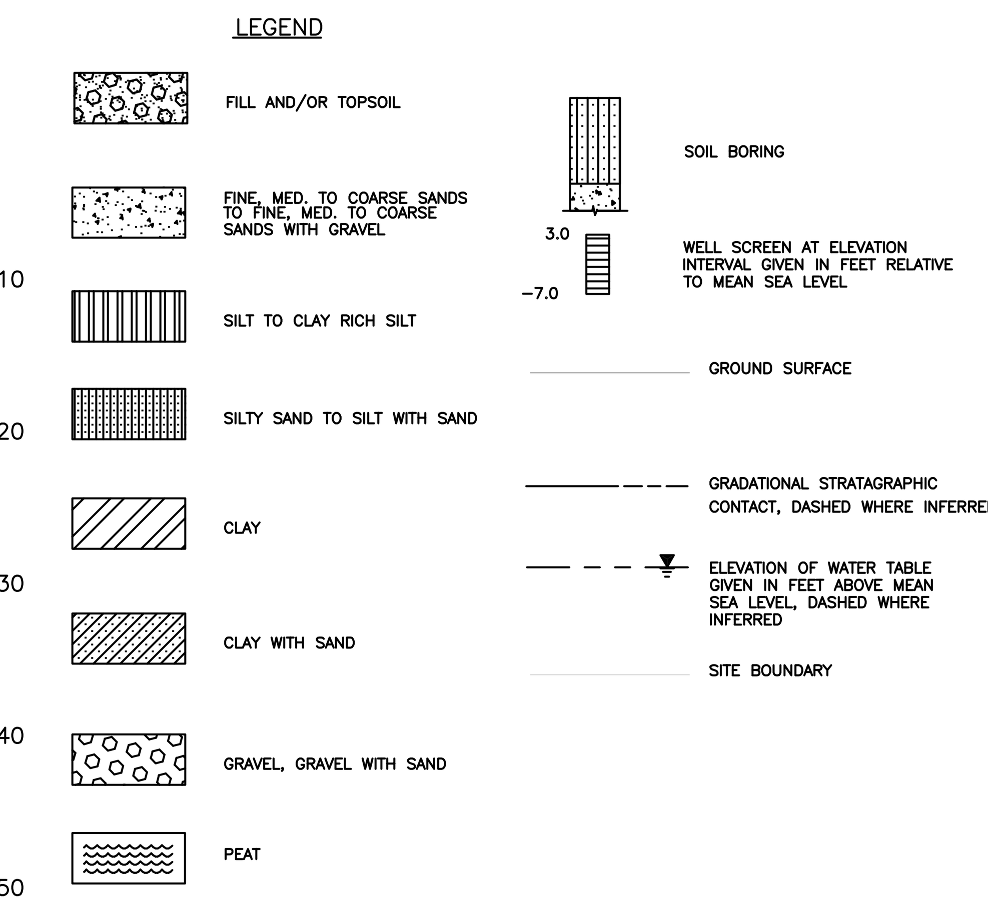
SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
SAG HARBOR, NEW YORK

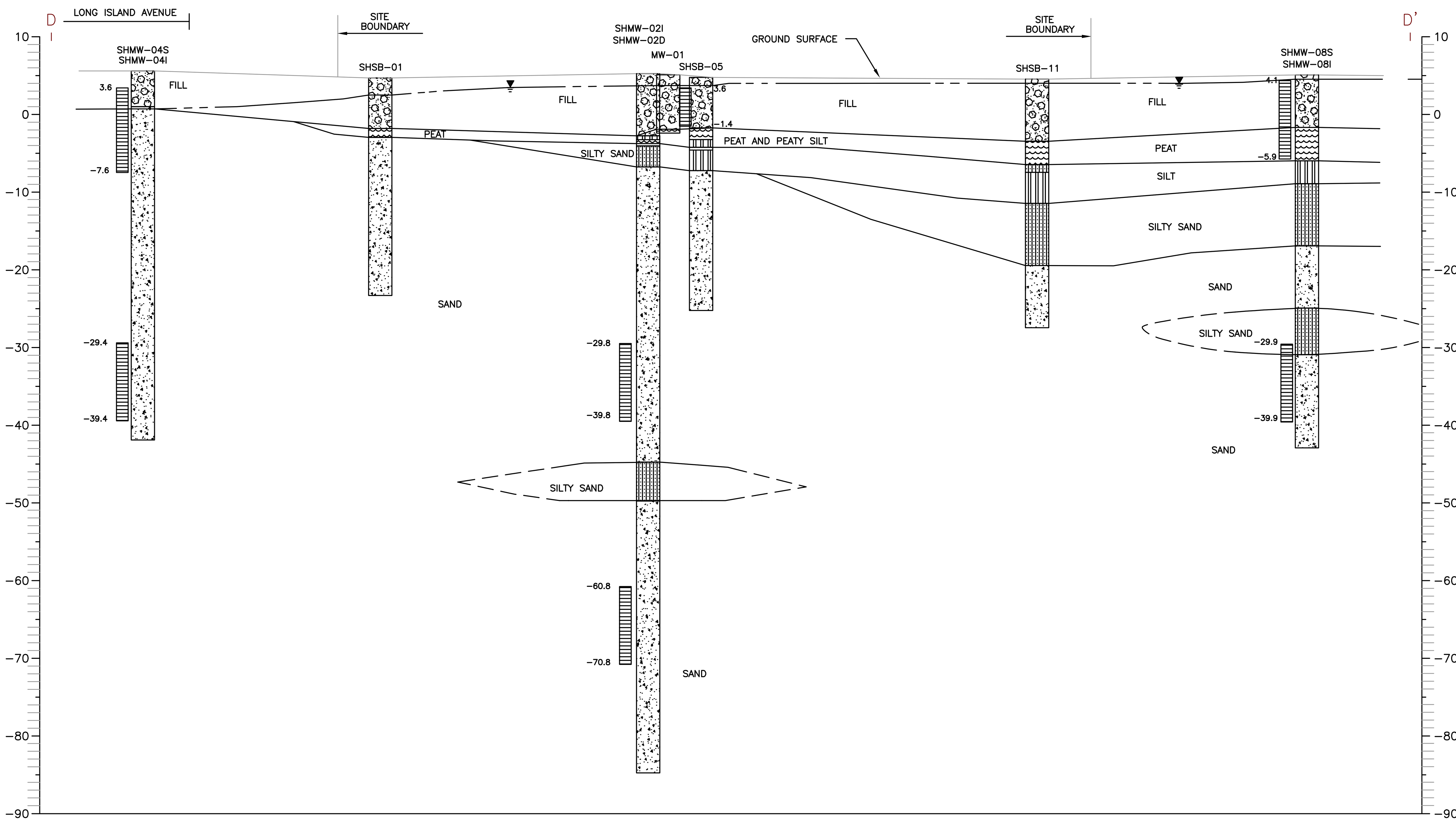
GEOLOGIC CROSS-SECTIONS
A-A', B-B'

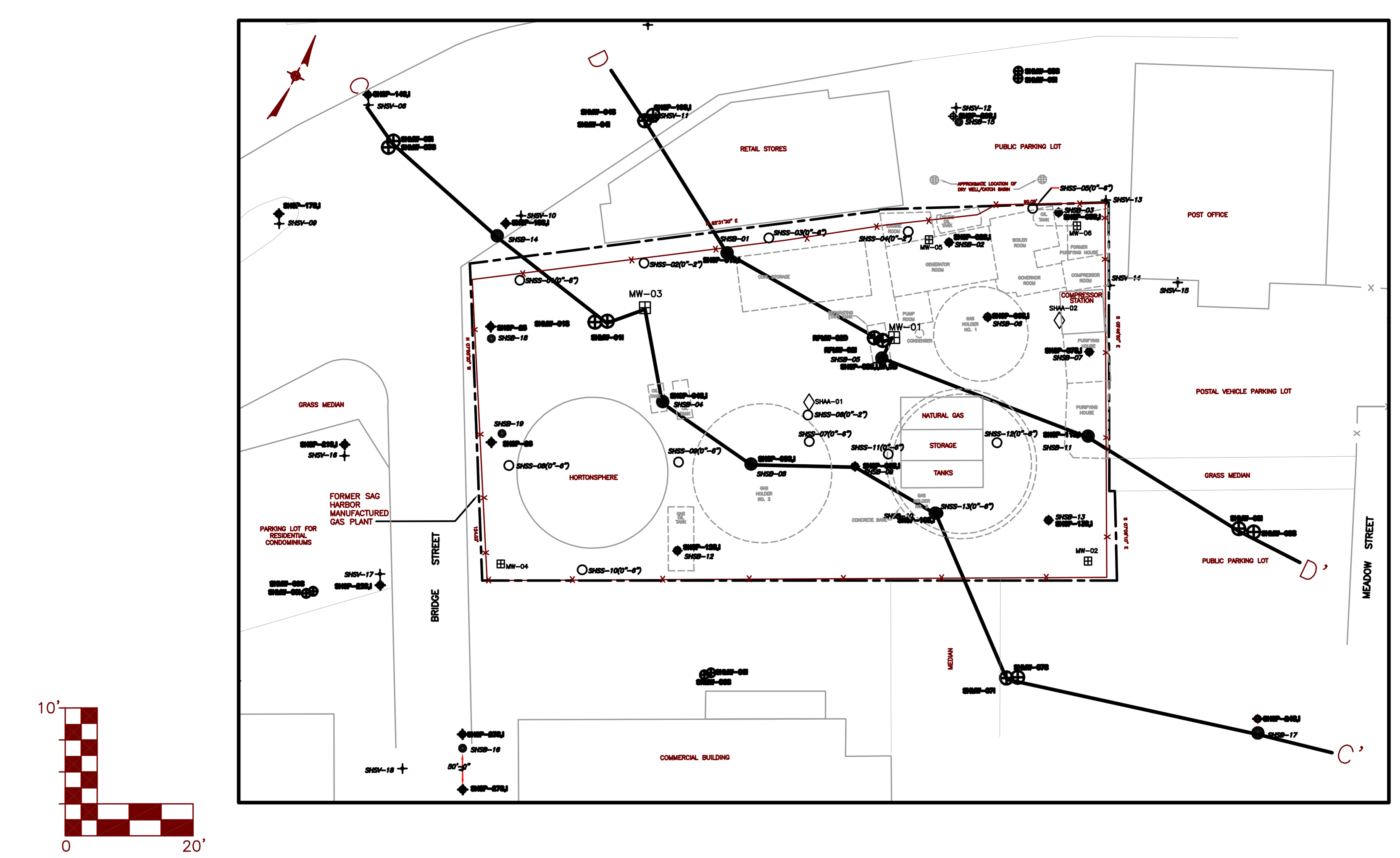
PROJECT NO.: 1620-D
DATE: DECEMBER 2000
SCALE: AS SHOWN
DRAWING NO.: 3A

THU, SEP 27, 2001 03:38 P AWK F:\1620\SAG HARBOR\FINAL\SECTION-AB.DWG









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

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:	DRAWN BY:
R.W.	L.V.G.
DESIGNED BY:	CHECKED BY:
V.V.	T.P.F.

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

SAG HARBOR
FORMER MANUFACTURED GAS PLANT SITE
SAG HARBOR, NEW YORK

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

PROJECT NO. 1620-D
DATE: DECEMBER 2000
SCALE: AS SHOWN
DRAWING NO. 3B

THU, SEP 27, 2001 03:39 P AWK F:\1620\SAG HARBOR\FINAL\SECTION-CD.DWG

4.0 NATURE AND EXTENT OF CHEMICAL CONSTITUENTS

4.1 Introduction

This section provides a discussion of the investigation results. The analytical data associated with this field investigation program along with relevant historical data are used to identify the location and types of chemicals in the environment, likely source area(s), and the extent to which any chemical constituents may have migrated from the site.

The discussion of the investigation results is presented by the investigation activities that were conducted during the program. Environmental samples collected from off-site locations help define upgradient and downgradient conditions relative to the site and have been grouped into the Off-site Field Investigation Program discussion. **Drawing 2** provides the surveyed locations of all completed on-site and off-site sample points along with the approximate locations of former MGP structures located within the site. **Appendix E** presents data tables summarizing the analytical results of all samples collected during this site investigation. The sum total of all positively detected BTEX compounds, as well as the sum total of all positively detected PAH compounds and carcinogenic PAHs (CaPAHs) are also provided in the data summary tables.

The assessment of the presence of chemicals in the environment was performed using sample analytical results and physical descriptions of recovered sample media. In the case of metals within soil, values were compared to typical metals concentrations observed within eastern United States soil (see **Table 4-1**). When relevant, data generated under this investigation are compared to data generated during prior investigations in order to assess trends in reduction or migration of chemical constituents.

TABLE 4-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
TYPICAL BACKGROUND CONCENTRATIONS OF METALS IN SOIL

METALS	Background Levels - Eastern USA (mg/kg)
Aluminum	0.7 - > 10
Antimony	-
Arsenic	<0.1 - 73
Barium	10 - 1500
Beryllium	< 1 - 7
Cadmium	-
Calcium	0.01 - 28
Chromium	1 - 1,000
Cobalt	< 0.3 - 70
Copper	< 1 -700
Iron	0.01 - > 10
Lead	< 10 - 300
Magnesium	0.005 - 5
Manganese	< 2 - 7,000
Mercury	0.01 - 3.4
Nickel	< 5 - 700
Potassium	0.005 - 3.7
Selenium	< 0.1 - 3.9
Silver	-
Sodium	< 0.05 - 5
Thallium	-
Vanadium	> 7 - 300
Zinc	<5 - 2,900

NOTES:

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

-: Not established.

In addition, the analytical results of the investigation were compared to NYSDEC regulatory standards, criteria and guidance values (SCGs) for *screening* purposes. The analytical data tables provided in **Appendix E** 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. Concentrations of chemical constituents that exceed the SCGs are bracketed on the data tables. Also, tables are presented in **Appendix F** that summarize the specific SCG, the range of detected concentrations, the frequency of SCG exceedances and the location of the highest concentration detected for each of the chemical constituents typically associated with former MGP sites.

BTEX compounds were the principal volatile organic compounds (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
- Benzo(b)fluoranthene
- Fluorene
- Acenaphthene
- Benzo(g,h,i)perylene
- Indeno(1,2,3-cd)pyrene
- Acenaphthylene
- Benzo(k)fluoranthene
- Naphthalene
- Anthracene
- Chrysene
- Phenanthrene
- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Pyrene
- Benzo(a)pyrene
- Fluoranthene
- Dibenzofuran

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

- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Benzo(a)pyrene
- Benzo(k)fluoranthene

- Indeno(1,2,3-cd)pyrene
- Benzo(b)fluoranthene
- Chrysene

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

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

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

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

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

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

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

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

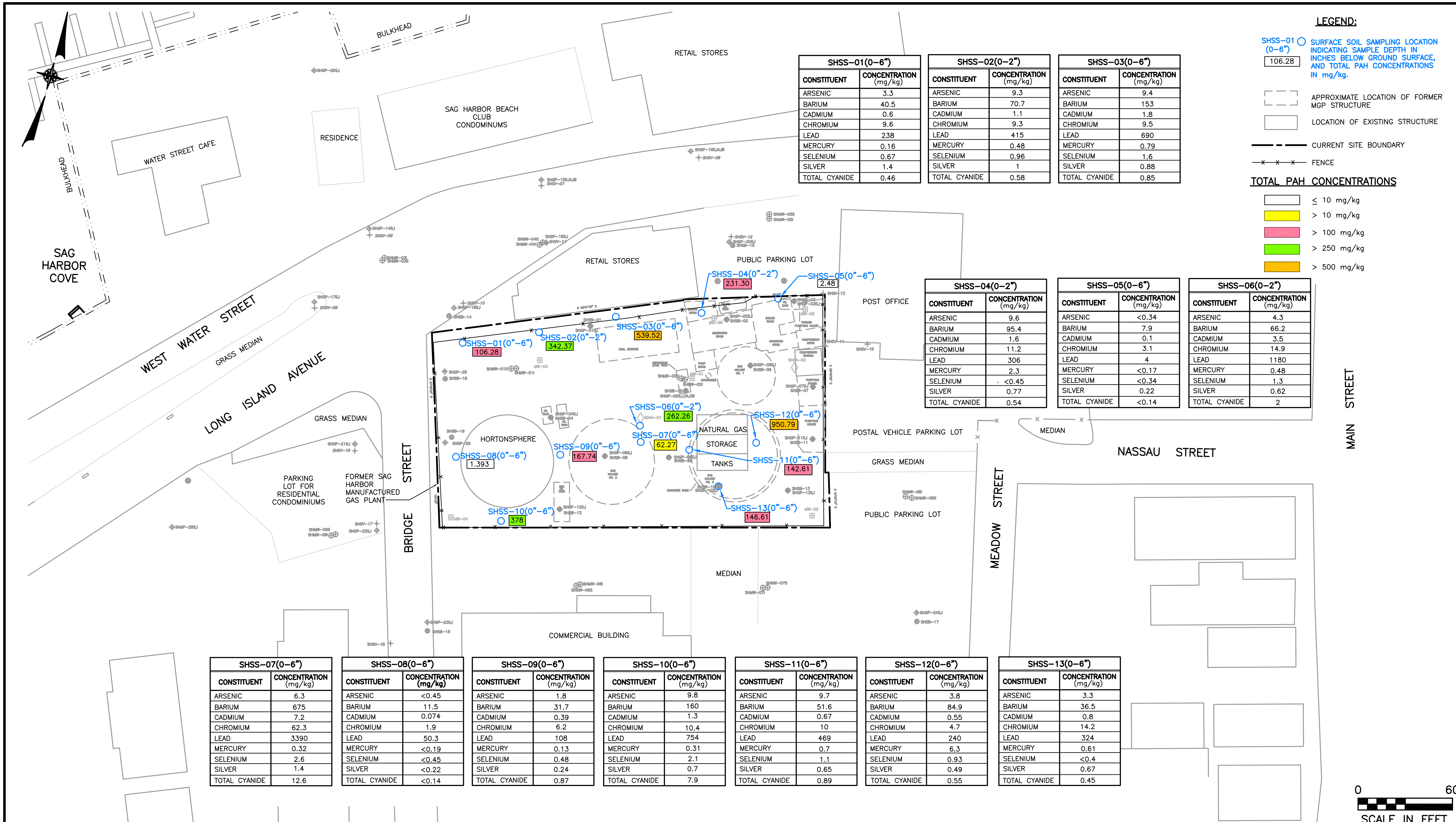
- **Coal Tar:** Coal Tar is a byproduct of the manufactured gas process and is typically comprised of a broad spectrum of hydrocarbon compounds including BTEX compounds, PAHs and phenols. However, it should be noted that elevated concentrations of phenols have generally not been encountered in association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

4.2 On-site Field Investigation

4.2.1 Surface Soil

In general, surface soil samples consisted of a moist, dark brown, silty sand topsoil containing varying amounts of crushed stone. All samples were collected below 6 to 8 inches of crushed stone which covers the entire site. The 13 samples did not exhibit any odors or apparent staining indicative of MGP-related constituents.

The analytical results for PAHs are summarized in **Table E-1**. RCRA metals and total cyanide are summarized in **Table E-2**, and total phenols are summarized in **Table E-3**. Analytical results associated with surface soil samples are also summarized in **Table F-1. Figure 4-1** identifies each surface soil sampling location along with chemical data for total PAHs, RCRA metals and total cyanide.



SHSS-01(0–6") CONSTITUENT	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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-07(0–6") CONSTITUENT	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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	CONCENTRATION (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

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

CHEMICAL DATA SUMMARY FOR SURFACE SOIL SAMPLES

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

FIGURE 4–1

PAHs

All 13 surface soil samples exhibited detectable concentrations of total PAH compounds. The highest total concentration of 950.79 mg/kg was observed at surface soil sample SHSS-12, located at the northeast portion of former Gas Holder No. 3. All 18 targeted PAH compounds were detected within one or more samples with the most frequently detected PAHs including: phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene, which were detected in all 13 surface soil samples. Similarly, acenaphthylene and anthracene were detected in 12 of 13 samples; naphthalene, 2-methylnaphthalene and dibenzo(a,h)anthracene were detected in 11 of 13 samples; and fluorene was detected in 10 of 13 samples.

Total PAH concentrations in the 12 surface soil samples collected during the 1995 site investigation, discussed in **Section 1.7**, ranged from a minimum of 16.74 mg/kg detected at B-03 located in the northwest portion of the site to a maximum of 19,080 mg/kg detected at B-04, located in the extreme southwest corner of the site. In general, the 1995 PAH results for surface soil were found to be higher than the current investigation. This is likely attributed to the fact that surface soil samples collected in 1995 were collected at depths of up to 2 feet bgs, whereas the depth of surface soil collected under the current investigation was 6 to 2 inches bgs.

RCRA Metals and Cyanide

As indicated in **Table F-1**, metals were generally within or below typical background concentrations for soil within the eastern United States, as presented in **Table 4-1**. Exceptions include mercury, which was detected above the typical background concentration in 11 of the 13 samples, and lead which was detected at a concentration of 3,390 mg/kg at SHSS-07. As indicated by the summary presented below, SHSS-07 exhibited the highest concentrations of all targeted metals with the exception of arsenic. SHSS-07 was collected from the northeast corner of former Gas Holder No. 2. In the majority of samples, total cyanide was either not detected or detected below the contract required detection limit (CRDL) of 1 mg/kg. The ranges of RCRA metal and total cyanide concentrations detected in surface soil samples are summarized below.

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Silver	undetected-1.4 mg/kg	SHSS-01 & SHSS-07
Selenium	undetected -2.6 mg/kg	SHSS-07
Mercury	undetected -6.3 mg/kg	SHSS-04
Lead	4-3390 mg/kg	SHSS-07
Chromium	1.9-62.3 mg/kg	SHSS-07
Cadmium	0.008-7.2 mg/kg	SHSS-07
Barium	7.9-675 mg/kg	SHSS-07
Arsenic	undetected -9.8 mg/kg	SHSS-10
Total Cyanide	undetected -12.6 mg/kg	SHSS-07

Four out of twelve surface soil samples collected during the 1995 investigation were analyzed for TAL metals and total cyanide. All metals were found to be generally within the background concentration ranges typical of the eastern United States. One exception was the presence of mercury observed at SS-01 at a concentration of 7.0 mg/kg. SS-01 was located along the eastern property line, in the general area of the former Purifier House. Total cyanide concentrations in the 1995 samples were found to be nondetectable or trace concentrations not exceeding 4.0 mg/kg.

Phenols

Phenols were not detected in any of the surface soil samples collected at the site.

4.2.2 Subsurface Soil

The analytical results of subsurface soil samples analyzed for BTEX and PAHs are summarized in **Tables E-4** and **E-5**, respectively. RCRA metals and total cyanide are summarized in **Table E-6**, and total phenols are summarized in **Table E-7**. All parameters detected from the full NYSDEC TAL/TCL analysis which are not already presented in the BTEX, PAH and RCRA metals summary tables are summarized in **Table E-8** for VOCs, **Table E-9** for SVOCs and **Table E-10** for TAL metals. Pesticides and PCBs are summarized in **Table**

E-11. Analytical results associated with subsurface soil samples are also summarized in **Table F-1**.

BTEX

Thirty-six out of 48 on-site subsurface soil samples exhibited detectable levels of BTEX. 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 measurements in excess of 200 ppm. **Table F-1** summarizes the range of BTEX concentrations associated with subsurface soil samples collected from on-site locations along with the location of the maximum detected concentration. 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.

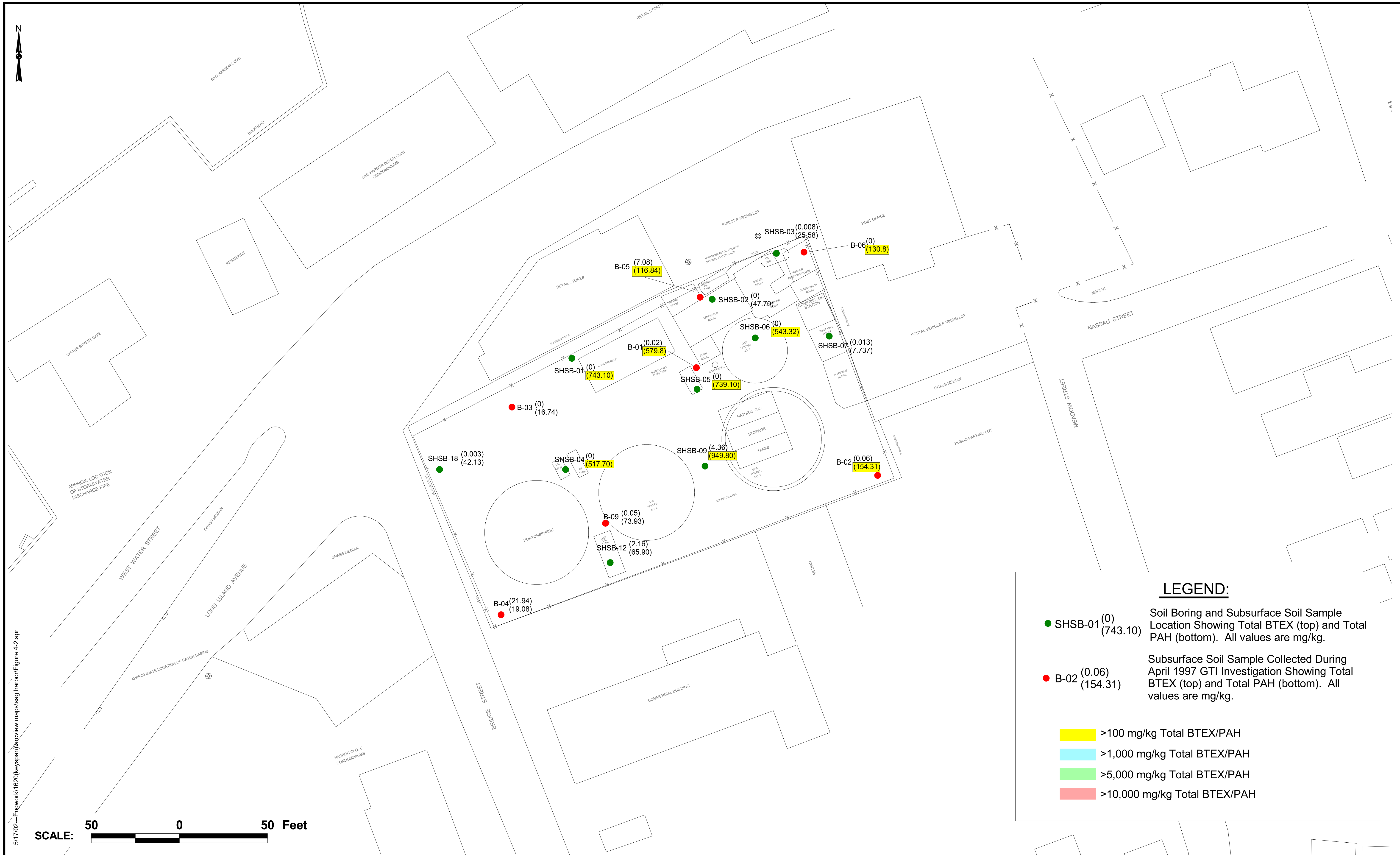
The maximum total BTEX concentration of 1,390 mg/kg observed within the Sag Harbor site was identified in soil sample SHSB-02 (6-7 feet), followed by 982 mg/kg in sample SHSB-02 (16-18 feet). SHSB-02 was located on the north side of the former Generator Room, south of the former Crude Oil Tank. Subsurface soil recovered from depths of 4 to 23 feet bgs at SHSB-02 exhibited discrete zones of NAPL at saturated levels, heavy hydrocarbon-like odors, staining and PID measurements of up to 1,625 ppm. These conditions were found to extend below the peat silt/clay unit at this location. PID measurements were greatest at this location (i.e., >300 ppm) between depths of 4 to 8 and 15 to 18 feet bgs. However, based on the analytical data, total BTEX concentrations decrease with increasing depth, with a total BTEX concentration of less than 0.1 mg/kg observed in soil sample SHSB-02 (52-54 feet).

The third highest total BTEX concentration of 364 mg/kg was observed at SHSB-11 (8-10 feet), located within the former location of the Purifying House on the eastern most portion of the site. Soil recovered at this location exhibited staining and hydrocarbon-like odors to a depth of approximately 16 feet bgs. However, these conditions do not extend beyond the peat silt/clay unit which extends to an apparent depth of 24 feet bgs at this location. The next highest total BTEX concentration of 177 mg/kg was observed at SHSB-10 (2-4 feet), completed within the former location of Gas Holder No. 3. Soil at this location exhibited evidence of NAPL and hydrocarbon-like odors to depth of at least 18 feet bgs. As discussed in **Section 3.2.2**, the peat silt/clay unit may actually be absent or very thin at SHSB-10; however, sample recovery was very poor within the intervals where the strata would be expected at this probe location making confirmation regarding the extent of the unit inconclusive in this area.

According to the 1997 Phase I Site Investigation report, a total of three subsurface soil samples were collected from the site and analyzed for BTEX. All samples were collected from below the water table, to a maximum depth of 7.5 feet bgs. Total BTEX concentrations ranged from 0.2 mg/kg in B-10, located immediately northeast of former Gas Holder No. 2, to a maximum of 127.8 mg/kg observed at B-01, located adjacent to the former Tar Separating Tank.

In general, BTEX concentrations in subsurface soil appears to decrease with depth, even in areas exhibiting evidence of NAPL. None of the soil samples collected below 18 feet bgs in support of the Remedial Investigation exhibited BTEX concentrations greater than 0.2 mg/kg. However, soil samples recovered from on-site probes SHSB-02, SHSB-06, SHSB-10 and SHSB-13, as well as off-site probe SHSB-15, did exhibit evidence of staining, sheens and odors below the peat silt/clay unit and as deep as 32 feet bgs. In addition, soil collected from monitoring well borehole SHMW-02 also exhibited physical signs of NAPL such as tar blebs, staining, sheen and odor as deep as 90 feet bgs. Though physical evidence of NAPL appeared to be present to this depth, sample SHSB-05 (88-90 feet) collected at this location exhibited nondetectable levels of BTEX.

Figures 4-2 through **4-5** 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 this investigation, as well as data generated under the Cut and Plug IRM (see **Section 2.8**) and the 1997 Phase I Site Investigation report (see **Section 1.7**). The data used for **Figure 4-2** is based on subsurface data collected at depths ranging from 0 to 2 feet bgs. The data used for **Figure 4-3** is based on subsurface soil data collected at depths ranging from 2-8 feet bgs. The data used for **Figure 4-4** is based on subsurface soil data collected at depths

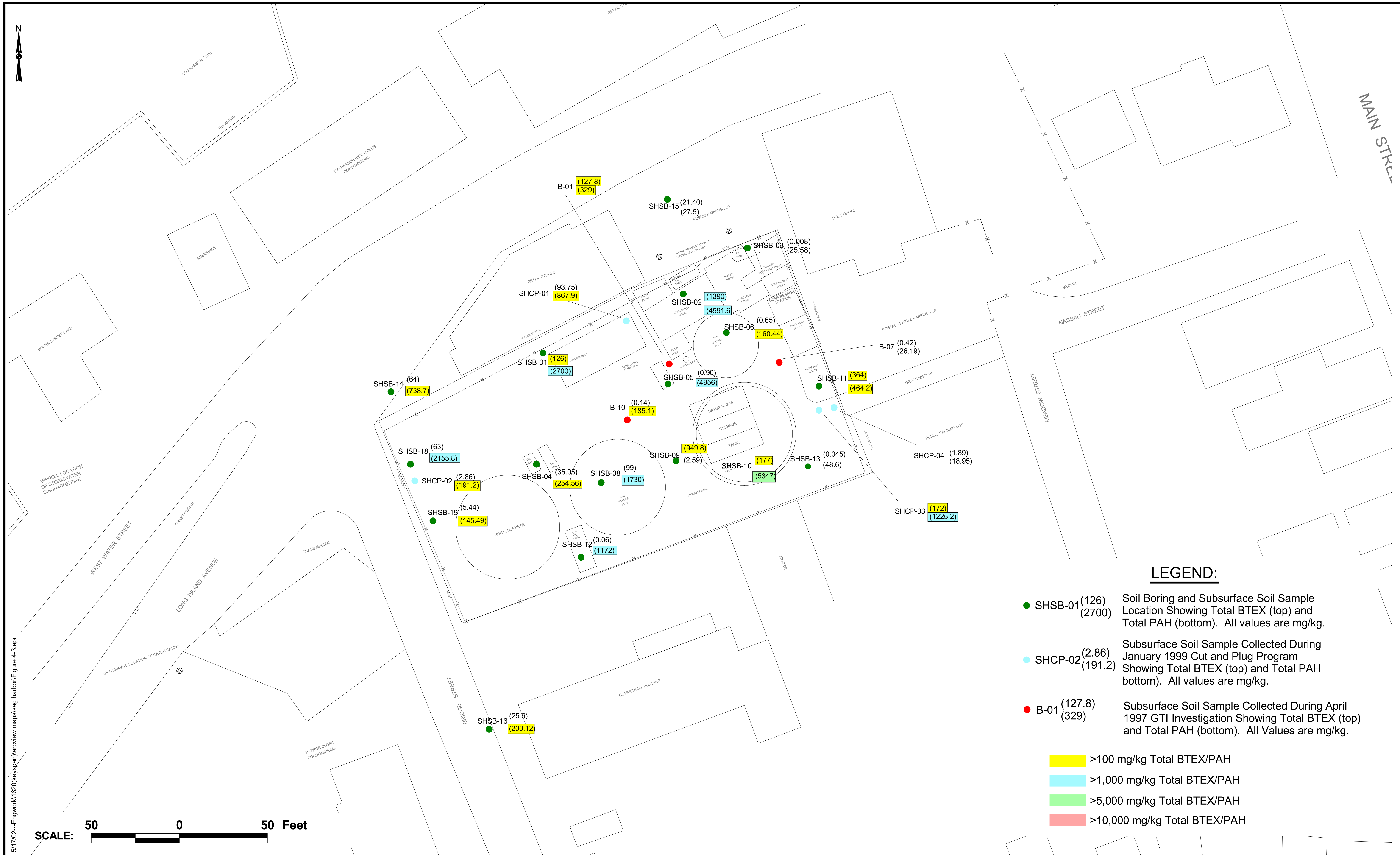


Dvirka and Bartolucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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

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

FIGURE 4-2

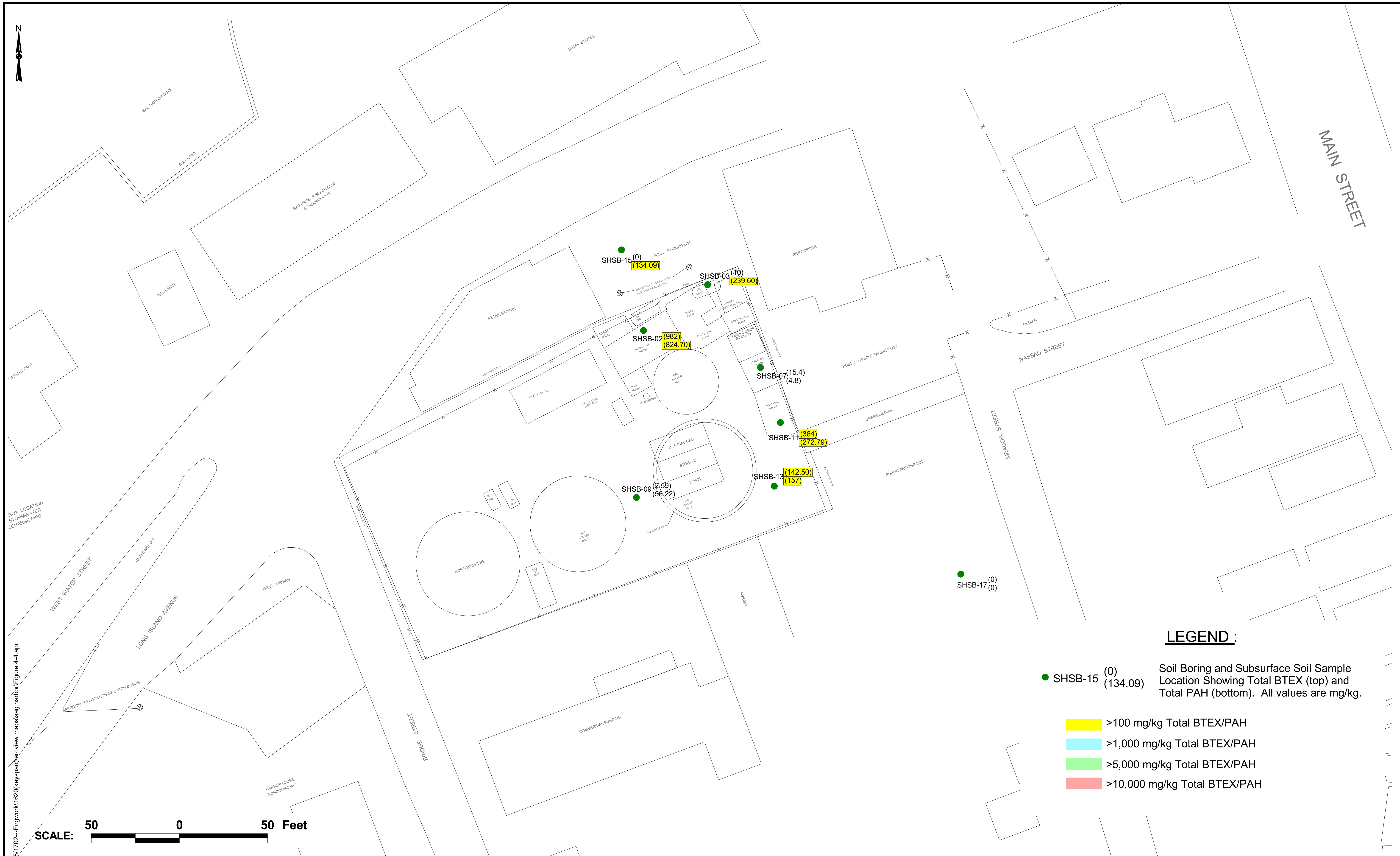


Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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

TOTAL BTEX/PAH IN SHALLOW SUBSURFACE SOIL (2 to 8 FEET)

FIGURE 4-3

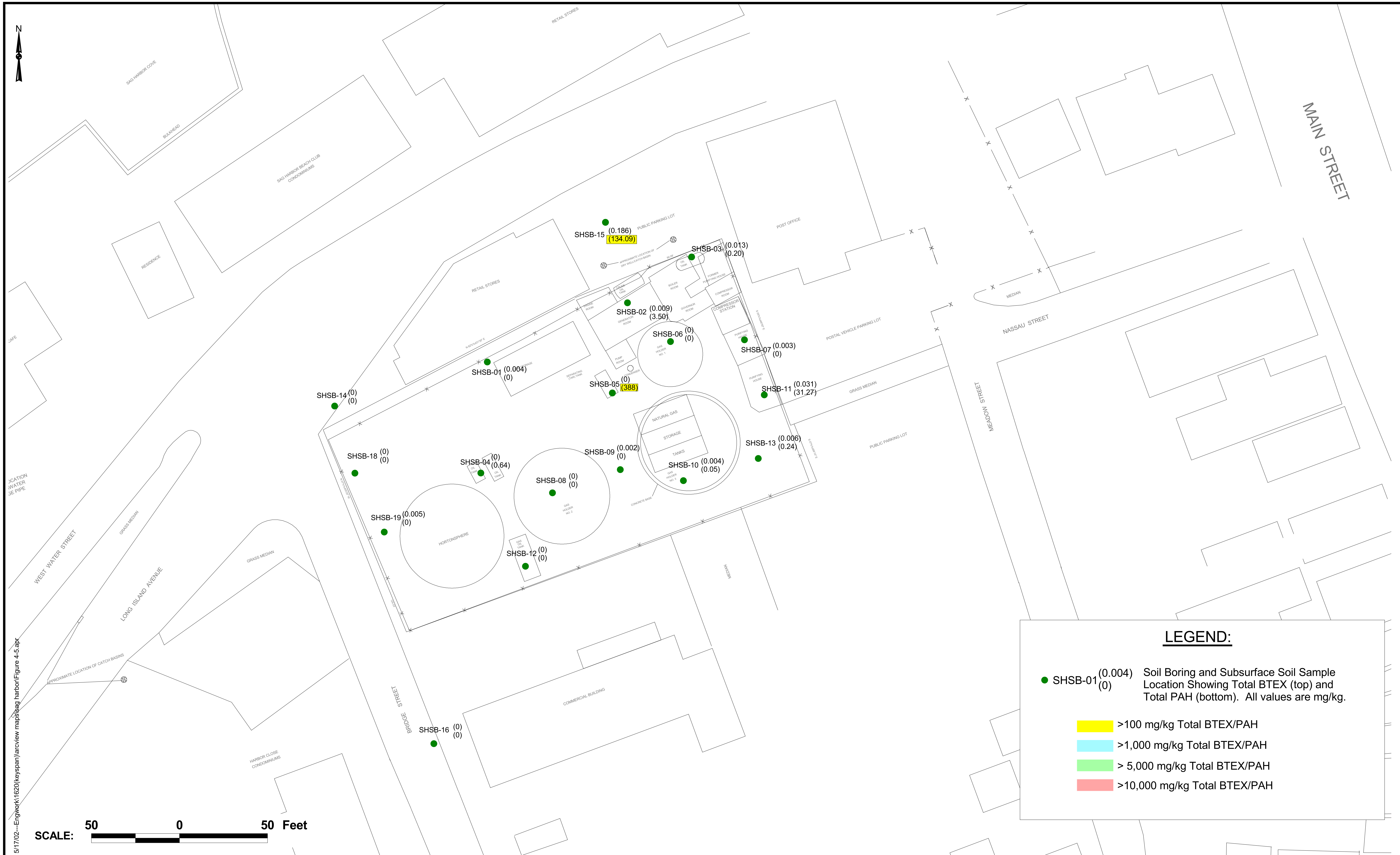


Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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

TOTAL BTEX/PAH IN INTERMEDIATE SUBSURFACE SOIL (8 to 18 FEET)

FIGURE 4-4



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

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

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

FIGURE 4-5

ranging from 8-18 feet bgs. The data used for **Figure 4-5** is based on subsurface soil data collected at depths greater than 18 feet bgs. At sample locations where more than one sample was analyzed for BTEX within a given depth range, the highest concentration detected was utilized in developing these maps. Based on the review of the maps, the following is observed:

1. Shallow subsurface soil to a depth of 2 feet bgs did not exhibit total BTEX concentrations exceeding 22 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. Off-site probe data from SHSB-14, 15 and 16 suggests some off-site migration of BTEX in subsurface soil above the peat silt/clay unit, to the north, northwest and southwest.
3. While evidence of NAPL such as 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 0.186 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 include 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.

While SHSB-01 (5 to 7 feet) exhibited a total BTEX concentration of 126 mg/kg and was located in close proximity of the former Coal Storage area, it is unlikely this former structure is a BTEX source based on its apparent historical use. It is possible the source of the BTEX observed at SHSB-01 is from other former MGP structures located to the southeast (upgradient), such as the former Gas Holders No. 2 and No. 3.

PAHs

A total of 40 of the 48 subsurface soil samples collected from the Sag Harbor site exhibited detectable levels of PAH compounds. Total detectable levels of PAH compounds range from trace concentrations of less than 0.05 mg/kg to a maximum total concentration of

5,347 mg/kg observed at SHSB-10 (2-4 feet). **Table F-1** summarizes the range of PAH concentrations associated with subsurface soil samples collected from on-site locations, along with the location of the maximum detected concentration.

Sample SHSB-10 (2’-4’), which exhibited the highest on-site total PAH concentration of 5,347 mg/kg, was completed in the southwest portion of former Gas Holder No. 3. As discussed above, this sample also exhibited a total BTEX concentration of 177 mg/kg, as well as evidence of NAPL to a depth of approximately 18 feet bgs. The next highest total PAH concentration of 4,956 mg/kg was observed in sample SHSB-05 (4-8 feet). Soil probe SHSB-05 was completed in the area of the former Tar Separating Tank. Soil recovered from SHSB-05 initially exhibited evidence of NAPL to a depth of approximately 12 feet bgs. However, as discussed previously, during the installation of monitoring well SHMW-02D, located adjacent to SHSB-05, physical evidence of NAPL was also identified in recovered soil samples to a depth of 90 feet bgs. However, analysis of a soil sample collected at this interval and labeled SHSB-05 (88-90 feet) exhibited a total PAH concentration of only 1.6 mg/kg.

Total PAH concentrations in the three subsurface soil samples collected from the site in support of the 1997 Phase I Site Investigation report ranged from a minimum of 26.2 mg/kg observed at B-07 to a maximum of 329 mg/kg observed at B-10 located near the former Tar Separating Tank.

As with BTEX, PAH concentrations also tend to decrease with depth at the Sag Harbor site. With the exception of SHSB-11 (30-32 feet) collected from the former southernmost Purifier House, soil samples with total PAH concentrations exceeding 3.5 mg/kg were not detected at any given boring location below a depth of 22-24 feet. SHSB-11 (30-32 feet) exhibited a total PAH concentration of 31.236 mg/kg. The maximum discrete PID reading at this interval was 6.8 ppm and no evidence of odors or staining was noted at this sample depth.

Figures 4-2 through **4-5** depict total PAH concentrations along with total BTEX concentrations in subsurface soil within the Sag Harbor site and off-site sample locations. These maps include soil data generated from this investigation, as well as data generated under the Cut and Plug IRM (see **Section 2.8**) and the 1997 Phase I Site Investigation report (see **Section 1.7**). Data utilized for **Figure 4-2** is based on subsurface data collected at depths ranging from 0 to 2 feet bgs. The data used for **Figure 4-3** is based on subsurface soil data collected at depths ranging from 2 to 8 feet bgs. The data used for **Figure 4-4** is based on subsurface soil data collected at depths ranging from 8 to 18 feet bgs. The data used for **Figure 4-5** is based on subsurface data collected at depths greater than 18 feet bgs. At sample points where more than one sample was analyzed for PAHs within a given depth range, the highest concentration detected was utilized in developing these maps. Based on the review of these maps, the following is observed.

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 949.8 mg/kg in the area between former Gas Holders No. 2 and 3 (SHSB-09). 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 also observed in off-site shallow subsurface soil northwest of the site (SHSB-14), as well as southwest of the site (SHSB-16).

4. 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. PAH data for SHSB-15, located in the public parking lot north of the site indicates potential off-site migration of PAH compounds in subsurface soil below the peat silt/clay unit in this area.

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 F-1**, 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 36 of the 48 subsurface soil samples selected for analysis from the site were found to be free of detectable levels of this compound. The highest total cyanide concentration of 4.8 mg/kg was detected in sample SHSB-10 (2-4 feet). The second highest total cyanide concentration of 1.4 mg/kg was detected in sample SHSB-03 (1-3 feet). 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	undetected -13.6	SHSB-03 (1-3 feet)
Barium	1.7-180	SHSB-03 (1-3 feet)
Cadmium	undetected -1.4	SHSB-13 (2-4 feet)
Chromium	0.86-41.9	SHSB-05 (0.5-0.7 feet)

Constituents	Concentration Range (mg/kg)	Sample Exhibiting Maximum Concentration
Lead	undetected -485	SHSB-06 (0.5-1.5 feet)
Mercury	undetected -4.9	SHSB-06 (0.5-1.5 feet)
Selenium	undetected -6.4	SHSB-13 (2-4 feet)
Silver	undetected -1.4	SHSB-02 (0.5-1.5 feet)
Total Cyanide	undetected -4.8	SHSB-10 (2-4 feet)

As shown above, the highest concentrations of arsenic and barium were observed in sample SHSB-03 (1-3 feet). Soil probe SHSB-03 was advanced in the location of the former oil tank on the northeast corner of the site. Soil recovered at this boring from 0 to 4 feet bgs consisted of brown to black silty sand, with no odor or staining observed. The highest concentrations of cadmium and selenium were observed in sample SHSB-13 (2-4 feet). Soil probe SHSB-13 was advanced southeast of Gas Holder No. 3, on the southeast corner of the site. Soil recovered at this boring from 0 to 4 feet bgs consisted of brown silt, fill material and coal with no odor or staining observed. The highest concentrations of lead and mercury were observed in sample SHSB-06 (0.5-1.5 feet), completed in the area of former Gas Holder No. 1. Soil recovered at this boring from 0 to 4 feet bgs consisted of brown silty sand with rock fragments and hydrocarbon-like odors, but no apparent staining or NAPL.

As part of the 1997 Phase I Site Investigation report, three subsurface soil samples were analyzed for total cyanide, but not RCRA metals. Total cyanide was found to be below detection limits, or did not exceed 3 mg/kg in these samples.

Phenols

Total phenols analyses indicate that phenols were nondetectable in all 48 of the subsurface soil samples collected from the site.

PCBs

One PCB, Aroclor-1260, was detected in 2 of 3 analyzed subsurface soil samples. Aroclor-1260 was detected in samples SHSB-02 (0.5-1.5 feet) and SHSB-03 (1-3 feet) at respective concentrations of 0.15 mg/kg and 0.97 mg/kg. No other PCBs were detected in these subsurface soil samples.

VOCs

Analysis of three subsurface soil samples for the full NYSDEC TCL VOCs only detected two compounds other than BTEX. These compounds are methylene chloride in sample SHSB-03 (1-3 feet) at a concentration of 0.13 mg/kg, and acetone in samples SHSB-01 (0.5-1.5 feet) and SHSB-03 (1-3 feet) with concentrations of 0.008 mg/kg (qualified as nondetect due to laboratory contamination) and 0.07 mg/kg (qualified as estimated, potentially biased high), respectively. Methylene chloride and acetone are both common laboratory related compounds.

SVOCs

Analysis of three subsurface soil samples for the full NYSDEC TCL SVOCs indicates that non-PAH SVOCs were not present at detectable concentrations in these samples.

TAL Metals

Metals analysis of three subsurface soil samples 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**). The ranges of TAL metal concentrations in the subsurface soil samples are summarized below:

TAL Metals	**Concentration Range (mg/kg)**	**Sample Exhibiting Maximum Concentration**
Aluminum	2330-2700	SHSB-03 (1-3 feet)

TAL Metals	Concentration Range (mg/kg)	Sample Exhibiting Maximum Concentration
Antimony	undetected-0.8	SHSB-01 (0.5-1.5 feet)
Beryllium	0.2-0.3	SHSB-03 (1-3 feet)
Calcium	1760-18700	SHSB-03 (1-3 feet)
Cobalt	2-2.7	SHSB-03 (1-3 feet)
Copper	29.1-62.1	SHSB-03 (1-3 feet)
Iron	6410-12600	SHSB-01 (0.5-1.5 feet)
Magnesium	1070-2320	SHSB-02 (0.5-1.5 feet)
Manganese	46.4-97.3	SHSB-02 (0.5-1.5 feet)
Nickel	5.8-10.8	SHSB-01 (0.5-1.5 feet)
Potassium	208-363	SHSB-03 (1-3 feet)
Sodium	175-456	SHSB-03 (1-3 feet)
Thallium	undetected	NA
Vanadium	9.9-14.3	SHSB-03 (1-3 feet)
Zinc	142-352	SHSB-03 (1-3 feet)

Pesticides

Pesticide analyses of three subsurface soil samples selected for the full TCL/TAL analyses indicate that all three samples contained detectable levels of at least four of the 21 pesticides analyzed for. Dieldrin was detected in SHSB-01 (0.5-1.5 feet), SHSB-02 (0.5-1.5 feet) and SHSB-03 (1-3 feet) at concentrations of 0.83 mg/kg, 0.02 mg/kg and 0.028 mg/kg, respectively. 4,4-DDD was also detected in all three samples at concentrations of 0.33 mg/kg, 0.0041 mg/kg and 0.0061 mg/kg, respectively. Endrin-Ketone was also detected in all three samples at concentrations of 0.52 mg/kg, 0.082 mg/kg and 0.05 mg/kg, respectively. Endosulfan II was detected in samples SHSB-01 (0.5-1.5 feet) and SHSB-03 (1-3 feet) at concentrations of 0.72 mg/kg and 0.024 mg/kg, respectively. 4,4-DDT and endrin-aldehyde were detected in sample SHSB-01 (0.5-1.5 feet) at concentrations of 0.35 mg/kg and 0.13 mg/kg. Finally, Endosulfan sulfate was detected in sample SHSB-02 (0.5-1.5 feet) at a concentration of 0.01 mg/kg, and methoxychlor was detected in sample SHSB-03 (1-3 feet) at a concentration of 0.029 mg/kg.

4.2.3 Groundwater

Groundwater quality at the Sag Harbor former MGP site was characterized through the analysis of groundwater samples collected from groundwater probes, existing shallow monitoring wells and newly installed monitoring wells. As discussed in **Section 2.3**, an existing monitoring well inventory was performed at the beginning of the field investigation program. Based on this inventory, six existing monitoring wells were identified within the Sag Harbor site. These existing wells were sampled in March of 2000. BTEX and PAH results for monitoring wells are summarized in **Table E-12** and **Table E-13**, respectively. RCRA metals and total cyanide results are summarized in **Table E-14**. Total dissolved solids and chloride results are summarized in **Table E-15**. A total of 15 groundwater probes were completed on the Sag Harbor site. BTEX and PAH results for groundwater probes are summarized in **Table E-17** and **Table E-18**, respectively. VOC results for selected groundwater probes are summarized in **Table E-19**. Analytical results associated with on-site groundwater samples are also summarized in **Table-F-2**.

Based on the results of the existing monitoring well and groundwater probe sampling, a total of four new monitoring wells were installed on the Sag Harbor site. In April of 2000, the newly installed wells were sampled. With the exception of one well, the existing monitoring wells were also resampled. BTEX and PAH results are also summarized in **Table E-12** and **Table E-13**, respectively. RCRA metals, total cyanide, iron and results are also summarized in **Table E-14**. Total dissolved solids and chloride results are also summarized in **Table E-15**. As previously mentioned, analytical results associated with groundwater samples are also summarized in **Table F-2**.

Based on the hydrogeologic setting of the site, 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 12 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.

BTEX

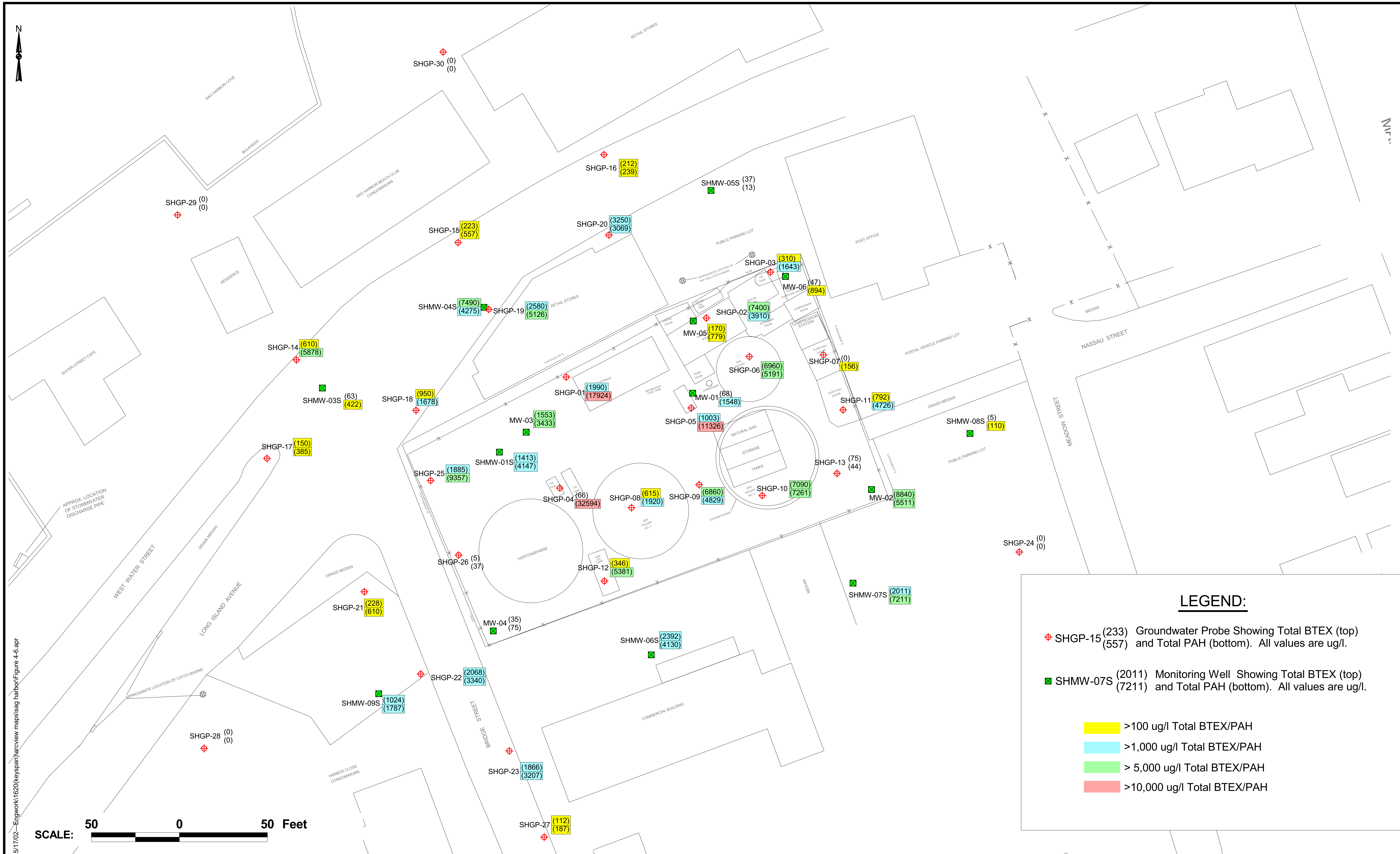
Forty-nine out of 51 on-site groundwater samples exhibited detectable concentrations of BTEXThe highest levels of BTEX were generally observed in the eastern portion of the Sag Harbor site, from within the shallow groundwater zone. However, the maximum total BTEX concentration of 23,900 ug/l, was observed in the intermediate groundwater zone at SHGP-02 (32-34 feet), located on the north side of the former Generator Room, south of the former Crude Oil Tank. This sample was described as containing floating NAPL and sheen, and was collected from the same general location which exhibited the highest total BTEX soil concentration observed at SHSB-02 (6-7 feet). The next highest total BTEX concentrations of 8,840 ug/l and 7,940 ug/l were observed in the two groundwater samples collected from shallow existing monitoring well MW-02, located in the extreme southeast corner of the site. Both groundwater samples collected from MW-02 exhibited a hydrocarbon-like odor, but no sheen or measurable NAPL was noted. As discussed in **Section 3.3**, there appears to be a south to southwesterly component of flow within the southernmost portion of the site. Based on these observed conditions, MW-02 could be considered downgradient of the southernmost former Purifying House, located along the eastern property boundary.

The majority of groundwater samples collected from existing and newly installed monitoring wells exhibited naphthalene/hydrocarbon-like odors, but no sheens or floating product. Exceptions to this include SHMW-01S, which exhibited a sheen during sampling,, and MW-05, which contained a thin layer (less than 0.1-foot thick) of floating NAPL with a petroleum-like odor during water level measurements on December 18, 2000. A sample of this NAPL was collected and analyzed by USEPA Method 8100M/8015M for petroleum finger print determination. Based on this analysis, and comparison of the results to 23 different reference standards, the NAPL collected from MW-05 most closely matched a diesel fuel; however, based on the laboratory report, it appeared to have a slightly higher boiling point and contained less prominent n-alkanes than the standard diesel fuel reference.

Figures 4-6 through **4-8** summarize total BTEX and total PAH, data collected from on-site and off-site monitoring wells and groundwater probes. **Figure 4-6** depicts the shallow groundwater zone, at or above the peat silt/clay unit, **Figure 4-7** depicts the intermediate groundwater zone and **Figure 4-8** depicts the groundwater data available for sample depths greater than 45 feet bgs, which is considered the deep groundwater zone. **Figures 4-6** through **4-8** supports observations discussed earlier in this section, including:

1. The highest total BTEX concentrations are generally observed in the shallow groundwater zone, 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). The only other shallow groundwater sample exhibiting a total BTEX concentration in excess of 5,000 ug/l is off-site shallow well SHMW-04S, indicating off-site migration of BTEX to the north and northwest in shallow groundwater. Additionally, Figure 4-5 illustrates the off-site migration of BTEX compounds in shallow groundwater west of the site (SHGP-14, SHGP-18, SHGP-22 and monitoring well SHMW-09S) and to the south of the site (SHMW-06S and SHMW-07S).

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. Off-site migration of BTEX within

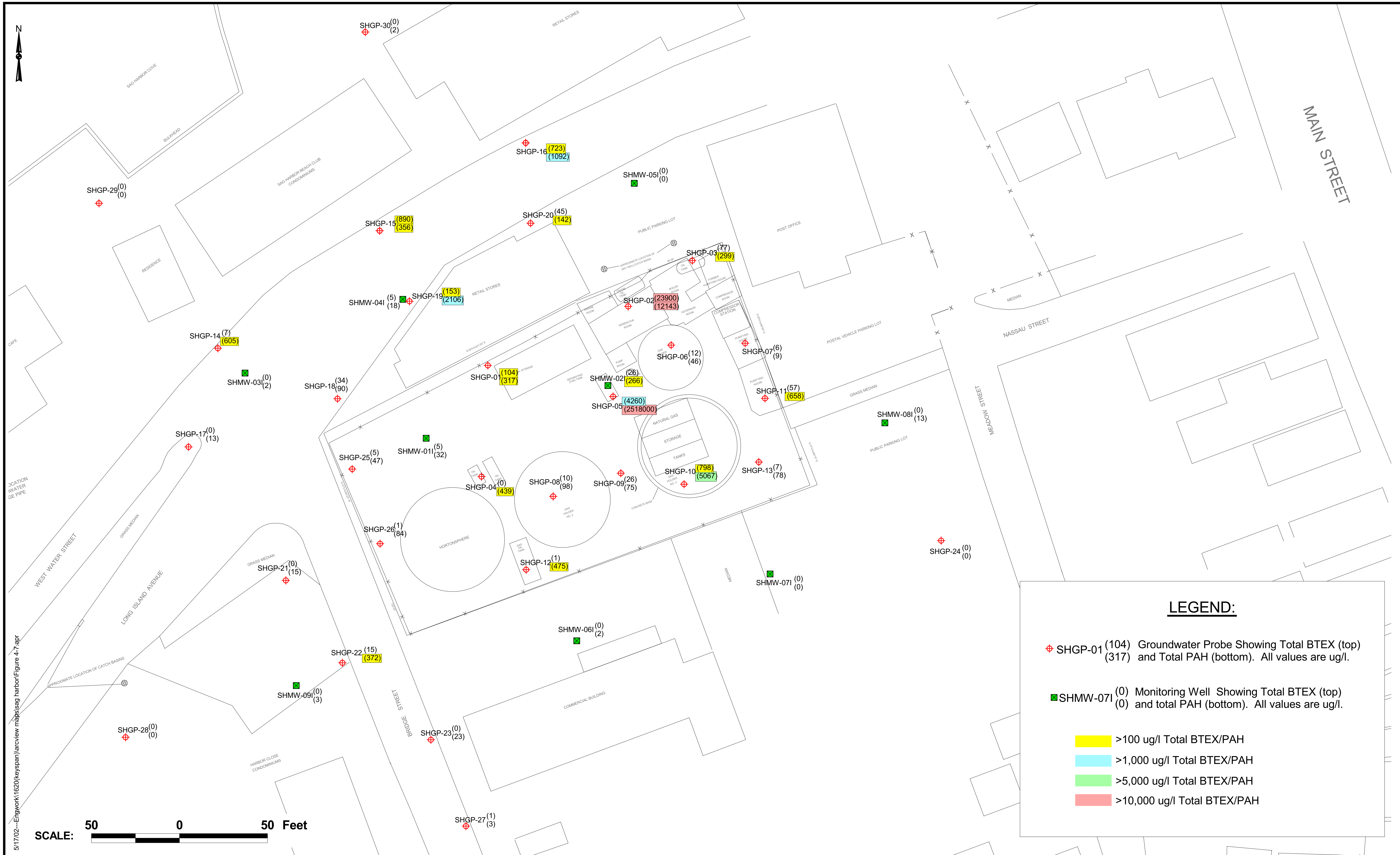


Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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

TOTAL BTEX/PAH IN SHALLOW GROUNDWATER (0 to 10 FEET)

FIGURE 4-6



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

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

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

FIGURE 4-7

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

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

TOTAL BTEX/PAH IN DEEP GROUNDWATER (45 to 75 FEET)

FIGURE 4-8

the intermediate groundwater zone does not appear to be occurring to the south or west. Data from groundwater probes SHGP-15 and SHGP-16 indicates migration of BTEX to the north of the site.

3. BTEX groundwater data below the intermediate zone (i.e., below 45 feet bgs), while limited, does indicate BTEX concentrations are lower within the deep groundwater zone when compared to the shallower zones.

PAHs

All 51 on-site groundwater samples exhibited detectable concentrations of PAH compounds.

Total PAHs are present in groundwater throughout much the site, though the highest concentrations are generally observed in the eastern and central portions. In general, the highest concentrations are observed in the shallow groundwater zone; however, intermediate groundwater samples collected primarily from the eastern portion of the site also exhibited levels of PAHs with the highest PAH concentrations observed at SHGP-05 (30-32 feet).

Groundwater probe sample SHGP-05 (30-32 feet), completed in the area of the former Tar Separating Tank, exhibited a maximum total PAH concentration of 2,518,000 ug/l. Total PAH concentrations decrease with increasing depth at this location with SHGP-05 (48-50 feet) and SHGP-05 (60-62 feet) exhibiting concentrations of 4,158 ug/l and 627 ug/l, respectively. Groundwater collected from SHGP-05 exhibited hydrocarbon/naphthalene-like odors, sheens and a brown colored NAPL that appeared to float on recovered groundwater.

The next highest total PAH concentrations of 32,594 and 17,924 ug/l were observed in shallow groundwater samples SHGP-04 (0-4 feet) and SHGP-01 (1-5 feet), respectively. SHGP-04 was completed in the area of the former Oil Tanks northeast of the Hortonsphere, and SHGP-01 was completed near the northwest corner of the former Coal Storage Area on the north side of the site. Water sampled from both of these locations exhibited hydrocarbon-like odors, a brown colored NAPL floating on recovered groundwater and sheens. PAH concentrations appear to decrease with increasing depth at both probe locations with SHGP-04 (30-32 feet) and SHGP-01 (32-34 feet) exhibiting total PAH concentrations of 439 ug/l and 317 ug/l, respectively.

As discussed previously, **Figures 4-6** through **4-8** summarize total PAH groundwater collected from on-site and off-site locations with the data grouped as shallow groundwater (**Figure 4-6**), intermediate groundwater (**Figure 4-7**) and deep groundwater (**Figure 4-8**). **Figures 4-6** through **4-8** support the findings discussed earlier in this section, including:

1. The highest total PAH concentrations are generally observed in the shallow groundwater zone in the eastern and central portions of the site. However, some of the highest PAH concentrations are also observed in the intermediate groundwater zone, specifically at SHGP-02, SHGP-05 and SHGP-10, all located in the eastern portion of the site.

2. In addition to the eastern portion of the site, some of the highest PAH concentrations in shallow groundwater were observed along the northern property boundary (SHGP-01), the former Oil Tanks (SHGP-04), the former Gas Oil Tank (SHGP-12) and the northwestern corner of the site (SHGP-25).

3. Similar to the BTEX data, PAH concentrations in shallow groundwater suggest the off-site migration of PAHs in the shallow groundwater zone to the north and northwest (SHGP-14, SHGP-15, SHGP-18, SHGP-20 and SHMW-04S), to the west (SHGP-22 and SHMW-09S) and to the south (SHGP-23, SHMW-06S and SHMW-07S). Additionally SHMW-08S suggests the potential for an easterly component of migration with an observed total PAH concentration of 110 ug/l.

4. Unlike BTEX which is primarily present in shallow groundwater, intermediate groundwater samples throughout much of the site exhibit PAH concentrations. However, similar to BTEX, the highest PAH concentrations are observed in intermediate groundwater samples collected from the eastern portion of the site, at SHGP-02, SHGP-05 and SHGP-10. 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, unlike BTEX, there appears to be some westerly off-site migration of PAHs, as indicated by SHGP-22.

5. PAH data for the deep groundwater zone indicates that PAHs are present within this portion of the aquifer; however, at lower concentrations than shallow zones. For example, the deepest sample (SHMW-02D) exhibits a total PAH concentration of only 308 ug/l.

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

Comparison of Historic and Current BTEX and PAH Groundwater Data

Table 4-2 summarizes current and historical total BTEX and PAH data for the six existing groundwater monitoring wells installed at the site in 1995 in support of the program documented in the 1997 Phase I Site Investigation report. A review of **Table 4-2** indicates that BTEX concentrations in four out of six monitoring wells (MW-01, MW-04, MW-05 and MW-06) have decreased over the 5-year period for which data is available. For example, the most dramatic decrease was observed at MW-01 where the total BTEX concentrations decreased from 2,720 ug/l to 68 ug/l. Data for the remaining two wells (MW-02 and MW-03) indicate BTEX levels remained the same or have increased slightly over the 5-year period.

A review of PAH data for existing monitoring wells also indicates a trend in decreasing PAH concentrations similar to BTEX. Specifically, monitoring wells MW-01, MW-04, MW-05 and MW-06 show a relatively sharp decline in total PAH concentrations over the 5-year period. The most significant decrease is observed at MW-06 where the 1995 sample exhibited a total PAH concentration of 12,381 ug/l and the April 2000 sample exhibited a total PAH concentration of only 101 ug/l. Though not as dramatic, MW-02 and MW-03 also indicate a decrease in PAH concentrations over the 5-year period.

TABLE 4-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

COMPARISON OF 1995 BTEX AND PAH GROUNDWATER DATA WITH 2000 GROUNDWATER DATA FOR EXISTING ON-SITE MONITORING WELLS

Parameter	Sample Date	Well ID					
		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06
Total BTEX (ug/l)	11/21/95	2,720	5,429	1,222	864	9,100	334
	3/17/00	10	8,840	668	35	170	47
	4/19/00	68	7,940	1,553	N/A	5	30
Total PAH (ug/l)	11/21/95	4,331	6,246	5,634	2,933	12,381	12,154
	3/17/00	1,548	5,511	3,065	75	779	894
	4/19/00	257	5,114	3,433	N/A	101	653

N/A: MW-04 could not be sampled in April of 2000 due to the well being submerged under puddle.

Metals and Total Cyanide

Metals analysis of groundwater samples collected from existing and newly installed monitoring wells located at the Sag Harbor site 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. However, several anomalies to this general observation have been identified. These include the concentration of barium detected in monitoring wells MW-02, MW-03 and MW-05 at 483, 115 and 123 ug/l, respectively. Groundwater sampling activities, previously conducted in support of the 1997 Phase I Site Investigation report, also revealed elevated barium concentrations including, MW-01 (166 ug/l), MW-02 (169 ug/l) and MW-03 (126 ug/l).

Groundwater samples collected from several monitoring wells were also analyzed for iron and manganese in support of the remedial investigation. The results indicate that iron concentrations at the site range from 226 ug/l in SHMW-02I to 12,800 ug/l in SHMW-01S, and manganese concentrations range from 18.7 ug/l in SHMW-01I to 184 ug/l in SHMW-01S. Iron concentrations in groundwater samples collected from existing wells in 1995 ranged from 1,080 ug/l to 21,500 ug/l. Manganese concentrations in 1995 were found to range from 96 ug/l to 951 ug/l.

Total cyanide concentrations for many of the groundwater samples collected from the Sag Harbor site were found to be below the CRDL of 20 ug/l. Exceptions to this were observed in 5 of 15 samples, with a maximum total cyanide concentration of 92.2 ug/l observed in the MW-02 sample collected in March of 2000. However, the sample collected from this well in April of 2000 only exhibited 13.5 ug/l total cyanide. MW-02 is located in the southeast corner of the site. The next highest total cyanide concentrations of 72 and 34.4 ug/l were observed in the March 2000 samples collected from MW-05 and MW-06. MW-05 is located in the area of the Generator Room and the Engine Room on the north side of the site, and MW-06 is located in the area of the former purifying house and the oil tank on the northeast corner of the site. The April 2000 samples collected from MW-05 and MW-06 were nondetect and 24.8 ug/l, respectively.

The remaining sample, which exhibited total cyanide in excess of the CRDL, is the March 2000 sample collected from MW-04, with 28.1 ug/l. MW-04 is located on the southwest corner of the site. As stated above, this monitoring well was not resampled in April. All samples exceeding the CRDL for total cyanide were observed in shallow samples. Analysis of groundwater samples collected from the site in 1995 indicated a maximum total cyanide concentration of 50 ug/l detected at MW-01.

Volatile Organic Compounds

With the exception of BTEX, volatile organic compounds included in the TCL parameter list were not detected in either of the two groundwater probe samples selected for this analysis (SHGP-02 [0-4 feet] and SHGP-02 [30-32 feet]).

TDS and Chloride

Groundwater samples collected from existing and newly installed monitoring wells were analyzed for total dissolved solids (TDS) and chloride, the results of which are summarized on **Table E-15**. In general, TDS and chloride concentrations were detected at higher concentrations in shallow groundwater samples as compared to intermediate groundwater samples. The following summarizes the concentration range of each parameter in shallow and intermediate wells:

Shallow Wells	**Concentration Range**
TDS	78 mg/ (MW-03) to 330 mg/l (MW-02)
Chloride	5 mg/l (MW-03) to 58 mg/l (MW-02)

Intermediate Wells	**Concentration Range**
TDS	170 mg/l (SHMW-02I) to 190 mg/l (SHMW-01I)
Chloride	20 mg/l (SHMW-01I) to 32 mg/l (SHMW-02I)

Average groundwater concentrations for chloride and TDS in the Upper Glacial aquifer of the South Fork of Long Island are 19 mg/l and 77 mg/l, respectively (USGS Water Supply Paper 2073).

4.2.4 Ambient Air

Two ambient air samples were collected at the Sag Harbor site. One ambient air sample (SHAA-01) was collected in the central portion of the site, and the other sample (SHAA-02) was collected within the equipment enclosure of the compressor station building on the eastern side of the site. Both samples were analyzed for BTEX compounds and naphthalene. **Table E-20** summarizes the analytical results for the ambient air samples.

Both of the ambient air samples contained detectable levels of toluene. Toluene was detected at concentrations of 0.80 parts per billion by volume (ppbv) and 0.91 ppbv in SHAA-01 and SHAA-02, respectively. No other targeted compounds were detected in either of these samples.

4.3 Off-site Field Investigation Program

4.3.1 Subsurface Soil

Nine subsurface soil samples were selected for laboratory analysis from four soil probes advanced off-site. One probe (SHSB-14) was located north of the northwest corner of the site, one probe (SHSB-15) was located north of the northeast corner of the site, one probe (SHSB-16) was located south of the southwest corner of the site, and one probe (SHSB-17) was located southeast of the southeast corner of the site, as shown on **Drawing 2**. BTEX and PAH results are summarized on **Figures 4-2** through **4-5**, as well as in **Table E-4** and **Table E-5**, respectively. RCRA metals and total cyanide are summarized on **Table E-6**. Total phenols are summarized on **Table E-7**. Analytical results associated with subsurface soil samples collected from off-site locations are also summarized in **Table F-3**.

BTEX

BTEX compounds were detected in four of the nine off-site subsurface soil samples, with the highest total BTEX concentration of 64 mg/kg being observed in sample SHSB-14 (5-7 feet), located adjacent to the northwest corner of the site. The probe log for this sample indicated hydrocarbon-like odors, staining and a sheen as well as a maximum PID measurement of >2,000 ppm. The next highest total BTEX concentration of 25.6 mg/kg was observed in sample SHSB-16 (6-8 feet). SHSB-16 was advanced on the east side of Bridge Street, approximately 65 feet south of the site. The probe log for this sample indicated slight hydrocarbon-like odors and staining, as well as a maximum PID measurement of 180 ppm. At off-site soil probes SHSB-14 and SHSB-16, physical evidence of NAPL such as staining, hydrocarbon-like odors and/or elevated PID measurements did not extend beyond a depth of 12 feet bgs. Additionally, BTEX compounds in deep samples collected from these probe locations were nondetectable.

The remaining two off-site BTEX detections in subsurface soil included SHSB-15 (5-7 feet) and SHSB-15 (26-28 feet), where total BTEX concentrations of 21.4 mg/kg and 0.19 mg/kg, respectively, were observed. Soil probe SHSB-15 was advanced north of the northeast corner of the site. At SHSB-15, evidence of NAPL initially appeared to be present to a depth of only 12 feet bgs, at or near the bottom of the peat silt/clay unit. However, staining, isolated zones of saturated NAPL and hydrocarbon-like odors were also noted between 24 and 36 feet bgs. Below 36 feet, recovered soil did not exhibit evidence of NAPL, and analysis of SHSB-15 (48-50 feet) indicated nondetectable levels of BTEX at this depth.

The remaining off-site soil probe (SHSB-17) indicated a hydrogen sulfide-like odor, and PID measurements of up to 10.2 ppm. BTEX compounds were not detected in the samples selected for laboratory analysis from this probe.

PAHs

PAH compounds were detected in six of the nine subsurface soil samples obtained from off-site locations. Consistent with BTEX results, the highest total PAH concentration was observed in sample SHSB-14 (5-7 feet) at 738.7 mg/kg.. The most abundant PAH compounds in this sample included phenanthrene (130 mg/kg), followed by naphthalene (100 mg/kg) and acenaphthene (89 mg/kg). PAH concentrations at this probe location also appear to decrease with depth with sample SHSB-14 (48-52 feet) exhibiting nondetectable levels.

Also consistent with the BTEX results, the next highest total PAH concentration was reported for sample SHSB-16 (6-8 feet), at 200.1 mg/kg. PAH concentrations at this probe location also appear to decrease with depth, with SHSB-16 (50-52 feet) exhibiting nondetectable levels. The next highest total PAH concentrations were reported for samples SHSB-15 (26-28 feet) and SHSB-15 (5-7 feet), which exhibited respective concentrations of 134.09 mg/kg, and 27.50 mg/kg. The remaining samples with detectable PAH compounds included SHSB-15 (16-18 feet) with 0.2 mg/kg total PAH, and SHSB-15 (48-50 feet) with 0.13 mg/kg. As discussed previously, physical evidence of NAPL extended to a maximum depth of 32 feet bgs at SHSB-15.

RCRA Metals and Cyanide

Metals analysis indicates that all RCRA listed metals are within or below typical background ranges for soil in the eastern United States. Total cyanide was undetected in all off-site subsurface soil samples. The ranges of RCRA metal and total cyanide concentrations in the subsurface soil samples are summarized below.

Constituents	**Concentration Range**	**Sample Exhibiting Maximum Concentration**
Arsenic	undetected-1.0	SHSB-16 (6-8 feet)
Barium	1.7-27.3	SHSB-16 (50-52 feet)
Cadmium	undetected -0.29	SHSB-14 (5-7 feet)
Chromium	0.88-8.1	SHSB-16 (50-52 feet)
Lead	0.43-14.9	SHSB-16 (6-8 feet)
Mercury	undetected-0.11	SHSB-14 (5-7 feet)
Selenium	undetected-0.7	SHSB-16 (50-52 feet)

Constituents	Concentration Range	Sample Exhibiting Maximum Concentration
Silver	undetected -0.58	SHSB-14 (5-7 feet)
Total Cyanide	undetected	NA

Total Phenols

Total phenols were not detected in any off-site subsurface soil samples.

4.3.2 Groundwater

Off-site groundwater quality was characterized through the analysis of groundwater samples collected from groundwater probes and newly installed monitoring well clusters. BTEX and PAH results for newly installed monitoring wells are summarized in **Table E-12** and **Table E-13**, respectively. Metals, total cyanide and free cyanide results are presented in **Table E-14** and chlorides and total dissolved solids are presented in **Table E-15**. Free cyanide results are presented in **Table E-16**. BTEX and PAH results for groundwater probe samples are summarized in **Table E-17** and **Table E-18**, respectively. VOC results for selected groundwater probe samples are summarized in **Table E-19**. Analytical results associated with groundwater samples collected from off-site locations are also summarized in **Table F-4**.

Based on the hydrogeologic setting of the site and surrounding area, 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 12 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.

BTEX

Of the 47 groundwater samples collected from off-site locations, 29 samples contained detectable levels of BTEX. In general, the highest total BTEX concentrations were observed in the shallow groundwater zone adjacent to or in close proximity of the site. The highest total BTEX concentration of 7,490 ug/l was observed in sample SHMW-04S. 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 cluster, with a total BTEX concentration of only 5 ug/l observed in SHMW-04I. The next highest total BTEX concentration of 3,250 ug/l was observed in sample SHGP-20 (2-6 feet), also located north of the site. BTEX concentrations also appear to decrease with depth at this location, with SHGP-20 (33-35 feet) exhibiting a total BTEX concentration of only 45 ug/l. The next highest total BTEX concentration of 2,580 ug/l was observed in sample SHGP-19 (3-7 feet). Groundwater probe SHGP-19 was also located north of the site, adjacent to well cluster SHMW-04.

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. The groundwater sample collected from monitoring well SHMW-07, located approximately 40 feet south of the southeastern portion of the site, exhibited a hydrocarbon-like odor and tar/oil blebs. Groundwater samples collected further off-site, such as samples collected from groundwater probes SHGP-24, SHGP-27, SHGP-28, SHGP-29 and SHGP-30, did not exhibit any odors or sheens.

Presented as part of **Section 4.2.3**, **Figures 4-6** through **4-8** summarize total BTEX and total PAH concentration in groundwater collected from on-site and off-site monitoring wells and groundwater probes. **Figure 4-6** depicts the shallow groundwater zone, at or above the peat silt/clay unit, **Figure 4-7** illustrates the intermediate groundwater zone data and **Figure 4-8** represents the groundwater data available for sample depths greater than 45 feet bgs, which is considered the deep groundwater zone.

Figure 4-6 indicates that off-site migration of BTEX is occurring in the shallow groundwater zone to the north and northwest (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, respectively. BTEX compounds were found to be nondetectable in shallow groundwater samples collected from SHGP-29 and SHGP-30, both located approximately 180 feet north of the site boundary. Off-site migration of BTEX in shallow groundwater to the west also appears to be occurring based on data from SHGP-14, SHGP-18, SHGP-22 and monitoring well SHMW-09S. However, the shallow groundwater sample collected from SHGP-28, located approximately 170 feet west 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 and SHGP-23.

Off-site migration of BTEX within the intermediate groundwater zone does not appear to be occurring to the south or west. However, data from SHGP-15 and SHGP-16 indicates some migration to the north. As with shallow groundwater at these locations, intermediate groundwater samples collected from SHGP-29 and SHGP-30 exhibited nondetectable levels of BTEX. 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 47 samples collected from off-site locations, 36 exhibited detectable levels of PAH compounds. As with BTEX, the highest PAH concentrations were observed in samples collected from the shallow groundwater zone and in close proximity to the site. The highest total PAH concentration of 7,211 ug/l was observed in the sample collected from monitoring well SHMW-07S, located approximately 40 feet south of the site. The intermediate groundwater sample collected at this well cluster exhibited nondetectable levels of PAHs, indicating that PAHs are limited to the shallow groundwater zone in this area. The next highest total PAH concentration of 5,878 ug/l was observed at SHGP-14 (3-7 feet), located approximately 80 feet northwest of the site on the north side of Long Island Avenue. The intermediate groundwater sample at this probe location exhibited a total PAH concentration of 605 ug/l.

Figure 4-6, presented in **Section 4.2.3**, 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-22 and SHMW-09S) and to the south (SHGP-23, SHMW-06S and SHMW-7S). However, shallow groundwater samples from the northernmost sample points (SHGP-29 and SHGP-30) and westernmost sample point (SHGP-28) did not exhibit detectable levels of PAHs, indicating that the off-site migration of PAHs in shallow groundwater to the north and west has not occurred beyond these points. Data from SHMW-08S, with a total PAH concentration of 110 ug/l, suggests the potential for a limited easterly migration component.

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, unlike BTEX, there appears to be limited westerly off-site migration of PAHs, as indicated by data from SHGP-22. PAHs were nondetectable in the intermediate groundwater samples collected from SHGP 28, SHGP-29 and SHGP-30 (with the exception of an estimated concentration of 2 ug/l of acenaphthene), indicating off-site migration to the north and west has not likely occurred beyond these points. Based on the 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.

Volatile Organic Compounds

Off-site groundwater samples SHGP-23 (2-6 feet), SHGP-23 (32-34 feet) and SHGP-24 (33-35 feet) were analyzed for 21 volatile organic compounds in addition to BTEX. With the exception of BTEX, all VOCs were found to be nondetectable in these samples.

Metals and Cyanide

Metals analysis of groundwater collected from newly installed monitoring wells downgradient of the site 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. However, several anomalies to this general observation were observed in the groundwater sample collected from SHMW-04I, with lead at 83 ug/l and chromium at 25.6 ug/l.

Eleven out of 14 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 103 ug/l. The remaining samples with detected total cyanide included SHMW-06S (34.3 ug/l) and SHMW-08S (23.8 ug/l). All off-site monitoring wells exhibited free cyanide at nondetectable concentrations or below the CRDL of 20 ug/l.

Total Dissolved Solids and Chloride

As with on-site monitoring well clusters, shallow off-site groundwater samples generally exhibited higher TDS and chloride concentrations as compared to intermediate groundwater samples. The following summarizes the concentration range of each parameter in shallow and intermediate wells.

Shallow Wells	Concentration Range
TDS	140 mg/l (SHMW-05S) to 900 mg/l (SHMW-09S)
Chloride	15 mg/l (SHMW-05S) to 500 mg/l (SHMW-09S)

Intermediate Wells	Concentration Range
TDS	130 mg/l (SHMW-05I) to 170 mg/l (SHMW-09I)
Chloride	23 mg/l (SHMW-05I) to 31 mg/l (SHMW-08I)

Average groundwater concentrations for chloride and TDS in the Upper Glacial aquifer of the South Fork of Long Island are 19 mg/l and 77 mg/l, respectively (USGS Water Supply Paper 2073).

4.3.3 Soil Vapor

A total of 13 soil vapor probe samples were collected in surrounding off-site locations and analyzed for BTEX compounds and naphthalene. **Table E-21** summarizes the results of these soil vapor samples.

The results of the analysis of soil gas identified toluene at concentrations above detection limits in all of the samples. Other compounds detected in these samples include m/p-xylene (detected in 10 of 13 samples), benzene (detected in 7 of 13 samples) and o-xylene and ethylbenzene (both detected in 6 of 13 samples). Naphthalene was found to be nondetectable in all samples. The maximum total BTEX concentration of 154.7 parts per billion by volume (ppbv) (comprised of 91 ppbv toluene, 30 ppbv m/p xylene, 16 ppbv benzene, 8.9 ppbv o-xylene and 8.8 ppbv ethylbenzene) was detected in sample SHSV-13, which was located immediately adjacent to the northeast corner of the site. The next highest total BTEX concentration was 27.2 ppbv (comprised of 12 ppbv toluene, 8.8 ppbv m/p xylene, 2.5 ppbv o-xylene, 2.1 ppbv ethylbenzene and 1.8 ppbv benzene) observed in sample SHSV-14, followed by 18.4 ppbv (comprised of 7.5 ppbv toluene, 6.4 ppbv m/p-xylene, 1.7 ppbv o-xylene and 1.4 ppbv ethylbenzene and benzene) observed in sample SHSV-15. Soil vapor samples SHSV-14 and SHSV-15 were both collected within 25 feet east of the northeastern boundary of the site. The remaining soil vapor samples exhibited total BTEX concentrations of less than 17 ppbv.

5.0 FATE AND TRANSPORT OF CHEMICAL CONSTITUENTS

5.1 Introduction

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

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

Based on the results of the investigation presented in **Section 4.0**, along with current site conditions, the primary affected environmental media include subsurface soil and groundwater. Off-site, the primary affected media is groundwater and, to a lesser degree, subsurface soil. The primary chemical constituents affecting on-site and off-site environmental media are BTEX and PAH compounds. While metals and cyanide were detected in on-site subsurface soil and groundwater, concentrations were generally low with metals being generally within typical background concentrations. Therefore, this discussion focuses on the behavior of BTEX and PAH compounds within the environment, including surface soil, subsurface soil, soil vapor and groundwater.

The basic processes and chemical properties affecting the fate and transport of BTEX and PAH compounds within the environment are described below. **Table 5-1** summarizes the relative degree to which each process affects BTEX compounds, low molecular weight PAHs, mid or transitional weight PAHs and high molecular weight PAHs.

- *Sorption* - Sorption is the process by which chemicals in one phase (i.e., liquid or gas) become associated with a solid phase. The organic carbon partition coefficient (K_{oc}) reflects the propensity of an organic compound to sorb to the organic matter found in soil and, therefore, governs the degree of dissolution and mobility of the compound. Chemicals that sorb onto organic materials in soil or sediment have reduced mobility in groundwater and surface water. Therefore, the greater the K_{oc}, the greater degree of reduction in the mobility of a compound within these media. In general, BTEX and low molecular weight PAH compounds have relatively low to moderate K_{oc} values indicating that these compounds have reduced mobility to some degree. The high molecular weight PAH compounds generally exhibit a significant reduction in their mobility. Therefore, high molecular weight PAHs would not be expected to migrate to any significant degree within most soil regimes. An exception to this general rule is if the PAH compounds are a component of a NAPL, such as tar and oil, which may migrate through the soil media if a sufficient quantity is released to the subsurface environment.

- *Aqueous Solubility* - Aqueous solubility is a measurement of the degree to which a compound will dissolve in water. Solubility controls the amount of a given chemical that can “partition” into the aqueous environment and, therefore, the degree to which it can be transported in groundwater or surface water. The degree of solubility will also have an influence on the ability of a compound to be degraded within an aqueous environment. Compounds having low solubilities generally have low degradation rates due to limited mass being available to chemical or biological processes. In general terms, BTEX compounds have relatively high rates of solubility, low molecular weight PAH compounds such as naphthalene, acenaphthylene, acenaphthene and methylnaphthalene have moderate rates of solubility and higher molecular weight PAH compounds, such as fluoranthene, pyrene and chrysene, have low to very low rates of solubility.

- *Volatilization* - Volatilization is the process of a compound partitioning into a gaseous phase from a liquid or solid phase. The rate of volatilization can be estimated through the use of the vapor pressure of the compound. BTEX compounds have high vapor pressures. As a result, BTEX compounds will readily vaporize into the atmosphere when present in shallow soil and surface water. Additionally, BTEX dissolved in groundwater will have a propensity to vaporize and migrate through unsaturated soil eventually releasing to the atmosphere. Low molecular weight PAHs tend to have low vapor pressures, therefore, while volatilization of these compounds does occur, their rates are negligible when compared to BTEX. High molecular weight PAHs have very low vapor pressures indicating virtually no volatilization under most conditions.

TABLE 5-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION

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

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

Notes

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

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

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

- *Biodegradation* - Biodegradation is a process that has been well documented in reducing concentrations of a wide range of organic compounds within soil, groundwater and surface water. Biological processes which take place in the natural environment can modify and destroy organic compounds at the point of introduction or during their transport within soil, groundwater or surface water. The available body of information suggests that the major agents causing the biological transformations in soil, sediment, surface water, and groundwater are the indigenous microorganisms that inhabit these environments (S.S. Suthersan, 1997). While rates of degradation are highly variable and are directly influenced by the conditions of the environmental media, BTEX compounds are readily degraded under aerobic (oxygen-rich) conditions within groundwater and surface water. However, benzene and ethylbenzene appear to be relatively resistant to degradation under anaerobic (oxygen deprived) conditions (R.C. Bordern, et al., 1995). Low molecular weight PAHs have been shown to naturally degrade at moderate rates under aerobic conditions. However, naphthalene was found to be recalcitrant to degradation under anaerobic conditions (J.E. Landmeyer, et al., 1997). High molecular weight PAHs are generally found to be highly recalcitrant to degradation under most natural aerobic and anaerobic conditions (S.S. Suthersan, 1997).

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

5.2 On-site Source Areas

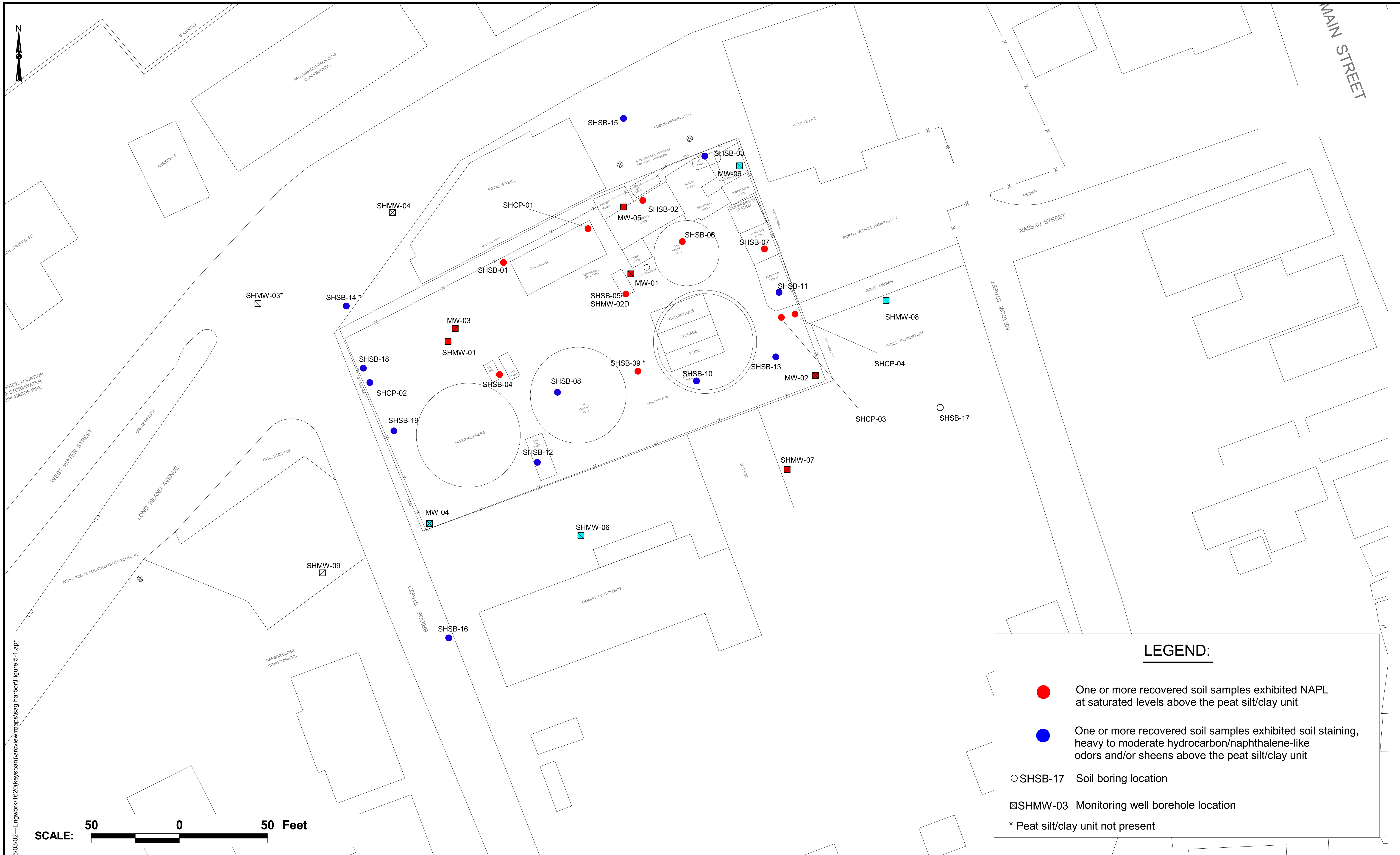
5.2.1 <u>Transport and Fate of NAPL</u>

Low viscosity tar and oil that may have been discharged to the site would have behaved as NAPLs migrating vertically through the soil column under the force of gravity until contacting the water table which is 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. As discussed in **Section 3.2**, the shallow sand unit contains discontinuous fine-sand/silt lenses which may act as "traps" for DNAPLs that penetrate the peat/silt/clay unit. If the DNAPL is not trapped, 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.

Figure 5-1 identifies boring and probe locations where NAPL or indirect evidence of NAPL (i.e., staining, strong to moderate odors, etc.) was observed in one or more subsurface soil samples recovered above the peat/silt/clay unit. As indicated by this figure, 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 from off-site probe SHSB-15 suggests that lateral migration of NAPL to the north of these former MGP structures has occurred above the peat/silt/clay unit. Additionally, soil recovered from off-site wells SHMW-06, SHMW-07 and, to a lesser degree, off-site probe SHSB-16 suggests that lateral migration of NAPL may have occurred to the south as well. 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 exception to this



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

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

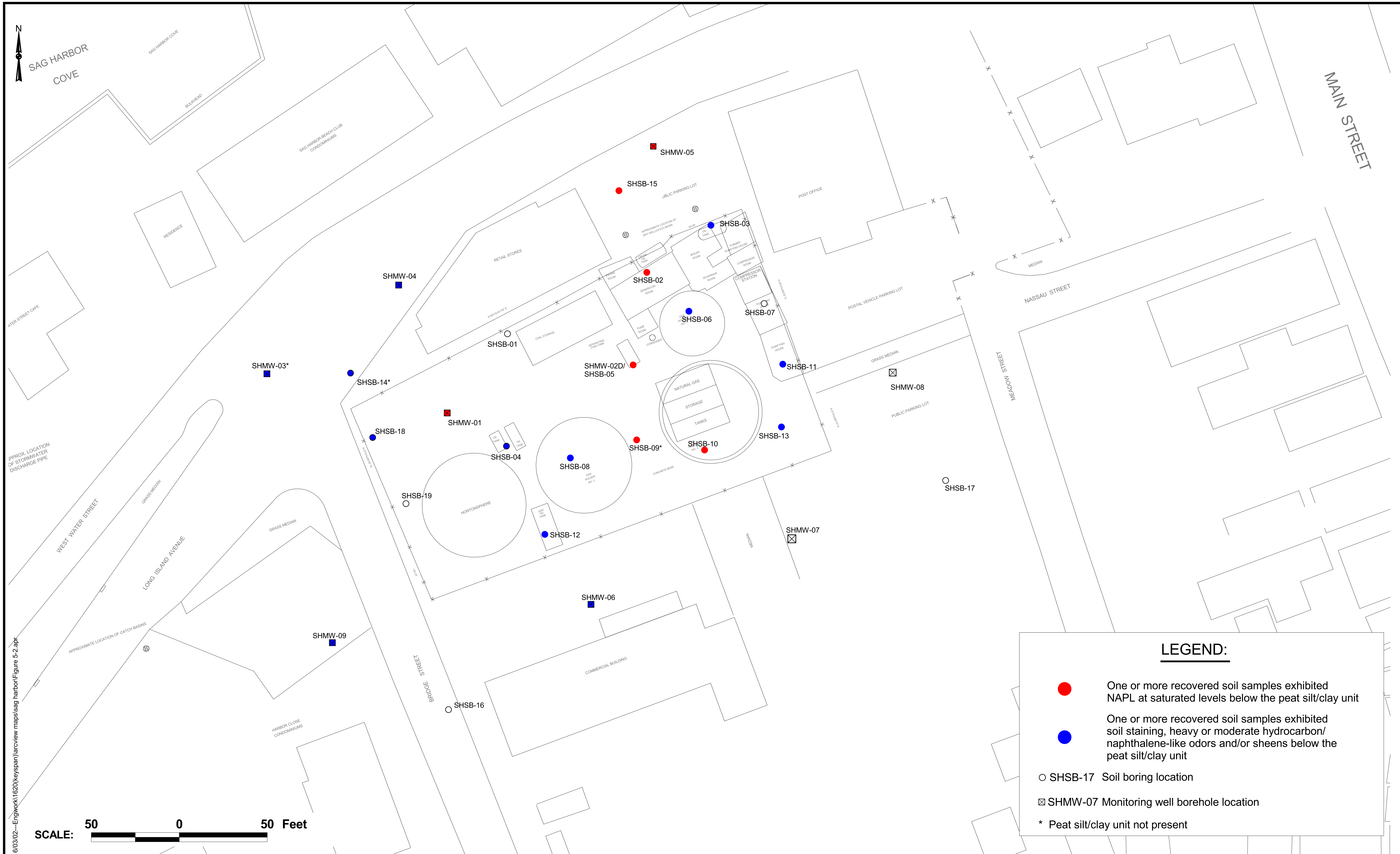
LOCATIONS WHERE EVIDENCE OF NAPL AND SOIL STAINING WAS OBSERVED ABOVE THE PEAT SILT/CLAY UNIT

FIGURE 5-1

was observed during the December 18, 2000 round of water level measurements where less than 0.1-foot of LNAPL was measured at existing well MW-5. This indicates that while NAPL is present above the peat/silt/clay unit, it appears to be currently in an immobile residual saturation state trapped within subsurface soil. Therefore, continued off-site migration of NAPL is unlikely beyond its current extent.

Figure 5-2 identifies locations where direct or indirect evidence of NAPL was observed in soil samples recovered below the peat/silt/clay unit. A comparison of **Figure 5-1** with **Figure 5-2** indicates considerably fewer locations where NAPL was observed 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 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.

As discussed in **Section 4.2.2**, while a number of probes/borings within the eastern portion of the site exhibited evidence of NAPL below the peat/silt/clay unit, it did not extend below a depth of 32 feet with the exception of the boring completed for SHMW-02D. During the installation of SHMW-02D, evidence of NAPL, including 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. This suggests that the fine-sand silt lenses present in the shallow sand unit may act as NAPL "traps" in locations where NAPL penetrates the peat/silt/clay unit.



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

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

LOCATIONS WHERE EVIDENCE OF NAPL AND SOIL STAINING WAS OBSERVED BELOW THE PEAT SILT/CLAY UNIT

FIGURE 5-2

5.2.2 Transport of Chemical Constituents from Source Areas to the Atmosphere

While BTEX, and to a lesser degree, low molecular weight PAH compounds, may volatilize from residual NAPL and associated subsurface soil containing these compounds in a sorbed phase, the majority of the BTEX/PAH source is several feet below grade, as well as being below the water table. As a result, BTEX and PAHs present in source areas are not directly exposed to the atmosphere. Therefore, while some volatile emissions may intermittently discharge to the atmosphere within the site, it does not appear to be a major migration pathway. This is supported by the fact that on-site ambient air results did not identify elevated levels of BTEX or naphthalene.

5.2.3 Transport of Chemical Constituents from Source Areas to Groundwater

While the loss of BTEX and PAH compounds from on-site source areas through volatilization may occur, the primary transport mechanism or migration pathway for these compounds is dissolution through direct infiltration of precipitation, as well as groundwater flow through the soil containing the residual NAPL and sorbed BTEX and PAH compounds. 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.

5.2.4 Weathering of Source Areas

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 had entered the subsurface environment at least 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. As discussed in **Section 4.2.3**, historical on-site groundwater data, while limited, does suggests that BTEX and PAH concentrations within the site have decreased in on-site groundwater over the 5-year period for which data is available.

In summary, the NAPL present in subsurface soil beneath the site represents a highly weathered source of BTEX and PAHs compounds. The overall result of the weathering process is a general decrease in the contribution of BTEX and PAH compounds from on-site source areas to groundwater.

5.3 Off-site Transport Mechanisms

5.3.1 Transport of Chemical Constituents Present in Surface Soil

As discussed in **Section 4.2.1**, PAH compounds were detected in on-site surface soil samples up to a maximum concentration of 950.79 mg/kg total PAHs. However, the site is covered by 6 to 8 inches of crushed stone, effectively eliminating the transport of soil particulates containing sorbed PAH compounds via wind erosion. Due to the periodic flooding of the southwestern portion of the site, there is a potential for off-site migration of site constituents via overland flow of storm water during periods of heavy precipitation and/or coastal flooding.

However, due to the relatively high organic carbon partition coefficient (k_{oc}) of most PAHs and their low aqueous solubility, this does not appear to be a major transport mechanism.

5.3.2 Transport of Chemical Constituents in Groundwater

On-site groundwater containing BTEX and PAHs will migrate off-site in the direction of groundwater flow. As discussed in **Section 3.3**, 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 from the site, with the predominant flow being to the north and northwest and minor flow components to the west and south. An easterly component of flow within the intermediate groundwater zone was also noted in the extreme eastern portion of the site. As a result, off-site migration of groundwater is primarily occurring to the north, northwest, south and west, with an easterly component within the intermediate groundwater zone as well. 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. Based on these conditions, flow of groundwater from on-site source areas to off-site locations is considered an important migration pathway of BTEX and PAH compounds.

The migration of BTEX and PAHs in groundwater will continue in the direction of groundwater flow away from the site until the compounds are attenuated by natural processes occurring in groundwater or until the groundwater discharges to a surface water body. Hydrocarbons, such as BTEX and PAHs, have been shown to degrade in groundwater as the result of biological and geochemical processes which naturally occur in aquifer systems. Research concerning the evolution of hydrocarbon plumes in groundwater indicate:

- Plumes tend to reach a stable shape and size even when a source is present;
- Plumes "shrink" or narrow (frequently longitudinally) when a source is reduced or removed; and

- Studies have shown that natural biodegradation process occurring within aquifers can be responsible for the reduction of 80 to 100 percent of the hydrocarbon mass of a plume within 1 to 1.5 years after source removal. Volatilization and advective dispersion each could account for only 3 to 5 percent of the BTEX losses in the plume studies (P.M. McAllister, C.Y. Chang, 1994; J.P. Salanitro, 1993; Rifai, et al., 1988).

BTEX and PAHs present in groundwater that may discharge to surface water will be rapidly attenuated as the result of the following fate and transport factors:

- Groundwater containing BTEX and PAHs which discharges to surface water will be diluted as the result of mixing with the surface water and other discharging water sources.

- BTEX and PAHs dissolved in surface water will have the propensity to volatilize from the water and undergo biological decay. Studies have shown that BTEX compounds such as benzene readily degrade through natural processes within surface water (L.Y. Wick, et al., 2000).

5.3.3 Transport of Chemical Constituents from Groundwater to Soil Vapor

While volatilization of BTEX and low molecular weight PAH compounds are likely occurring to some degree within off-site areas, the maximum total BTEX concentration in soil vapor of 154.7 ppbv was detected immediately adjacent to the site. Furthermore, soil vapor samples collected at least 50 feet from the site were found to have total BTEX concentrations below 17 ppbv and naphthalene was nondetectable. Therefore, the volatilization of BTEX and naphthalene from groundwater to soil vapor does not appear to be a major transport mechanism.

6.0 FINDINGS

This section summarizes the findings of the Remedial Investigation regarding the nature and extent of chemical constituents present within and adjacent to the Sag Harbor former MGP site, as well as the findings of the Qualitative Human Exposure Assessment and the Fish and Wildlife Resources Impact Analysis (FWRIA). Where appropriate, additional investigation activities are recommended to further delineate the nature and extent of chemical constituents. **Appendix G** presents the detailed findings of the Qualitative Human Exposure Assessment and the FWRIA.

6.1 On-site Field Investigation

<u>Remedial Investigation</u>

The following discussion presents a summary of the findings of the field investigation conducted on-site.

Surface Soil

- 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. This was characterized by the presence of naphthalene/hydrocarbon-like odors, staining, sheens as well as tar/oil droplets or blebs. 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 source areas where the peat silt/clay unit appears to be relatively thin or absent, such as near the former Tar Separating Tank and former Gas Holder No. 3, evidence of NAPL extends to a depth of 32 feet bgs. In addition, soil collected from monitoring well borehole SHMW-02, completed adjacent to the former Tar Separating Tank, also exhibited evidence of NAPL 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. Total BTEX and PAH concentrations do not exceed 0.2 mg/kg and 31.2 mg/kg, respectively, below a depth of 32 feet.

- Based on the BTEX/PAH soil data, evidence of NAPL in recovered soil samples, and the direction of groundwater flow, the following former MGP structures and associated subsurface soil are considered source areas of BTEX and PAH compounds:

  - 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. Thirty-six of the 48 subsurface soil samples selected for analysis exhibited nondetectable levels of total cyanide. The highest total cyanide concentration, at 4.8 mg/kg, was detected in sample SHSB-10 (2-4 feet) located within the area of former Gas Holder No. 3.

- Total phenols were not detected in any of the 48 subsurface soil samples collected from the site.

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.

- Based on measurements obtained during the investigation, only shallow groundwater monitoring well MW-05, located in the northeastern portion of the site, contained a measurable layer of NAPL (i.e., less than 0.1 foot). A number of samples collected from groundwater probes exhibited evidence of NAPL, such as sheens, odors, tar/oil blebs, etc. These locations included: SHGP-01 (1-5 feet), located on the northern property boundary; SHGP-02 (32-34 feet), SHGP-03 (2-6 feet), SHGP-05 (30-32 feet), SHGP-06 (0.5 to 4.5 feet) and SHGP-10 (30-32 feet), all located within the eastern portion of the site; SHGP-04 (0-4 feet), located in the central portion of the site; and SHGP-25 (2-6 feet), located in the northwestern corner of the site.

- 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, the maximum total BTEX concentration of 23,900 ug/l was observed at SHGP-02 (30-32 feet) and the maximum total PAH concentration of 2,518,000 ug/l was observed at SHGP-05 (30-32 feet). Both of these groundwater samples exhibited evidence of NAPL and were collected from the northeastern portion of the site below the peat silt/clay unit. However, groundwater samples collected from deeper intervals at SHGP-02 and SHGP-05 indicate that BTEX and PAH concentrations decrease with increasing depth at both locations. For example, sample SHGP-02 (58-62 feet), exhibited total BTEX and PAH concentrations of 18 ug/l and 43 ug/l, respectively, while SHGP-05 (60-62 feet) exhibited total BTEX and PAH concentrations of 13 ug/l and 627 ug/l, respectively.

- 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 with a maximum total cyanide concentration of 92.2 ug/l observed at shallow monitoring well MW-02 located in the southeastern corner of the site.

Ambient Air

- A total of two ambient air samples were collected from on-site locations. BTEX analysis of the samples only detected only toluene at a maximum of 0.91 ppbv. Naphthalene was not detected in the samples.

<u>Qualitative Human Exposure Assessment</u>

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).

Current Scenarios

Current human populations considered in the exposure assessment include on-site adolescent trespassers and adult on-site KeySpan workers. The perimeter fencing is in good condition and gates are maintained closed and locked. A trespassing scenario was included because the property could be accessed, with difficulty, over the fence. 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 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 Scenarios

Future human populations considered in this exposure assessment 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 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. 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, 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.

Potential on-site 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.

A summary of the potential exposure pathways, by population and medium, is presented in Table 2-2 of Appendix G (see Appendix G for the complete Qualitative Human Exposure Assessment).

Fish and Wildlife Resources Impact Analysis Findings

Following Appendix 1C Decision Key in the NYSDEC's FWRIA guidance, a FWRIA was deemed required. Although this analysis indicated that several chemicals of potential ecological concern (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 COPECs is minimal for several reasons. Exposure frequency, chemical concentration (especially within six inches of the ground surface), mechanism of exposure, and duration of exposure determines the risk for impact. 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.

Recommendations

Based on the findings described above, it is recommended that the following additional on-site investigation work be completed as part of a Supplemental Remedial Investigation:

- Additional soil borings are recommended in the vicinity of monitoring well borehole SHMW-02, adjacent to the former Tar Separating Tank, to further delineate the extent of BTEX and PAH compounds, as well as NAPL in subsurface soil at this location.

- In order to evaluate whether a freshwater/saline interface ("salinity line") exists beneath the site, it is recommended that three conductivity/resistivity probes be advanced on-site to a depth up to 100 feet bgs.

6.2 Off-site Field Investigation

Remedial Investigation

The following discussion presents a summary of the findings of the field investigation conducted off-site.

Subsurface Soil

- Evidence of NAPL was observed in off-site soil probes SHSB-14 and SHSB-16 to a depth of approximately 12 feet bgs. SHSB-14 was located adjacent to the northwest corner of the site. SHSB-16 was located approximately 65 feet south of the southwestern corner of the site. At off-site soil probe SHSB-15, located approximately 35 feet north of the northeastern site boundary, recovered soil exhibited evidence of NAPL to a depth of 32 feet bgs.

- BTEX compounds were detected in four of nine subsurface soil samples collected from off-site locations with a maximum total BTEX concentration of 64 mg/kg detected in SHSB-14 (5-7 feet), adjacent to the northwestern corner of the site. Six out of nine samples exhibited detectable levels of PAHs with a maximum total PAH concentration of 738.7 mg/kg also detected in SHSB-14 (5-7 feet).

- Based on BTEX/PAH data and evidence of NAPL observed in on-site and off-site samples, subsurface soil containing levels of BTEX and PAHs appears to extend beyond the northern and southern site boundaries. Analytical sampling data for subsurface soil to the west of the site is limited.

- Metals in off-site subsurface soil samples appear to be at or below typical background concentrations. Analytical results indicate total cyanide concentrations are below the CRDL of 1.0 mg/kg in all samples. Total phenols were not detected in any samples.

Groundwater

- Off-site groundwater to the north and northwest of the site is tidally influenced and generally flows in a northwesterly direction towards Sag Harbor Cove. Groundwater south of the site appears to be less tidally influenced and flows in a south to southwesterly direction. An easterly component of flow within the intermediate zone also exists to the east of the site.

- Off-site groundwater samples collected in close proximity of the site exhibited hydrocarbon-like odors and sheens, but measurable separate phase NAPLs were not observed. The groundwater sample collected from shallow well SHMW-07S, located approximately 40 feet south of the site, exhibited hydrocarbon odors, sheens and oil blebs.

- Although evidence of NAPL was observed in several on-site and off-site subsurface soil samples, monitoring wells exhibited little evidence of any measurable separate-phase NAPL, with the exception of on-site shallow well MW-5 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.

- The highest BTEX and PAH concentrations were generally detected in off-site groundwater samples collected above the peat silt/clay unit in close proximity to the site. The maximum total BTEX concentration of 7,490 ug/l was observed in shallow well SHMW-04S located approximately 50 feet north of the site. The maximum total PAH concentration of 7,211 ug/l was observed in shallow well SHMW-07S, located approximately 40 feet south of the site.

- Off-site migration of BTEX and PAHs is occurring in shallow groundwater to the north and northwest of the site above the peat silt/clay unit. This is supported by data from groundwater probes SHGP-14, SHGP-15, SHGP-18 and SHGP-20 and monitoring well SHMW-04S. Off-site migration of BTEX and PAHs appears to be occurring to the west based on data from SHGP-22 and SHMW-09S, as well as to the south as indicated by data from SHGP-23, SHMW-06S and SHMW-07S. However, data from the northernmost off-site groundwater probes SHGP-29 and SHGP-30 indicates BTEX and PAHs are not present at these locations, with the exception of an estimated concentration of 2 ug/l of acenaphthene in the intermediate zone sample collected from SHGP-30. Additionally, data from SHGP-28 located approximately 165 feet west of the site indicates BTEX and PAHs are not present in groundwater at this location.

- Off-site migration of BTEX and PAHs appears to be occurring within the intermediate groundwater zone below the peat silt/clay unit to a depth of 35 feet bgs. However, migration appears to be limited primarily to areas immediately to the north of the site, and concentrations are generally lower as compared to shallow groundwater. As with shallow groundwater, intermediate groundwater samples collected from SHGP-29 and SHGP-30 exhibited nondetectable levels of BTEX and PAHs (with the exception of an estimated concentration of 2 ug/l of acenaphthene in SHGP-30). While BTEX does not appear to be present, some off-site migration of PAHs does appear to be occurring in intermediate zone groundwater to the west as indicated by data from SHGP-22. However, SHMW-09I, located immediately to the west of this probe, exhibited a total PAH of only 3 ug/l.

- Based on groundwater data collected below 35 feet bgs, off-site migration of BTEX and PAHs in the deep groundwater zone does not appear to be occurring.

- The nearest active public supply well field is located over 1 mile to the southeast of the site. Based on its location, and depth of the screened zone, there is virtually no potential for site-related constituents to influence the water quality of this well field.

- A review of NYSDEC-registered well records indicates the presence of one privately owned water supply well located approximately 500 feet southwest of the site. The potential for site-related constituents to influence the water quality of this well is remote.

- Metal concentrations in groundwater samples collected from off-site monitoring wells are generally within concentration ranges considered typical of ambient groundwater quality. 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.

Soil Vapor

- The maximum total BTEX concentration of 154.7 ppbv was observed in soil probe SHSV-13, located immediately adjacent to the northeast corner of the site. However, off-site soil vapor samples collected beyond 50 feet from the site were found to have total BTEX concentrations not exceeding 17 ppbv. Naphthalene was not detected in any of the 13 soil vapor samples collected from off-site locations.

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. It should be noted that additional off-site investigation work to further define the limits of any off-site migration of BTEX and PAHs is being conducted at the site (refer to Recommendations below). Analytical results from the supplemental investigation may result in refinement of potential exposure scenarios associated with off-site human populations.

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 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 underneath structures was assumed to occur for these receptor 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 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.

A private well survey is planned in the vicinity of the Sag Harbor site (refer to Recommendations below). The survey area was identified by agreement between NYSDEC and KeySpan on April 3, 2002. Although it is unlikely that individuals utilizing a private well as a water supply will be identified, potential exposure to groundwater via dermal contact, ingestion, and inhalation of volatiles while showering (for off-site residents) is included here as potential exposure pathways pending results of the survey. 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. The potential for this exposure will be refined upon receipt of analytical results associated with the supplemental investigation.

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.

A summary of the potential exposure pathways, by population and medium, is presented in Table 2-2 of Appendix G (see Appendix G for the complete Qualitative Human Exposure Assessment).

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. Potentially site-related impacts on the Peconic Estuary are unlikely. Data collected under the additional site investigation recommended below will be evaluated to aid in determining if remedial activities specific to biota in the Peconic Estuary are warranted.

Recommendations

Based on the findings described above, it is recommended that the following additional off-site investigation work be completed as part of a Supplemental Remedial Investigation:

- Additional soil probes are recommended to the north, west and south of the site to further define the off-site extent of BTEX and PAH compounds in subsurface soil.

- Additional groundwater probes and/or monitoring wells are recommended to the north, east, west and south of the site to further define the off-site extent of BTEX and PAH compounds in shallow and intermediate groundwater. Although it is unlikely that site-related constituents have influenced the water quality of the privately owned water supply well located approximately 500 feet southwest of the site, it is recommended that the additional groundwater sampling include areas southwest of the site in order to further define off-site migration of site-related constituents in this area.

- Although properties within the vicinity of the site are provided with public water, it is possible that some properties may also have private unregistered wells that may be used for irrigation or other purposes. Therefore, it is recommended that a private well survey be conducted via mailing questionnaires and/or door-to-door interviews at properties within close proximity of the site in an effort to identify any unregistered private wells.

- It is recommended that indoor ambient air sampling be conducted at structures adjacent to the site to confirm that site related constituents have not impacted air quality in these locations.

- Surface water, pore water and sediment sampling is recommended in Sag Harbor Cove in order to evaluate whether site-related constituents have impacted this surface water body.

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.

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

DATABASE SEARCH REPORTS

The EDR-Radius Map
with GeoCheck®

SAG Harbor
Bridge+W Water
Sag Harbor, NY 11963

Inquiry Number: 297846.6s

September 29, 1998

EDR® Environmental Data Resources, Inc.
an edr™ company

The Source
For Environmental
Risk Management
Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

SECTION | **PAGE**

Executive Summary ES1
Topographic Map 2
GeoCheck Summary 3
Overview Map 5
Detail Map 6
Map Summary - All Sites 7
Map Summary - Sites with higher or the same elevation as the Target Property 8
Map Findings 9
Orphan Summary 21

APPENDICES

GeoCheck Version 2.1 .... A1
Government Records Searched / Data Currency Tracking Addendum A6

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-97. Search distances are per ASTM standard or custom distances requested by the user.

The address of the subject property for which the search was intended is:

BRIDGE+W WATER
SAG HARBOR, NY 11963

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-97 search radius around the subject property for the following Databases:

NPL: National Priority List
Delisted NPL: NPL Deletions
RCRIS-TSD: Resource Conservation and Recovery Information System
CERC-NFRAP: Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS: Corrective Action Report
SWF/LF: Facility Register
RAATS: RCRA Administrative Action Tracking System
HMIRS: Hazardous Materials Information Reporting System
PADS: PCB Activity Database System
ERNS: Emergency Response Notification System
TRIS: Toxic Chemical Release Inventory System
NPL Lien: NPL Liens
TSCA: Toxic Substances Control Act
MLTS: Material Licensing Tracking System
CBS UST: Chemical Bulk Storage (CBS) Database
CBS AST: Chemical Bulk Storage (CBS) Database
MOSF UST: Major Oil Storage Facilities Database
MOSF AST: Major Oil Storage Facilities Database
HSWDS: Hazardous Substance Waste Disposal Site Inventory
ROD: ROD
CONSENT: Superfund (CERCLA) Consent Decrees

Unmapped (orphan) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

The subject property was not listed in any of the databases searched by EDR.

EXECUTIVE SUMMARY

Surrounding Properties:

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the subject property includes a tolerance of -10 feet. Sites with an elevation equal to or higher than the subject property have been differentiated below from sites with an elevation lower than the subject property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already by listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Conservation's Inactive Hazardous waste Disposal Sites in New York State.

A review of the SHWS list, as provided by EDR, has revealed that there is 1 SHWS site within approximately 1 Mile of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
BULOVA WATCH FACTORY	WASHINGTON STREET	1/2 - 1 SE	16	19

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, persuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 06/15/1998 has revealed that there is 1 CERCLIS site within approximately 0.5 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SAG HARBOR BRIDGE STREET	***BRDIGE STREET***	***0 - 1/8 S***	***5***	***10***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Conservation's Spills Information Database.

A review of the LUST list, as provided by EDR, and dated 04/01/1998 has revealed that there are 5 LUST sites within approximately 0.5 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
WHALES MARINA	W WATER ST	0 - 1/8 W	A2	9
US POSTAL SERVICE	LONG ISLAND AVENUE	0 - 1/8 ENE	B6	11
DYNAMIC DUCE	8 BAY ST	0 - 1/8 NE	B7	11
EMPORIUM HARDWARE STORE	***MAIN STREET***	***1/8 - 1/4 SE***	***10***	***14***
ST.ANDREW'S CHURCH	DIVISION STREET	1/4 - 1/2 ESE	12	16

EXECUTIVE SUMMARY

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database

A review of the UST list, as provided by EDR, and dated 07/01/1998 has revealed that there is 1 UST site within approximately 0.25 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MALLOY SAG HARBOR COVE WEST MA	*50 W WATER ST*	*1/8 - 1/4 SW*	*9*	*13*

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database.

A review of the AST list, as provided by EDR, and dated 04/01/1998 has revealed that there is 1 AST site within approximately 0.25 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MALLOY SAG HARBOR COVE WEST MA	*50 W WATER ST*	*1/8 - 1/4 SW*	*9*	*13*

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 01/01/1998 has revealed that there are 2 RCRIS-SQG sites within approximately 0.25 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHELSEA CROSSINGS 1 HOUR PHOTO	*11 W WATER ST & LONG IS*	*0 - 1/8 NE*	*4*	*10*
PHOTOGRAPHIC EAST LTD	BAY ST & RTE 114 SE COR	0 - 1/8 NE	8	12

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-LQG list, as provided by EDR, and dated 01/01/1998 has revealed that there is 1 RCRIS-LQG site within approximately 0.25 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
LILCO - SAG HARBOR GAS PLANT	BRIDGE ST S OF LONG ISL	0 - 1/8 E	A1	9

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/01/1997 has revealed that there are 2 FINDS sites within approximately 0.25 Miles of the subject property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CHELSEA CROSSINGS 1 HOUR PHOTO	*11 W WATER ST & LONG IS*	*0 - 1/8 NE*	*4*	*10*
SAG HARBOR BRIDGE STREET	*BRDIGE STREET*	*0 - 1/8 S*	*5*	*10*

SPILLS: The Spills Information Database from The Department of Environmental Conservation.

A review of the NY Spills list, as provided by EDR, has revealed that there are 5 NY Spills sites within approximately 0.5 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
EMPORIUM HARDWARE STORE	***MAIN STREET***	***1/8 - 1/4 SE***	***10***	***14***
LILCO	MAIN STREET/SPRING STRE	1/8 - 1/4 SE	11	15
GIFFORDS	67 BAY ST	1/4 - 1/2 E	C13	17
SUSAN ROTHENBERG/MOBIL OI	BAY / BURKE STREET	1/4 - 1/2 E	C14	18
SUSPECT MOTOR SAUNDRA D	BAY ST / BURK STREET	1/4 - 1/2 E	15	18

(Coal Gas) Former Manufactured gas (Coal Gas) Sites:
The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative

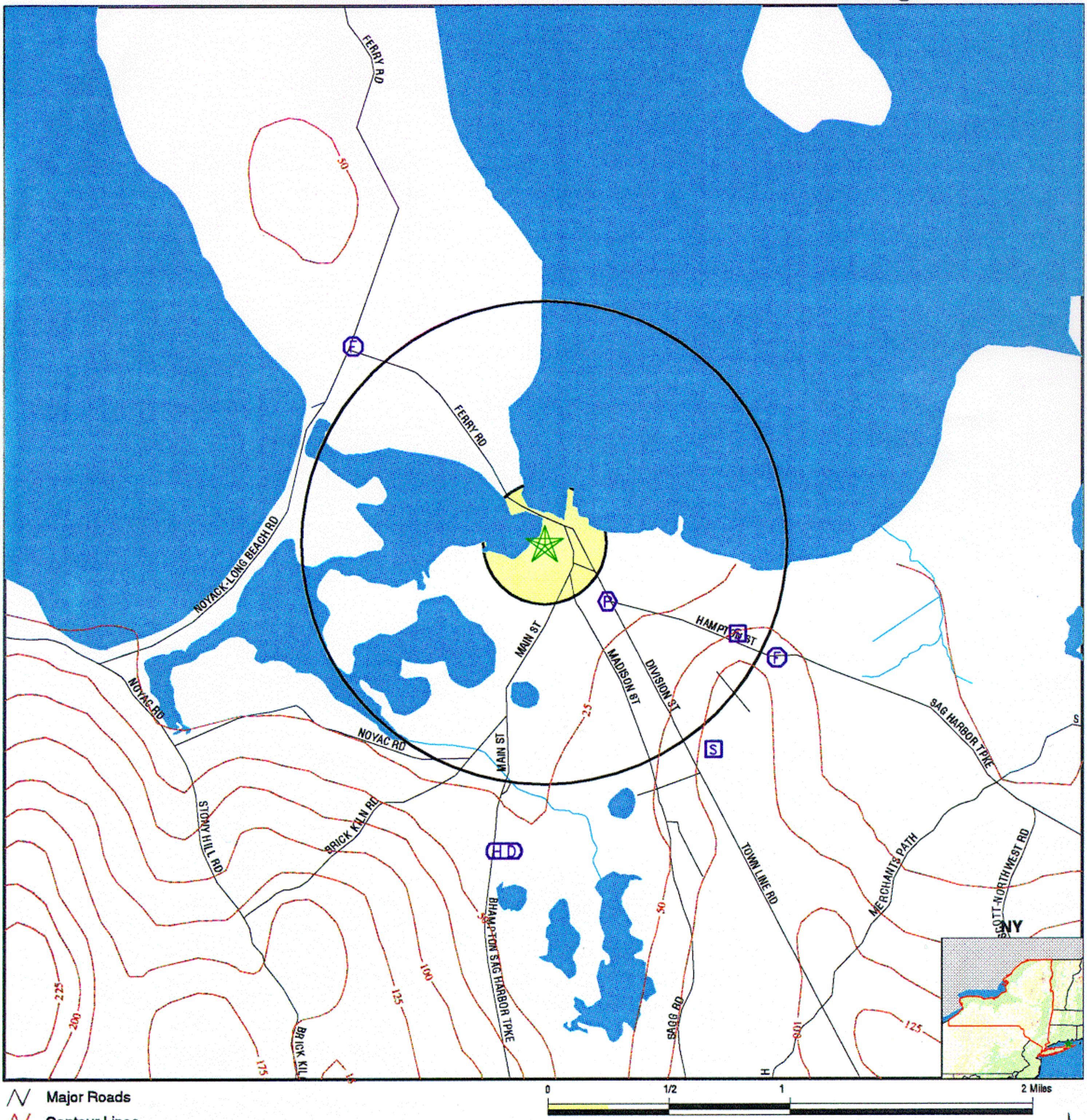
A review of the Coal Gas list, as provided by EDR, has revealed that there is 1 Coal Gas site within approximately 1 Mile of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
UNITED GAS IMPROVEMENT	BRIDGE ST.	0 - 1/8 ENE	A3	10

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
ROWE INDUSTRIES, INC.	SHWS
HOMEOWNER ON SITE	LUST
LI FISHERMAN	LUST
GIFFORDS	LUST
VESSEL AUGUST MOON	LUST,NY Spills
MANDORIAN VESSEL	LUST,NY Spills
SAG HARBOR INDUSTRIES INC	UST,LUST,NY Spills AST
SAG HARBOR S/S GULF	UST,AST
BULOVA WATCH	UST
NEW YORK TELEPHONE CO	UST
SAG HARBOR FIRE DEPT	UST
SAG HARBOR HWY DEPT	UST,AST
ST ANDREW R C CHURCH	UST
KING & THOMASSON BUS CO INC	UST,AST
JOHN JERMAIN MEMORIAL LIBRARY	UST
A T & T COMMUNICATIONS	UST,AST
WHALER'S MARINA INC.	UST
SAG HARBOR CENTRAL GARAGE	AST
MOBIL OIL SAG HARBOR TERMINAL	RCRIS-SQG,FINDS,NY Spills
KEENERS EASTEND LITHO INC.	RCRIS-SQG,FINDS
EAST END LITHOGRAPH CORP	RCRIS-SQG,FINDS
PIERSON HIGH SCH	RCRIS-SQG,FINDS
VANKOVICS LTD DBA HARBOR HEIGHTS	RCRIS-SQG,FINDS
MORBECK CAMERA DBA CAMERA CONCEPTS #5	RCRIS-SQG,FINDS
SAG HARBOR INDUSTRIES INC	RCRIS-SQG,FINDS,CONSENT
PAST TENSE LTD DBA FISHERS	FINDS,RCRIS-LQG
LILCO - SAG HARBOR GAS PLT	FINDS
SAG HARBOR (V) WWTP	FINDS
SAG HARBOR SVC STA	FINDS
SAG HARBOR SEWAGE TREATME	NY Spills
VILLAGE OF SAG HARBOR	NY Spills
VILLAGE SAG HARBOR HWY YD	NY Spills
HARBOR HEIGHTS S/S	NY Spills
HARBOR HEIGHTS SERVICE	NY Spills
LILCO, SAG HARBOR GAS PLANT	HSWDS

TOPOGRAPHIC MAP - 297846.6s - Dvirka & Bartilucci Cons. Eng.



- Major Roads
- Contour Lines
- Waterways
- Earthquake epicenter, Richter 5 or greater
- Closest Federal Well in quadrant
- Closest State Well in quadrant
- Closest Public Water Supply Well
- Closest Hydrogeological Data

TARGET PROPERTY:	SAG Harbor	CUSTOMER:	Dvirka & Bartilucci Cons. Eng.
ADDRESS:	Bridge+W Water	CONTACT:	Mr. Robert Gantzer
CITY/STATE/ZIP:	Sag Harbor NY 11963	INQUIRY #:	297846.6s
LAT/LONG:	41.0013 / 72.2980	DATE:	September 29, 1998 8:05 pm

GEOCHECK VERSION 2.1
SUMMARY

TARGET PROPERTY COORDINATES

Latitude (North):	41.001308 - 41˚ 0' 4.7"
Longitude (West):	72.298027 - 72˚ 17' 52.9"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	2897630.0
UTM Y (Meters):	36337856.0

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2441072-A3 GREENPORT, NY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Qp
Era:	Cenozoic
System:	Quaternary
Series:	Pleistocene

ROCK STRATIGRAPHIC UNIT†

Category: Stratifed Sequence

GROUNDWATER FLOW INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, including well data collected on nearby properties, regional groundwater flow information (from deep aquifers), or surface topography.‡

AQUIFLOW™** Search Radius: 2.000 Miles

MAP ID	DISTANCE FROM TP	DIRECTION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported			

General Topographic Gradient at Target Property: General NNW
General Hydrogeologic Gradient at Target Property: No hydrogeologic data available.
Site-Specific Hydrogeological Data*:

Search Radius:	2.0 miles
Location Relative to TP:	1 - 2 Miles South
Site Name:	Rowe Industries Gnd Water Cont
Site EPA ID Number:	NYD981486954
Surficial Aquifer Flow Dir.:	NW TOWARD LIGONEE BROOK AND SAG HARBOR COVE.
Measured Depth to Water:	20 feet to 30 feet.
Hydraulic Connection:	Very small upward and downward gradients have been detected between the surficial and lower aquifers at the site. No major laterally-continuous beds or clay layers underlie the site above a depth of 110 feet.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information based on site-specific subsurface investigations is documented in the CERCLIS investigation report(s)

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE

 All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.
† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).
‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.
** EDR AQUIFLOW™ information System of hydrogeologically determined groundwater flow directions at specific locations. See the date pages at the end of this report for a complete description.

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE
Northern	1 - 2 Miles	Not Reported	Not Reported
Eastern	1 - 2 Miles	Not Reported	Not Reported
Southern	>2 Miles	Not Reported	Not Reported

STATE DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP
Eastern	1/2 - 1 Mile
Southern	1 - 2 Miles

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest PWS.
NOTE: PWS System location is not always the same as well location.

PWS Name: ROYAL OAKS MOTEL
EAST HAMPTON, NY 11937
Location Relative to TP: 1/4 - 1/2 Mile East
PWS currently has or has had major violation(s): Yes

AREA RADON INFORMATION

EPA Radon Zone for SUFFOLK County: 3

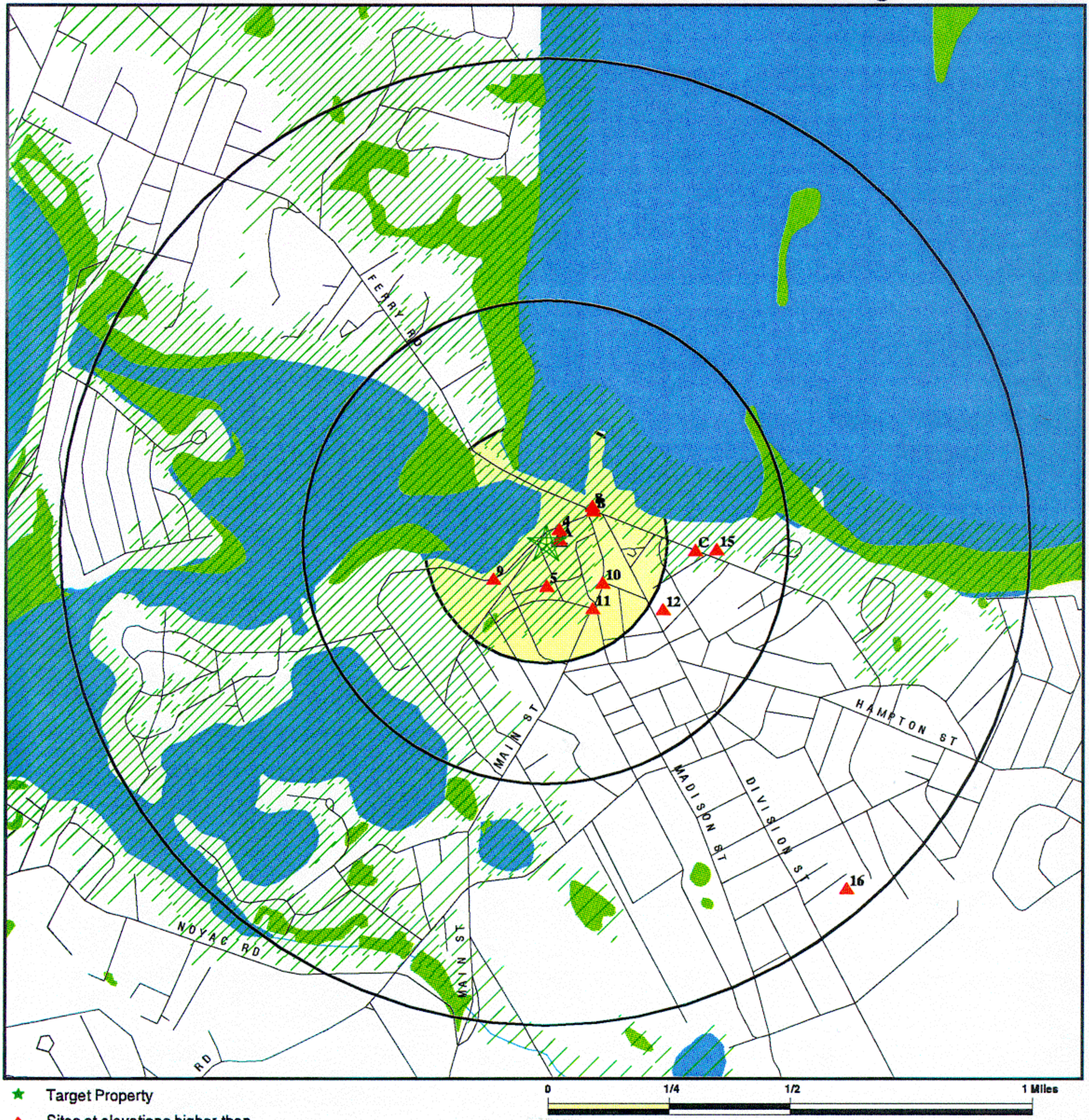
Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

SUFFOLK COUNTY, NY

Number of sites tested: 183

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.670 pCi/L	100%	0%	0%
Basement	1.010 pCi/L	98%	2%	0%

OVERVIEW MAP - 297846.6s - Dvirka & Bartilucci Cons. Eng.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites (if requested)
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Wetlands per National Wetlands Inventory (1994)

TARGET PROPERTY:	SAG Harbor	CUSTOMER:	Dvirka & Bartilucci Cons. Eng.
ADDRESS:	Bridge+W Water	CONTACT:	Mr. Robert Gantzer
CITY/STATE/ZIP:	Sag Harbor NY 11963	INQUIRY #:	297846.6s
LAT/LONG:	41.0013 / 72.2980	DATE:	September 29, 1998 8:01 pm

DETAIL MAP - 297846.6s - Dvirka & Bartilucci Cons. Eng.

0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites (if requested)
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Wetlands per National Wetlands Inventory (1994)

TARGET PROPERTY:	SAG Harbor	CUSTOMER:	Dvirka & Bartilucci Cons. Eng.
ADDRESS:	Bridge+W Water	CONTACT:	Mr. Robert Gantzer
CITY/STATE/ZIP:	Sag Harbor NY 11963	INQUIRY #:	297846.6s
LAT/LONG:	41.0013 / 72.2980	DATE:	September 29, 1998 8:03 pm

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		0.250	0	0	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
State Haz. Waste		1.000	0	0	0	1	NR	1
CERCLIS		0.500	1	0	0	NR	NR	1
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	3	1	1	NR	NR	5
UST		0.250	0	1	NR	NR	NR	1
AST		0.250	0	1	NR	NR	NR	1
RAATS		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	2	0	NR	NR	NR	2
RCRIS Lg. Quan. Gen.		0.250	1	0	NR	NR	NR	1
HMIRS		0.250	0	0	NR	NR	NR	0
PADS		0.250	0	0	NR	NR	NR	0
ERNS		0.250	0	0	NR	NR	NR	0
FINDS		0.250	2	0	NR	NR	NR	2
TRIS		0.250	0	0	NR	NR	NR	0
NPL Liens		0.250	0	0	NR	NR	NR	0
TSCA		0.250	0	0	NR	NR	NR	0
MLTS		0.250	0	0	NR	NR	NR	0
NY Spills		0.500	0	2	3	NR	NR	5
CBS UST		0.250	0	0	NR	NR	NR	0
CBS AST		0.250	0	0	NR	NR	NR	0
MOSF UST		0.500	0	0	0	NR	NR	0
MOSF AST		0.500	0	0	0	NR	NR	0
HSWDS		0.500	0	0	0	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Coal Gas		1.000	1	0	0	0	NR	1

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		0.250	0	0	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
State Haz. Waste		1.000	0	0	0	1	NR	1
CERCLIS		0.500	1	0	0	NR	NR	1
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	3	1	1	NR	NR	5
UST		0.250	0	1	NR	NR	NR	1
AST		0.250	0	1	NR	NR	NR	1
RAATS		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	2	0	NR	NR	NR	2
RCRIS Lg. Quan. Gen.		0.250	1	0	NR	NR	NR	1
HMIRS		0.250	0	0	NR	NR	NR	0
PADS		0.250	0	0	NR	NR	NR	0
ERNS		0.250	0	0	NR	NR	NR	0
FINDS		0.250	2	0	NR	NR	NR	2
TRIS		0.250	0	0	NR	NR	NR	0
NPL Liens		0.250	0	0	NR	NR	NR	0
TSCA		0.250	0	0	NR	NR	NR	0
MLTS		0.250	0	0	NR	NR	NR	0
NY Spills		0.500	0	2	3	NR	NR	5
CBS UST		0.250	0	0	NR	NR	NR	0
CBS AST		0.250	0	0	NR	NR	NR	0
MOSF UST		0.500	0	0	0	NR	NR	0
MOSF AST		0.500	0	0	0	NR	NR	0
HSWDS		0.500	0	0	0	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Coal Gas		1.000	1	0	0	0	NR	1

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
A1 East < 1/8 Higher	**LILCO - SAG HARBOR GAS PLANT BRIDGE ST S OF LONG ISLAND AVE SAG HARBOR, NY 11963**	**RCRIS-LQG**	**1001028518 NYR000007500**

RCRIS:

Owner: LONG ISLAND LIGHTING CO
(516) 391-6133

Contact: ROBERT TEETZ
(516) 391-6133

Record Date: 06/28/1995

Classification: Large Quantity Generator

Used Oil Recyc: No

Violation Status: No violations found

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
A2 West < 1/8 Higher	**WHALES MARINA W WATER ST SAG HARBOR, NY**	**LUST**	**S100148845 N/A**

LUST:

Spill Number: 8701533
Facility Contact: Not reported
Investigator: O'NEILL
Caller Name: Not reported
Caller Phone: Not reported
Notifier Name: Not reported
Notifier Phone: Not reported
Spiller Contact: Not reported
Spiller: WHALERS MARINA
Address W WATER ST
SAG HABOR, NY
Spill Class: Not reported
Spill Closed Dt: 12/05/1988
Spill Cause: Tank Test Failure
Water Affected: Not reported
Spill Notifier: Tank Tester
Spill Date: 05/26/1987 09:00
Cleanup Ceased: 12/05/1988
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: True
Spill Record Last Update: 12/05/1988
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 05/28/1987
Date Region Sent Summary to Central Office: Not reported
PBS Number: Not reported
Test Method: Not reported
Capacity (Gal): 0
Material: GASOLINE
Material Class: Petroleum
Unknwn Quantity: False
Quantity Spilled: 0

Region of Spill: 1
Facility Tele: Not reported
SWIS: 47
Caller Agency: Not reported
Caller Extension: Not reported
Notifier Agency: Not reported
Notifier Extension: Not reported
Spiller Phone: (516) 725-4332
Resource Affected: Groundwater
Spill Source: Other Commercial/Industrial
PBS Number: Not reported
Reported to Dept: 05/26/1987 11:15
Tank Number: Not reported
Leak Rate: 0.00
Gross Leak/Fail: Not reported
Unk Qt Recovered: False
Quant Recovered: 0

WHALES MARINA (Continued) **S100148845**

Quantity Units: Gallons
DEC Remarks: / / : G&M DEGE TESTER. 12/05/88: TANK WAS REMOVED 6/4/87. 3 YDS OF CONT SOIL WAS STOCKPILED. SPILL CAN BE CLOSED PENDING DISPOSAL OF SOIL.
Caller Remarks: 2K REG LEADED FAILED/UNTESTABLE

A3
ENE
< 1/8
Higher

UNITED GAS IMPROVEMENT
BRIDGE ST.
SAG HARBOR, NY 11960

Coal Gas **G000000421**
N/A

COAL GAS SITE DESCRIPTION:
Site is northwest of the intersection of Nassau and Meadow. Site is east of Bridge and south of the railroad tracks. Site later called Long Island Lighting Co.

4
NE
< 1/8
Higher

CHELSEA CROSSINGS 1 HOUR PHOTO
11 W WATER ST & LONG ISLAND
SAG HARBOR, NY 11962

RCRIS-SQG **1000791404**
FINDS **NYD987029139**

RCRIS:
Owner: RALPH & LORRAINE SALAMONE
(516) 654-9398

Contact: RALPH SALAMONE
(516) 725-5802

Record Date: 03/01/1993

Classification: Small Quantity Generator

Used Oil Recyc: No

Violation Status: No violations found

NY MANIFEST
Additional detail is available in NY MANIFEST. Please contact your EDR Account Executive for more information.

5
South
< 1/8
Higher

SAG HARBOR BRIDGE STREET
BRDIGE STREET
SAG HARBOR, NY 11963

CERCLIS **1000116785**
FINDS **NYD986869170**

CERCLIS Classification Data:
Site Incident Category: Not reported
Ownership Status: Unknown
EPA Notes: Not reported
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL

CERCLIS Assessment History:

Assessment:	DISCOVERY	Completed:	01-JUN-88
Assessment:	PRELIMINARY ASSESSMENT	Completed:	01-NOV-88
Assessment:	SITE INSPECTION	Completed:	31-MAR-89
Assessment:	REMOVAL ASSESSMENT	Completed:	29-NOV-90
Assessment:	EXPANDED SITE INSPECTION	Completed:	01-DEC-90

CERCLIS Site Status:
NFRAP (No Futher Remedial Action Planned

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
B6 **ENE** **< 1/8** **Higher**	**US POSTAL SERVICE** **LONG ISLAND AVENUE** **SAG HARBOR, NY**	**LUST**	**S100150354** **N/A**

LUST:

Spill Number: 8905290
Region of Spill: 1
Facility Contact: Not reported
Facility Tele: Not reported
Investigator: LEUNG WELL
SWIS: 47
Caller Name: HAROLD GOLDBERG
Caller Agency: USPO
Caller Phone: (516) 755-2974
Caller Extension: Not reported
Notifier Name: Not reported
Notifier Agency: Not reported
Notifier Phone: Not reported
Notifier Extension: Not reported
Spiller Contact: Not reported
Spiller Phone: Not reported
Spiller: US POSTAL SERVICE
Address P.O BOX 8000
HICKSVILLE, NY
Spill Class: Known release that creates potential for fire or hazard. DEC Response. Willing Responsible Party. Corrective action taken.
Spill Closed Dt: 10/17/1994
Spill Cause: Tank Failure
Resource Affected: Groundwater
Water Affected: Not reported
Spill Source: Other Commercial/Industrial
Spill Notifier: Tank Tester
PBS Number: Not reported
Spill Date: 08/29/1989 08:45
Reported to Dept: 08/29/1989 09:20
Cleanup Ceased: 10/17/1994
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 07/01/1997
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 08/30/1989
Date Region Sent Summary to Central Office: Not reported
PBS Number: Not reported
Tank Number: Not reported
Test Method: Not reported
Leak Rate: Not reported
Capacity (Gal): Not reported
Gross Leak/Fail: Not reported
Material: #2 FUEL OIL
Material Class: Petroleum
Unknwn Quantity: False
Unk Qt Recovered: False
Quantity Spilled: 0
Quant Recovered: 0
Quantity Units: Gallons
DEC Remarks: 10/17/94: TANK REMOVED, CONT SOIL REMOVED, 4 WELLS INSTALLED,NO FLOATING PRODUCT FOUND, DISSOLVED IS ND TO 5PPB.
Caller Remarks: 1300 GALS LEFT IN TANK, HOLE APPROX 30-38 " FROM BOTTOM. 1500 GAL TANK

B7 **NE** **< 1/8** **Higher**	**DYNAMIC DUCE** **8 BAY ST** **SAG HARBOR, NY**	**LUST**	**S102669260** **N/A**

LUST:

Spill Number: 9104825
Region of Spill: 1
Facility Contact: Not reported
Facility Tele: Not reported
Investigator: HAAS
SWIS: 47
Caller Name: DISPATCHER
Caller Agency: EAST HAMPTON PD
Caller Phone: (516) 324-0777
Caller Extension: Not reported
Notifier Name: Not reported
Notifier Agency: Not reported
Notifier Phone: Not reported
Notifier Extension: Not reported

DYNAMIC DUCE (Continued) **S102669260**

Spiller Contact: Not reported
Spiller Phone: (803) 272-7918
Spiller: CAPT. MATHEW ROBINSON
Address P.O. BOX 4212
N MYRTLE BEACH, SC 29597
Spill Class: Not reported
Spill Closed Dt: 08/04/1991
Spill Cause: Tank Overfill
Resource Affected: Surface Water
Water Affected: SAG HARBOR
Spill Source: Vessel
Spill Notifier: Police Department
PBS Number: Not reported
Spill Date: 08/04/1991 10:58
Reported to Dept: 08/04/1991 11:33
Cleanup Ceased: 08/04/1991
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: Recommended Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 02/12/1992
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 08/05/1991
Date Region Sent Summary to Central Office: 02/12/1992
PBS Number: Not reported
Tank Number: Not reported
Test Method: Not reported
Leak Rate: Not reported
Capacity (Gal): Not reported
Gross Leak/Fail: Not reported
Material: DIESEL
Material Class: Petroleum
Unknwn Quantity: False
Unk Qt Recovered: False
Quantity Spilled: 25
Quant Recovered: 20
Quantity Units: Gallons
DEC Remarks: / / : CAPTAIN PAID $250 FINE???. 08/04/91: E HAMPTON PD REPORTS OVERFILLING OF TANK ON BOAT. ECO HATCH ON SCENE WITH SPILLER. 08/04/91: DEC (HAAS) RESPOND. AS PER ECO HATCH, TANK WAS OVERFILLED, RESULTING IN ~25GAL OF DIESEL SPILLING INTO HARBOR. 08/04/91: AS PER HATCH: CAPTAIN IS BRET ROBINSON BOX 4212 1002B (AS PER ECO NOTES; SPILL NOTES SAY 102B AND 1002B) PERRIN DR N MYRTLE BEACH SC 29597 803-272-7918 LICENSE #642014 USCG. 08/04/91: AS PER HATCH: VESSEL IS "DYNAMIC DUCE" DOC #683186 61FT 1985 HATTERAS #3820295. OWNER IS W. CECIL WARSKY JR 10 CARDINAL DR WILMINGTON NC 28416 919-395-5300(W) 919-256-2081(H). 08/04/91: HATCH HAD MANAGED TO CLEAN UP SPILL WITH PADS. HE ISSUED TICKET # 050306-4 FOR ECL VIOLATION 130345-2 ;WILL RECOMMEND MAXIMUM PENALTY. HIS NOTES SAY CONTACT RICHARD BASS AT 919-395-5300. 08/04/91: CAPTAIN COULD NOT ARRANGE FOR DISPOSAL OF PADS, SO DEC HIRED MPC TO DO SO. (ONE DRUM SORBENTS). 01/10/92: DEC TO CLOSE REGIONAL FILE.
Caller Remarks: TANK OVERFILLED ON BOAT. P.O.KARNUTH USCG NOTIFIED AT 12:15 PHONE CONV. WITH ECO PAUL HATCH: HAVE SPILLER ON SITE, THEY ATTEMPTED CLEANUP WITH PADS, AREA TOO LARGE

8
NE
< 1/8
Higher

PHOTOGRAPHIC EAST LTD
BAY ST & RTE 114 SE COR OF
SAG HARBOR, NY 11963

RCRIS-SQG **1000990078**
NYR000000372

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

PHOTOGRAPHIC EAST LTD (Continued) **1000990078**

RCRIS:

Owner: PHOTOGRAPHIC EAST LTD
516725812

Contact: PETER MULLER
(516) 725-8123

Record Date: 02/21/1995

Classification: Small Quantity Generator

Used Oil Recyc: No

Violation Status: No violations found

NY MANIFEST
Additional detail is available in NY MANIFEST. Please contact your EDR Account Executive for more information.

Map ID	Site	Database(s)	EDR ID / EPA ID
9 **SW** **1/8-1/4** **Higher**	**MALLOY SAG HARBOR COVE WEST MA** **50 W WATER ST** **SOUTH HAMPTON, NY 11963**	**UST** **AST**	**U003031783** **N/A**

Suffolk County UST:

Facility ID:	9-0154	Facility Tel:	(516)725-2100
Owner:	MR PATRICK MALLOY WEST WATER ST NY 11963 (000)000-0000		
Location:	UNDER, OUT	Tank ID:	1
Capacity:	4000	Installed:	84
Construction:	Single Walled Fiberglass Tank		
Dispenser:	SUBMERSA	Fill Type:	GRAVITY
Compliance:	Not reported		
Tank Status:	Permitted Tank. Permit Runs Out - 1989		
Content:	GASOLINE	Date Removed:	Not reported

Facility ID:	9-0154	Facility Tel:	(516)725-2100
Owner:	MR PATRICK MALLOY WEST WATER ST NY 11963 (000)000-0000		
Location:	UNDER, OUT	Tank ID:	2
Capacity:	4000	Installed:	84
Construction:	Single Walled Fiberglass Tank		
Dispenser:	SUBMERSA	Fill Type:	PUMPED
Compliance:	Not reported		
Tank Status:	Permitted Tank. Permit Runs Out - 1989		
Content:	GASOLINE	Date Removed:	Not reported

MALLOY SAG HARBOR COVE WEST MA (Continued) **U003031783**

Facility ID:	9-0154	Facility Tel:	(516)725-2100
Owner:	MR PATRICK MALLOY WEST WATER ST NY 11963 (000)000-0000		
Location:	UNDER, OUT	Tank ID:	3
Capacity:	2000	Installed:	Not reported
Construction:	Plain Steel Single Walled Tank		
Dispenser:	SUBMERSA	Fill Type:	GRAVITY
Compliance:	Not reported		
Tank Status:	Removed Tank (Date Removed - 1984)		
Content:	OTHER	Date Removed:	01/01/84

Suffolk County AST:

Facility ID:	9-0154	Facility Tel:	(516)725-2100
Region:	SUFFOLK		
Owner:	MR PATRICK MALLOY WEST WATER ST NY 11963 (000)000-0000		
Location:	ABOVE, OUT	Tank ID:	4
Capacity:	1000	Installed:	Not reported
Dispenser:	SUCTION	Fill Type:	PUMPED
Content:	OTHER	Date Removed:	01/01/84
Tank Status:	Removed Tank (Date Removed - 1984)		
Construction:	Plain Steel Single Walled Tank		
Compliance:	Not reported		

10
SE
1/8-1/4
Higher

EMPORIUM HARDWARE STORE
MAIN STREET
SAG HARBOR, NY

LUST **S102091666**
NY Spills **N/A**

LUST:

Spill Number:	9400079	Region of Spill:	1
Facility Contact:	Not reported	Facility Tele:	Not reported
Investigator:	CAMPBELL	SWIS:	47
Caller Name:	P.O. SARRO	Caller Agency:	SOUTHAMPTON PD
Caller Phone:	(516) 728-5000	Caller Extension:	Not reported
Notifier Name:	Not reported	Notifier Agency:	Not reported
Notifier Phone:	Not reported	Notifier Extension:	Not reported
Spiller Contact:	Not reported	Spiller Phone:	Not reported
Spiller:	EMPORIUM HARDWARE STORE		
Address	Not reported Not reported		
Spill Class:	Known release that creates a file or hazard. DEC Response. Unknown Responsible Party. Corrective action taken. (ISR)		
Spill Closed Dt:	06/30/1994		
Spill Cause:	Other	Resource Affected:	In Sewer
Water Affected:	SAG HARBOR COVE/HARB	Spill Source:	Other Commercial/Industrial
Spill Notifier:	Police Department	PBS Number:	Not reported
Spill Date:	04/03/1994 11:14	Reported to Dept:	04/03/1994 11:51
Cleanup Ceased:	06/30/1994		
Last Inspection:	Not reported		
Cleanup Meets Standard:	True		
Recommended Penalty:	No Penalty		
Spiller Cleanup Date:	Not reported		
Enforcement Date:	Not reported		

EMPORIUM HARDWARE STORE (Continued) **S102091666**

Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 06/30/1994
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 04/04/1994
Date Region Sent Summary to Central Office: Not reported
PBS Number: Not reported Tank Number: Not reported
Test Method: Not reported Leak Rate: Not reported
Capacity (Gal): Not reported Gross Leak/Fail: Not reported
Material: UNKNOWN PETROLEUM
Material Class: Petroleum
Unknwn Quantity: False Unk Qt Recovered: False
Quantity Spilled: 0 Quant Recovered: 0
Quantity Units: Gallons
DEC Remarks: 06/30/94: REFERRED FOLLOWUP TO THE DIV OF HAZ WASTE REMEDIATION. 10/10/95: This is additional information about material spilled from the translation of the old spill file: CHEMICALS.
Caller Remarks: MULTIPLE CHEMICALS AT HARDWARE STORE,FIRE

SPILLS:
Spill Number: 9111087 Region of Spill: 1
Facility Contact: Not reported Facility Tele: Not reported
Investigator: NONE
Caller Name: PAUL NAPOLITANO Caller Agency: BRANCH SERVICES
Caller Phone: (516) 563-7300 Caller Extension: Not reported
Notifier Name: Not reported Notifier Agency: Not reported
Notifier Phone: Not reported Notifier Extension: Not reported
Spiller Contact: Not reported Spiller Phone: Not reported
SWIS: 47
Spiller: VILLAGE OF SAG HARBOR
Address Not reported
Not reported
Spill Class: Not reported
Spill Closed Dt: 01/27/1992
Spill Cause: Equipment Failure Resource Affected: On Land
Water Affected: Not reported Spill Source: Other Non Commercial/Industrial
Spill Notifier: Responsible Party PBS Number: Not reported
Spill Date: 01/27/1992 14:00 Reported to Dept: 01/27/1992 14:46
Cleanup Ceased: 01/27/1992
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: Not reported
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 01/30/1992
Date Region Sent Report To Central Office: Not reported
DEC Remark: Not reported
Caller Remark: BOILER MISS FIRED, CONTAINED ON CONCRETE SLAB, SORBENT APPLIED & PICKED UP, CONCRETE SCRUBBED, CLEANUP BY BRANCH SERVICES, NO RESPONSE NEEDED

---

11 **LILCO** **NY Spills** **S102093801**
SE **MAIN STREET/SPRING STREET** **N/A**
1/8-1/4 **SAG HARBOR, NY**
Higher

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

LILCO (Continued) **S102093801**

SPILLS:

Spill Number:	8607284	Region of Spill:	1
Facility Contact:	Not reported	Facility Tele:	Not reported
Investigator:	PARISH		
Caller Name:	Not reported	Caller Agency:	Not reported
Caller Phone:	Not reported	Caller Extension:	Not reported
Notifier Name:	Not reported	Notifier Agency:	Not reported
Notifier Phone:	Not reported	Notifier Extension:	Not reported
Spiller Contact:	Not reported	Spiller Phone:	Not reported
SWIS:	47		
Spiller:	LILCO		
Address	Not reported Not reported		
Spill Class:	Not reported		
Spill Closed Dt:	03/26/1987		
Spill Cause:	Equipment Failure	Resource Affected:	In Sewer
Water Affected:	Not reported	Spill Source:	Other Commercial/Industrial
Spill Notifier:	Responsible Party	PBS Number:	Not reported
Spill Date:	03/02/1987 07:07	Reported to Dept:	03/02/1987 09:09
Cleanup Ceased:	03/26/1987		
Last Inspection:	Not reported		

Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 07/01/1987
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 03/05/1987
Date Region Sent Report To Central Office: Not reported
DEC Remark: / / : MPC TO PUMP. / / : MPC TO PUMP OUT SD. 3/25/87 ALL IS CLEAN.ONLY EVIDENCE OF SPILL IS BLACK SPOT ON PAVEMENT.
Caller Remark: POLE #15.

---

12 **ESE** **1/4-1/2** **Higher**	**ST.ANDREW'S CHURCH** **DIVISION STREET** **SAG HARBOR, NY**	**LUST**	**S100149150** **N/A**

LUST:

Spill Number:	8706110	Region of Spill:	1
Facility Contact:	Not reported	Facility Tele:	Not reported
Investigator:	GOERTZ	SWIS:	47
Caller Name:	Not reported	Caller Agency:	Not reported
Caller Phone:	Not reported	Caller Extension:	Not reported
Notifier Name:	Not reported	Notifier Agency:	Not reported
Notifier Phone:	Not reported	Notifier Extension:	Not reported
Spiller Contact:	Not reported	Spiller Phone:	(516) 725-0125
Spiller:	ST.ANDREW'S CHURCH		
Address	DIVISION STREET SAG HARBOR, NY		
Spill Class:	Not reported		
Spill Closed Dt:	08/02/1988		
Spill Cause:	Tank Test Failure	Resource Affected:	Groundwater
Water Affected:	Not reported	Spill Source:	Other Non Commercial/Industrial
Spill Notifier:	Tank Tester	PBS Number:	Not reported
Spill Date:	10/20/1987 13:30	Reported to Dept:	10/20/1987 14:25

ST.ANDREW'S CHURCH (Continued) **S100149150**

Cleanup Ceased: 08/02/1988
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 08/02/1988
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 10/21/1987
Date Region Sent Summary to Central Office: Not reported
PBS Number: Not reported
Tank Number: Not reported
Test Method: Not reported
Leak Rate: 0.00
Capacity (Gal): 0
Gross Leak/Fail: Not reported
Material: #2 FUEL OIL
Material Class: Petroleum
Unknwn Quantity: False
Unk Qt Recovered: False
Quantity Spilled: 0
Quant Recovered: 0
Quantity Units: Gallons
DEC Remarks: / / : WILL UNCOVER AND RETEST. G&M DEGE TESTER. 08/02/88: F&N RETESTED 4K SYSTEM AFTER AIR POCKET WAS BLED & PASSED.3K TANK WAS REMOVED BY MPC. 45 YDS OF CONT SOIL WAS REMOVED. SPILL CAN BE CLOSED PENDING DISPOSAL.
Caller Remarks: LEAK RATE -.426 SYSTEM TEST.

C13
East
1/4-1/2
Higher

GIFFORDS
67 BAY ST
SAG HARBOR, NY

NY Spills **S102101057**
N/A

SPILLS:
Spill Number: 9413250
Region of Spill: 1
Facility Contact: Not reported
Facility Tele: Not reported
Investigator: NONE
Caller Name: KATHLEEN LANZISERA
Caller Agency: GIFFORDS
Caller Phone: (516) 576-3000
Caller Extension: Not reported
Notifier Name: Not reported
Notifier Agency: Not reported
Notifier Phone: Not reported
Notifier Extension: Not reported
Spiller Contact: Not reported
Spiller Phone: Not reported
SWIS: 47
Spiller: GIFFORDS OIL
Address Not reported
Not reported
Spill Class: Known release with minimal potential for fire or hazard. DEC Response. Willing Responsible Party. Corrective action taken.
Spill Closed Dt: 01/05/1995
Spill Cause: Equipment Failure
Resource Affected: On Land
Water Affected: Not reported
Spill Source: Other Non Commercial/Industrial
Spill Notifier: Responsible Party
PBS Number: Not reported
Spill Date: 01/04/1995 16:16
Reported to Dept: 01/04/1995 11:25
Cleanup Ceased: 01/05/1995
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False

GIFFORDS (Continued) **S102101057**

Spill Record Last Update: Not reported
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 01/05/1995
Date Region Sent Report To Central Office: Not reported
DEC Remark: Not reported
Caller Remark: AT ST ANDREW SCHOOL CONVENT, BAD GASKET, ONTO CEMENT FLOOR, CLEANED UP WITH SPEEDI DRI, NO RESPONSE

C14
East
1/4-1/2
Higher

SUSAN ROTHENBERG/MOBIL OI
BAY / BURKE STREET
SAG HARBOR, NY

NY Spills **S102090271**
N/A

SPILLS:

Spill Number:	9105534	Region of Spill:	1
Facility Contact:	Not reported	Facility Tele:	Not reported
Investigator:	REASSIGN WELL		
Caller Name:	RICHARD GALLI	Caller Agency:	GALLI ENGINEERING
Caller Phone:	(516) 754-0396	Caller Extension:	Not reported
Notifier Name:	Not reported	Notifier Agency:	Not reported
Notifier Phone:	Not reported	Notifier Extension:	Not reported
Spiller Contact:	Not reported	Spiller Phone:	Not reported
SWIS:	47		
Spiller:	SUSAN ROTHENBERG/MOBIL OI		
Address	Not reported Not reported		
Spill Class:	Known release with minimal potential for fire or hazard. DEC Response. Unable/unwilling Responsible Party. Corrective action taken. (ISR)		
Spill Closed Dt:	Not reported		
Spill Cause:	Housekeeping	Resource Affected:	Groundwater
Water Affected:	Not reported	Spill Source:	Commercial Vehicle
Spill Notifier:	Other	PBS Number:	Not reported
Spill Date:	07/25/1991 12:00	Reported to Dept:	08/22/1991 09:00
Cleanup Ceased:	Not reported		
Last Inspection:	Not reported		

Cleanup Meets Standard: False
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 12/05/1997
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 08/26/1991
Date Region Sent Report To Central Office: Not reported
DEC Remark: Not reported
Caller Remark: SITE ASSESSMENT DONE ON PROPERTY BY GALLI ENGINEERING

15
East
1/4-1/2
Higher

SUSPECT MOTOR SAUNDRA D
BAY ST / BURK STREET
SAG HARBOR, NY

NY Spills **S102090241**
N/A

SPILLS:

Spill Number:	9105238	Region of Spill:	1
Facility Contact:	Not reported	Facility Tele:	Not reported
Investigator:	NONE		
Caller Name:	ECO HATCH	Caller Agency:	LAW ENFORCEMENT

SUSPECT MOTOR SAUNDRA D (Continued) **S102090241**

Caller Phone: (516) 751-7900
Caller Extension: Not reported
Notifier Name: Not reported
Notifier Agency: Not reported
Notifier Phone: Not reported
Notifier Extension: Not reported
Spiller Contact: Not reported
Spiller Phone: Not reported
SWIS: 47
Spiller: SUSPECT MOTOR SAUNDRA D
Address Not reported
Not reported
Spill Class: Not reported
Spill Closed Dt: 08/16/1991
Spill Cause: Unknown
Resource Affected: Surface Water
Water Affected: Not reported
Spill Source: Vessel
Spill Notifier: DEC
PBS Number: Not reported
Spill Date: 08/14/1991 10:30
Reported to Dept: 08/14/1991 15:26
Cleanup Ceased: 08/16/1991
Last Inspection: Not reported
Cleanup Meets Standard: True
Recommended Penalty: No Penalty
Spiller Cleanup Date: Not reported
Enforcement Date: Not reported
Investigation Complete: Not reported
UST Involvement: False
Spill Record Last Update: 08/20/1991
Corrective Action Plan Submitted: Not reported
Date Spill Entered In Computer Data File: 08/16/1991
Date Region Sent Report To Central Office: Not reported
DEC Remark: Not reported
Caller Remark: SPILL CAME OUT OF BILGE PIPE FROM BOAT. ECO TO GET MORE DETAILS ON SPILL. USCG RESPONDING,

---

16
SE
1/2-1
Higher

BULOVA WATCH FACTORY
WASHINGTON STREET
SAG HARBOR, NY 11963

SHWS **S100521037**
N/A

SHWS:
Facility ID: 152139
EPA ID: Not reported
Region: 1
Site Type: STRUCTURE
Acres: 2.3 ACRES
User: BULOVA WATCH
Owner: WATCH CASE FACTORY ASSOC. C/O ESTATE
1928 MIDLINE
SYOSSET, NY
Operator: BULOVA WATCH
WASHINGTON STREET
SAG HARBOR, NY 11963
Lat/Long: 40 59' 57" / 72 17' 48"
Classification: SIGNIFICANT THREAT TO THE PUBLIC HEALTH OR ENVIRONMENT - ACTION REQUIRED.
Hazardous Waste Disposed: 1936 TO 1981
Analytical Data Available: GROUNDWATER SOIL
Applicable Standards Exceeded: GROUNDWATER DRINKING WATER
Geotechnical Info. Soil/Rock Type: SAND AND GRAVEL
Depth to Groundwater: 12 TO 15 FEET
Legal Action Type: STATE REMED. PROGRAM ORDER
Remedial Action: COMPLETED
Nature of Action: RI-FS, IRM
Enforcement Status: ORDER SIGNED

BULOVA WATCH FACTORY (Continued) **S100521037**

Site Description: THIS SITE IS A FORMER TEXTILE PLANT THAT WAS CONVERTED TO WATCH MANUFACTURING AT THE TURN OF THE CENTURY. WATCH MANUFACTURING OPERATIONS INCLUDED: TOOLING, PRESSING, FORMING, MACHINING, SOLDERING, POLISHING, SOLVENT CLEANING, AND PLATING. THE SOLVENTS 1,1,1-TRICHLOROETHANE (TCA) AND TRICHLOROETHYLENE (TCE) WERE USED IN THE INTERMEDIATE CLEANING OPERATIONS AND HAVE BEEN DETECTED IN THE UNSATURATED SOILS AND IN THE INNER COURTYARD. TCE WAS DETECTED AT 1,000 PPB AND 1,1,1 -TCA AT 513 PPB. HIGH LEVELS OF TCE AND TCA WERE ALSO DETECTED IN DOWNGRADIENT WELLS; TCE AT 10,000 PPB, 1,1,1-TCA AT 3,900 PPB, 1,1-DCE AT 1,100 PPB AND TETRACHLOROETHYLENE (PCE) AT 83 PPB. A SOIL GAS SURVEY HAS IDENTIFIED THE COURTYARD AS ONE SOURCE OF CONTAMINATION. IN JANUARY OF 1994, BULOVA SIGNED A CONSENT ORDER TO CONDUCT AN INTERIM REMEDIAL MEASURE (IRM) WHICH CONSISTS OF AN AIR SPARGING/SOIL VENTING SYSTEM. THE SYSTEM IS IN OPERATION IN THE INNER AND NORTHWEST COURTYARDS OF THE BULOVA PROPERTY. GROUNDWATER CONCENTRATIONS AT THE SITE BOUNDARY ARE APPROACHING AMBIENT STANDARDS. A FULL REMEDIAL PROGRAM ORDER WAS SIGNED IN SEPTEMBER, 1995. THE PRP HAS COMPLETED THE ON-SITE AND OFF-SITE REMEDIAL INVESTIGATION (RI). A RECORD OF DECISION (ROD) WAS SIGNED IN DECEMBER 1996, SPECIFYING CONTINUED OPERATION AND MONITORING OF THE AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM. A LEAKING UNDERGROUND STORAGE TANK (UST) CONTAINING # 2 FUEL OIL IS BEING ADDRESSED BY THE SPILL RESPONSE PROGRAM.

Site Comment: 1,1,1-TRICHLOROETHANE (F001, F002, U226 WASTE), UNKNOWN TRICHLOROETHYLENE (F001, F002, U228 WASTE), UNKNOWN

Assessment of Environmental Problems:
GROUNDWATER CONTAMINATION AT THIS SITE HAS BEEN CONFIRMED. THE DIRECTION THAT THE CONTAMINANT PLUME IS TRAVELING IN INDICATES THAT DISCHARGE TO THE COVE HAS OCCURRED.

Assessment of Health Problems:
GROUNDWATER FROM THE SITE IS CONTAMINATED, AND SUFFOLK COUNTY WATER AUTHORITY MAPS INDICATE THAT NOT ALL HOMES IN THE AREA BETWEEN THE SITE AND SAG HARBOR COVE ARE CONNECTED TO THE PUBLIC WATER SUPPLY. SUFFOLK COUNTY HEALTH DEPARTMENT SERVICES SAMPLED 10 PRIVATE WATER SUPPLIES IN THE AREA AND FOUND NO SITE RELATED CONTAMINATION. THE FORMER FACTORY GROUNDS HAVE BEEN REMEDIATED TO ALLOW THE SITE TO BE USED FOR RESIDENTIAL PURPOSES. AIR SAMPLES ARE BEING COLLECTED FROM EMISSION POINTS OF THE REMEDIATION SYSTEM TO ENSURE EMISSIONS ARE WITHIN AIR QUALITY STANDARDS.

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
NORTH HAVEN	S102669349	HOMEOWNER ON SITE	SOUTH FERRY ROAD	11963	LUST	9108383
SAG HARBOR	S102099747	SAG HARBOR SEWAGE TREATME	BAY STREET	11963	NY Spills	9403972
SAG HARBOR	1000253433	MOBIL OIL SAG HARBOR TERMINAL	BAY ST	11963	RCRIS-SQG, FINDS, NY Spills	8607632
SAG HARBOR	1000313430	KEENERS EASTEND LITHO INC.	BAY STREET	11963	RCRIS-SQG, FINDS	
SAG HARBOR	S102090903	VILLAGE OF SAG HARBOR	BRICKKILN ROAD	11963	NY Spills	9011622
SAG HARBOR	1001170738	LILCO - SAG HARBOR GAS PLT	BRIDGE ST	11963	FINDS	
SAG HARBOR	1000391903	EAST END LITHOGRAPH CORP	BRIDGE ST	11963	RCRIS-SQG, FINDS	
SAG HARBOR	S102660908	LI FISHERMAN	BRIDGE STREET	11963	LUST	8401867
SAG HARBOR	S100115788	ROWE INDUSTRIES, INC.	BRIDGEHAMPTON TURNPIKE	11963	SHWS	152106
SAG HARBOR	S102092665	VILLAGE SAG HARBOR HWY YD	COLUMBIA STREET	11963	NY Spills	9208238
SAG HARBOR	1000369504	PIERSON HIGH SCH	DIVISION ST	11963	RCRIS-SQG, FINDS	
SAG HARBOR	S102096248	HARBOR HEIGHTS S/S	HAMPTON ROAD	11963	NY Spills	8908530
SAG HARBOR	S102090826	HARBOR HEIGHTS SERVICE	HAMPTON STREET	11963	NY Spills	9007119
SAG HARBOR	1000555771	VANKOVICS LTD DBA HARBOR HEIGHTS	HAMPTON ST & RTE 114	11963	RCRIS-SQG, FINDS	
SAG HARBOR	1000556953	SAG HARBOR (V) WWTP	MAIN ST	11963	FINDS	
SAG HARBOR	1000394019	PAST TENSE LTD DBA FISHERS	MAIN ST	11963	FINDS, RCRIS-LQG	
SAG HARBOR	1000872550	MORBECK CAMERA DBA CAMERA CONCEPTS #5	MAIN ST	11963	RCRIS-SQG, FINDS	
SAG HARBOR	1000552172	SAG HARBOR SVC STA	1/2 MI N SCUTTLEHALL RD	11963	FINDS	
SAG HARBOR	S102670529	GIFFORDS	NOYACK ROAD	11963	LUST	9415866
SAG HARBOR	1000116778	SAG HARBOR INDUSTRIES INC	SAG HARBOR TNPK	11963	RCRIS-SQG, FINDS, CONSENT	
SAG HARBOR	S102237888	VESSEL AUGUST MOON	WEST WATER STREET	11963	LUST, NY Spills	9210967
SAG HARBOR	S102100706	MANDORIAN VESSEL	WESTWATER STREET	11963	LUST, NY Spills	9407203
SOUTH HAMPTON	U001857903	SAG HARBOR S/S GULF	RTE 64 SAG HARBOR TP	11963	UST, AST	9-0115
SOUTH HAMPTON	U001858028	BULOVA WATCH	CHURCH ST	11963	UST	9-0370
SOUTH HAMPTON	U001857884	SAG HARBOR INDUSTRIES INC	CNTY RD 64 SAG HARBO	11963	UST, LUST, NY Spills, AST	9-0075
SOUTH HAMPTON	U001857918	NEW YORK TELEPHONE CO	CNTY RTE 64 SAG HARB	11963	UST	9-0146
SOUTH HAMPTON	U003031782	SAG HARBOR FIRE DEPT	COLUMBIA ST	11963	UST	9-0119
SOUTH HAMPTON	U001857880	SAG HARBOR HWY DEPT	COLUMBIA ST	11963	UST, AST	9-0067
SOUTH HAMPTON	U001857999	ST ANDREW R C CHURCH	DIVISION ST	11963	UST	9-0311
SOUTH HAMPTON	U001740461	KING & THOMASSON BUS CO INC	FERRY RD	11963	UST, AST	9-0131
SOUTH HAMPTON	U001740604	JOHN JERMAIN MEMORIAL LIBRARY	MAIN ST	11963	UST	9-0316
SOUTH HAMPTON	U001740592	A T & T COMMUNICATIONS	MIDDLE LINE HWY	11963	UST, AST	9-0302
SOUTH HAMPTON	U001740479	WHALER'S MARINA INC.	WEST WATER ST	11963	UST	9-0155
SOUTHAMTON	A100087525	SAG HARBOR CENTRAL GARAGE	COLUMBIA ST	11963	AST	9-0343
VILL. OF SAG HARBOR	S102872835	LILCO, SAG HARBOR GAS PLANT	BRIDGE STREET	11963	HSWDS	HS1019

GEOCHECK VERSION 2.1 ADDENDUM
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Northern Quadrant)

BASIC WELL DATA

Site ID:	410047072184701	Distance from TP:	1 - 2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Suffolk
Altitude:	Not Reported	State:	New York
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Eastern Quadrant)

BASIC WELL DATA

Site ID:	405940072164701	Distance from TP:	1 - 2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Suffolk
Altitude:	Not Reported	State:	New York
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Southern Quadrant)

BASIC WELL DATA

Site ID:	405740072190001	Distance from TP:	>2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Suffolk
Altitude:	Not Reported	State:	New York
Well Depth:	Not Reported	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Well Within 1/2 - 1 Mile of Target Property (Eastern Quadrant)

Public Water Supply #:	5101300	Source ID:	003
PW Supply Name:	THREE MILE HARBOR TRAILER PARK		
Source Name:	NEW WELL 4" #2		
Source Description:	Groundwater		
Availability/Utilization:	Permanent Utilization	Source Type:	Source Record
Latitude:	405945	Longitude:	-721658
Source Prod Capacity:	0	Fed ID of Seller:	Not Reported
Watershed Basin:	17	Watershed Sub-basin:	00
Treatment Plant ID:	Not Reported	Date of rec Last Update:	Not Reported
Water Type:	Not Reported	Record Tag:	Existing Record

Well Within 1 - 2 Miles of Target Property (Southern Quadrant)

Public Water Supply #:	5110526	Source ID:	159
PW Supply Name:	SUFFOLK COUNTY WATER AUTHORITY		
Source Name:	DIVISION STREET WELL S-62855		
Source Description:	Groundwater		
Availability/Utilization:	Permanent Utilization	Source Type:	Source Record
Latitude:	405920	Longitude:	-721705
Source Prod Capacity:	0	Fed ID of Seller:	Not Reported
Watershed Basin:	17	Watershed Sub-basin:	01
Treatment Plant ID:	357	Date of rec Last Update:	Not Reported
Water Type:	Not Reported	Record Tag:	Existing Record

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest PWS.

PWS SUMMARY:

PWS ID:	NY0014377	PWS Status:	Active	Distance from TP:	1/4 - 1/2 Mile
Date Initiated:	Not Reported	Date Deactivated:	Not Reported	Dir relative to TP:	East
PWS Name:	ROYAL OAKS MOTEL EAST HAMPTON, NY 11937				

Addressee / Facility: System Owner/Responsible Party
MCCARRON CATHLEEN C
MURDOCK ENTERPRISES
3778 NOYAC RD
SAG HARBOR, NY 11963

Facility Latitude:	40 59 52	Facility Longitude:	072 17 35
City Served:	EAST HAMPTON (T)		
Treatment Class	Not Reported	Population Served:	Not Reported

PWS currently has or has had major violation(s): Yes

Violations information not reported.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/15/98
Date Made Active at EDR: 07/20/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 07/08/98
Elapsed ASTM days: 12
Date of Last EDR Contact: 08/27/98

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/30/98
Date Made Active at EDR: 07/20/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 07/14/98
Elapsed ASTM days: 6
Date of Last EDR Contact: 07/10/98

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 03/06/98
Date Made Active at EDR: 07/09/98
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 06/09/98
Elapsed ASTM days: 30
Date of Last EDR Contact: 09/21/98

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 01/01/98
Date Made Active at EDR: 04/13/98
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 02/17/98
Elapsed ASTM days: 55
Date of Last EDR Contact: 08/14/98

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/15/97
Date Made Active at EDR: 02/02/98
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 01/05/98
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/14/98

FEDERAL NON-ASTM RECORDS:

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/95 | Date of Last EDR Contact: 09/22/98
Database Release Frequency: Biennially | Date of Next Scheduled EDR Contact: 12/21/98

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies | Date of Last EDR Contact: Varies
Database Release Frequency: Varies | Date of Next Scheduled EDR Contact: N/A

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 703-908-2493
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/01/97 | Date of Last EDR Contact: 08/19/98
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 09/21/98

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4526
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/97 | Date of Last EDR Contact: 07/22/98
Database Release Frequency: Annually | Date of Next Scheduled EDR Contact: 10/26/98

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/30/98 | Date of Last EDR Contact: 07/13/98
Database Release Frequency: Quarterly | Date of Next Scheduled EDR Contact: 10/12/98

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91 | Date of Last EDR Contact: 08/28/98
Database Release Frequency: No Update Planned | Date of Next Scheduled EDR Contact: 11/23/98

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3936
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/22/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/18/98
Date of Next Scheduled EDR Contact: 11/16/98

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 09/14/98
Date of Next Scheduled EDR Contact: 12/14/98

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 09/03/98
Date of Next Scheduled EDR Contact: 11/30/98

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 06/11/98
Date of Next Scheduled EDR Contact: 09/28/98

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 12/31/94
Database Release Frequency: Annually
Date of Last EDR Contact: 07/22/98
Date of Next Scheduled EDR Contact: 10/26/98

STATE OF NEW YORK ASTM RECORDS:

LUST: Spills Information Database
Source: Department of Environmental Conservation
Telephone: 518-457-2462
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/01/98
Date Made Active at EDR: 07/15/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/15/98
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/27/98

SHWS: Inactive Hazardous Waste Disposal Sites in New York State
Source: Department of Environmental Conservation
Telephone: 518-457-0747
State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/01/97
Date Made Active at EDR: 04/13/98
Database Release Frequency: Annually
Date of Data Arrival at EDR: 03/13/98
Elapsed ASTM days: 31
Date of Last EDR Contact: 08/31/98

LF: Facility Register
Source: Department of Environmental Conservation
Telephone: 518-457-2051
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/31/97
Date Made Active at EDR: 04/28/98
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 03/26/98
Elapsed ASTM days: 33
Date of Last EDR Contact: 08/12/98

UST: Petroleum Bulk Storage (PBS) Database
Source: Department of Environmental Conservation
Telephone: 518-457-4351
Facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons.

Date of Government Version: 07/01/98
Date Made Active at EDR: 09/23/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 08/24/98
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/27/98

CBS UST: Chemical Bulk Storage Database
Source: NYSDEC
Telephone: 518-457-4351
Facilities that store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size.

Date of Government Version: 04/01/98
Date Made Active at EDR: 07/20/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/18/98
Elapsed ASTM days: 32
Date of Last EDR Contact: 07/27/98

MOSF UST: Major Oil Storage Facilities Database
Source: NYSDEC
Telephone: 518-457-4351
Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 04/01/98
Date Made Active at EDR: 07/20/98
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/18/98
Elapsed ASTM days: 32
Date of Last EDR Contact: 05/27/98

STATE OF NEW YORK NON-ASTM RECORDS:

AST: Petroleum Bulk Storage (AST)
Source: Department of Environmental Conservation
Telephone: 518-457-4351
Registered Aboveground Storage Tanks.

Date of Government Version: 04/01/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/27/98
Date of Next Scheduled EDR Contact: 11/02/98

CBS AST: Chemical Bulk Storage Database
Source: NYSDEC
Telephone: 518-457-4351
Facilities that store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size.

Date of Government Version: 04/01/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/27/98
Date of Next Scheduled EDR Contact: 11/02/98

MOSF AST: Major Oil Storage Facilities Database
Source: NYSDEC
Telephone: 518-457-4351
Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 04/01/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/27/98
Date of Next Scheduled EDR Contact: 11/02/98

HSWDS: Hazardous Substance Waste Disposal Site Inventory
Source: Department of Environmental Conservation
Telephone: 518-457-0639
The list includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the Registry of Inactive Hazardous Waste Diposal Sites and non-registry sites which U.S. EPA Preliminary Assessment (PA) reports or Site Investigation (SI) reports were prepared.

Date of Government Version: 09/01/97
Database Release Frequency: N/A
Date of Last EDR Contact: 09/10/98
Date of Next Scheduled EDR Contact: 12/07/98

SPILLS: Spills Information Database
Source: Department of Environmental Conservation
Telephone: 518-457-2462
Data collected on spills reported to NYSDEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from PBS regs), or 6 NYCRR Section 595.2 (from CBS regs). It includes spills active as of April 1, 1986, as well as spills occurring since this date.

Date of Government Version: 04/01/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/27/98
Date of Next Scheduled EDR Contact: 11/02/98

NEW YORK COUNTY RECORDS

CORTLAND COUNTY:

Cortland County UST Listing (AST)
Source: Cortland County Health Department
Telephone: 607-753-5035

Date of Government Version: 03/24/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

Cortland County UST Listing (UST)
Source: Cortland County Health Department
Telephone: 607-753-5035

Date of Government Version: 06/26/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

NASSAU COUNTY:

Registered Tank Database
Source: Nassau County Health Department
Telephone: 516-571-3314

Date of Government Version: 04/07/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/06/98
Date of Next Scheduled EDR Contact: 10/05/98

Registered Tank Database
Source: Nassau County Health Department
Telephone: 516-571-3314

Date of Government Version: 04/07/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/06/98
Date of Next Scheduled EDR Contact: 10/05/98

ROCKLAND COUNTY:

Petroleum Bulk Storage Database (AST)
Source: Rockland County Health Department
Telephone: 914-364-2605

Date of Government Version: 04/01/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

Petroleum Bulk Storage Database (UST)
Source: Rockland County Health Department
Telephone: 914-364-2605

Date of Government Version: 06/22/98
Database Release Frequency: Quarterly
Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

SUFFOLK COUNTY:

Underground Storage Tank Database (AST)
Source: Suffolk County Department of Health Services
Telephone: 516-854-2521

Date of Government Version: 03/01/98
Database Release Frequency: Annually
Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

Underground Storage Tank Database (UST)
Source: Suffolk County Department of Health Services
Telephone: 516-854-2521

Date of Government Version: 03/01/98
Database Release Frequency: Annually

Date of Last EDR Contact: 09/08/98
Date of Next Scheduled EDR Contact: 12/07/98

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: NPL Deletions
Source: EPA
Telephone: 703-603-8769
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/06/98
Date Made Active at EDR: 07/09/98
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/09/98
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/30/98

NFRAP: No Further Remedial Action Planned
Source: EPA/NTIS
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 06/15/98
Date Made Active at EDR: 07/20/98
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 07/08/98
Elapsed ASTM days: 12
Date of Last EDR Contact: 08/27/98

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1996 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in March 1997 from the U.S. Fish and Wildlife Service.

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

New York Public Water Wells
Source: New York Department of Health
Telephone: 518-458-6731

Toxics Targeting Computerized Environmental Report

Bridge St

Sag Harbor, NY 11963

August 09, 2000

Table of Contents

Introduction.. **1**

- *The Three Sections of Your Report*
- *How to Use Your Report*
- *Toxic Site Databases Analyzed In Your Report*
- *Limitations Of the Information In Your Report*

Section One: Your Report Summary.. **5**

- *Table One:* *Number of Identified Toxic Sites By Distance Interval*
- *Table Two:* *Identified Toxic Sites By Direction*
- *Table Three:* *Identified Toxic Sites Ranked by Proximity*
- *Table Four:* *Identified Toxic Sites By Category*
- *Map One:* *One-Mile Radius Map*
- *Map Two:* *Half-Mile Radius Map*
- *Map Three:* *Quarter-Mile Radius Map*
- *Map Four:* *Quarter-Mile Radius Close-up Map*

Section Two: Toxic Site Profiles

Section Three: Appendices

- *USEPA ERNS Check*
- *Unmappable Sites*
- *Hazardous Waste Codes*
- *How Toxic Sites Are Mapped*
- *Information Source Guide*

Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Computerized Environmental Report.* It checks for the presence of 16 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. Finally, a close-up map illustrates the locations of all identified toxic sites at the shortest radius search distance used in your report.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of <u>identified sites by distance intervals</u>.

- Check Table Two to see identified sites sorted by <u>direction</u>.

- Check Table Three to see identified sites ranked by <u>proximity to the target address</u>.

- Check Table Four to see identified sites <u>sorted by site categories</u>.

- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

Search Radius

One-Mile

1) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile

2) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

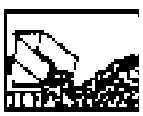
One-Mile

3) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

One-Mile

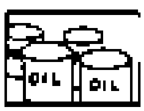
4) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

One-Mile



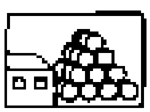
5) ***New York Solid Waste Facilities Registry, including New York City 1934 Sites****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

One-Mile



6) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000 gallon capacity for storing petroleum products.

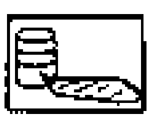
One-Mile



7) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following databases:

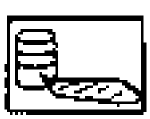
- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.
- ***RCRIS corrective action activity (CORRACTS):*** waste facilities with RCRIS corrective action activity reported by the USEPA.

Half-Mile



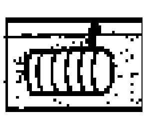
8) ***Toxic Spills: active*** stationary source spills reported to state environmental authorities, including unremediated leaking underground storage tanks.

Half-Mile



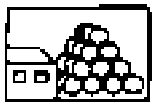
8) ***Toxic Spills: closed*** stationary and non-stationary source spills reported to state environmental authorities, including remediated leaking underground storage tanks.

Quarter-Mile



9) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than an 1,100 gallon capacity for storing petroleum products.

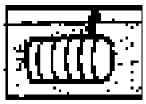
Quarter-Mile



10) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following databases:

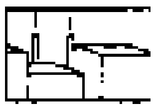
- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act .
- ***RCRIS corrective action activity (CORRACTS):*** waste facilities with RCRIS corrective action activity reported by the USEPA.

Quarter-Mile



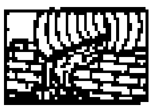
11) ***New York Chemical Bulk Storage Facilities****:* Sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Quarter-Mile



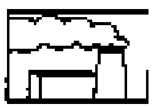
12) ***New York Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Quarter-Mile



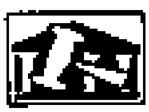
13) ***Federal Permit Compliance System Toxic Wastewater Discharges****:* permitted toxic wastewater discharges.

Quarter-Mile



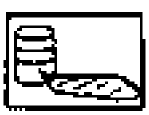
14) ***Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Quarter-Mile



15) ***Federal Civil Enforcement Docket****:* civil judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only



16) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Computerized Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The computerized map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 16 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. <u>Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere</u>. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites Ranked By Proximity*
- *Table Four: Identified Toxic Sites By Category*
- *Map One: One-Mile Radius Map*
- *Map Two: Half-Mile Radius Map*
- *Map Three: Quarter-Mile Radius Map*
- *Map Four: Quarter-Mile Radius Close up Map*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 - 100 ft	100 ft - 1/8 mi	1/8 mi - 1/4 mi	1/4 mi - 1/2 mi	1/2 mi - 1 mi	Site(s) Category Totals
NYS Inactive Hazardous Waste Disposal Sites *	2	1	0	0	0	3
CERCLIS Sites *	1	0	0	0	0	1
National Priority List Sites *	0	0	0	0	0	0
Hazardous Substance Waste Disposal Sites *	0	0	1	0	0	1
NYS Solid Waste Facilities *	0	0	0	0	0	0
NYS Major Oil Storage Facilities *	0	0	0	1	0	1
RCRA Hazardous Waste Treatment, Storage, Disposal Sites *	0	0	0	0	0	0
NYS Toxic Spills (incl. Leaking Undrgrnd Storage Tanks) **	0	6	7	5(5)	Not searched	18(5)
Local & State Petroleum Bulk Storage Sites ***	0	2	5	Not searched	Not searched	7
RCRA Hazardous Waste Generators & Transporters ***	1	5	1	Not searched	Not searched	7
NYS Chemical Bulk Storage Sites ***	0	0	0	Not searched	Not searched	0
Toxic Release Inventory Sites (TRI) ***	0	0	0	Not searched	Not searched	0
Permit Compliance System Toxic Wastewater Discharges ***	0	0	0	Not searched	Not searched	0
NYS Air Discharges ***	0	0	0	Not searched	Not searched	0
Civil Enforcement Docket Facilities ***	0	0	0	Not searched	Not searched	0
ERNS (Onsite) *****	0	Not searched	Not searched	Not searched	Not searched	0
Distance Interval Totals	4	14	14	6(5)	0	38(5)

Search Radius: * 1 Mile Search Radius ** 1/2 Mile Search Radius *** 1/4 Mile Search Radius **** 1/8 Mile Search Radius ***** on-site only

Numbers in ( ) indicate spills not mapped and profiled, and are found in the tables at the end of the active and closed spills sections.
See these tables for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

Bridge St
Sag Harbor, NY 11963

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
1	SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet	NYSDEC Inactive Haz Waste Site
2	SAG HARBOR AT BRIDGE STREET	BRIDGE STREET	0 feet	CERCLIS/NYSDEC Inactive Haz Waste Site
31	LILCO - SAG HARBOR GAS PLANT	BRIDGE ST S OF LONG ISLAND AVE	0 feet	Hazardous Waste Generator/Transporter
4	LILCO, SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet	Hazardous Substance Waste Disposal Site

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
13		MAIN STREET/ RTE 114	634 feet to the NNE	Closed Status Spill (Unk/Other Cause)
36	MOREBECK CAMERA	DBA CAMERA CONCEPTS #5MAIN ST	615 feet to the NE	Hazardous Waste Generator/Transporter
34	WHALERS CLEANERS	MAIN STREET	459 feet to the ENE	Hazardous Waste Generator/Transporter
20	WHALERS PHARMACY	MAIN ST/WHALERS PHARMACY	460 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
35	Village of Sag Harbor	Main Street, P. O. Box 660	572 feet to the ENE	Hazardous Waste Generator/Transporter
25	SAG HARBOR VILLAGE MUNICIPAL B	MAIN ST	590 feet to the ENE	Petroleum Bulk Storage Site
21	VILLAGE OF SAG HARBOR	MAIN STREET	608 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
32	EAST END LITHOGRAPHIC CORP	BRIDGE STREET	105 feet to the SW*	Hazardous Waste Generator/Transporter
33	CHEKSEA CROSSING 1 HOUR PHOTO	12 LONG ISLAND AVE	363 feet to the SW	Hazardous Waste Generator/Transporter
9	WHALES MARINA	W WATER ST	440 feet to the WSW	Closed Status Tank Test Failure
12	WHALEN MARINA CONSTRUCTIO	LONG WHARF	440 feet to the WSW	Closed Status Spill (Unk/Other Cause)
24	WHALER'S MARINA INC.	WEST WATER ST	440 feet to the WSW	Petroleum Bulk Storage Site
11	UNK	BRIDGE ST & LI AVENUE	172 feet to the NW*	Closed Status Spill (Unk/Other Cause)

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
23	DYNAMIC DUCE	8 BAY ST.	1020 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
29	BAYVIEW MARINE & TACKLE	BAY ST	1258 feet to the E	Petroleum Bulk Storage Site
30	SAGLUND RESTAURANT	BAY ST	1316 feet to the E	Petroleum Bulk Storage Site

17	SAG HARBOR YACHT YARD	BAY STREET	1464 feet to the E	Closed Status Spill (Unk/Other Cause)
18	SUSPECT MOTOR SAUNDRA D	BAY ST & BURK STREET	1693 feet to the E	Closed Status Spill (Unk/Other Cause)
7		BURKE STREET/BAY STREET	1694 feet to the E	Active Haz Spill (Unknown/Other Cause)
19	MOBIL	BAY STREET	1873 feet to the E	Closed Status Spill (Unk/Other Cause)
5	MOBIL SAG HARBOR	1201 ELM STREET PO BOX 130	2025 feet to the E	Major Oil Storage Facility
37	BULOVA	15 CHURCH ST	1137 feet to the ESE	Hazardous Waste Generator/Transporter
3	BULOVA WATCH FACTORY	WASHINGTON STREET	1157 feet to the ESE	NYSDEC Inactive Haz Waste Site
10	ST.ANDREW'S CHURCH	DIVISION STREET	1695 feet to the ESE	Closed Status Tank Test Failure
22	LILCO	MAIN STREET/SPRING STREET	760 feet to the SE	Closed Status Spill (Misc. Spill Cause)
6	UNK	BULOVA WATCH CASE	1134 feet to the SE	Active Haz Spill (Unknown/Other Cause)
16	BULOVA CORP	WASHINGTON STREET	1134 feet to the SE	Closed Status Spill (Unk/Other Cause)
28	BULOVA WATCH	CHURCH ST	1147 feet to the SE	Petroleum Bulk Storage Site
8	US POSTAL SERVICE	LONG ISLAND AVENUE	662 feet to the WSW	Closed Status Tank Failure
26	SAG HARBOR POST OFFICE	21 LONG ISLAND AVE	664 feet to the WSW	Petroleum Bulk Storage Site
27	MALLOY SAG HARBOR COVE WEST MA	50 W WATER ST	828 feet to the WSW	Petroleum Bulk Storage Site
14	BARON'S COVE MARINA	W. WATER ST	829 feet to the WSW	Closed Status Spill (Unk/Other Cause)
15	JOEL LAZAR	BARON'S COVE MARINA	829 feet to the WSW	Closed Status Spill (Unk/Other Cause)

Identified Toxic Sites by Proximity

Bridge St, Sag Harbor, NY 11963

* Compass directions can vary substantially for sites located very close to the subject property address.

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
1	SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet	NYSDEC Inactive Haz Waste Site
2	SAG HARBOR AT BRIDGE STREET	BRIDGE STREET	0 feet	CERCLIS/NYSDEC Inactive Haz Waste Site
31	LILCO - SAG HARBOR GAS PLANT	BRIDGE ST S OF LONG ISLAND AVE	0 feet	Hazardous Waste Generator/Transporter
4	LILCO, SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet	Hazardous Substance Waste Disposal Site
32	EAST END LITHOGRAPHIC CORP	BRIDGE STREET	105 feet to the SW*	Hazardous Waste Generator/Transporter
11	UNK	BRIDGE ST & LI AVENUE	172 feet to the NW*	Closed Status Spill (Unk/Other Cause)
33	CHEKSEA CROSSING 1 HOUR PHOTO	12 LONG ISLANG AVE	363 feet to the SW	Hazardous Waste Generator/Transporter
9	WHALES MARINA	W WATER ST	440 feet to the WSW	Closed Status Tank Test Failure
12	WHALEN MARINA CONSTRUCTIO	LONG WHARF	440 feet to the WSW	Closed Status Spill (Unk/Other Cause)
24	WHALER'S MARINA INC.	WEST WATER ST	440 feet to the WSW	Petroleum Bulk Storage Site
34	WHALERS CLEANERS	MAIN STREET	459 feet to the ENE	Hazardous Waste Generator/Transporter
20	WHALERS PHARMACY	MAIN ST/WHALERS PHARMACY	460 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
35	Village of Sag Harbor	Main Street, P. O. Box 660	572 feet to the ENE	Hazardous Waste Generator/Transporter
25	SAG HARBOR VILLAGE MUNICIPAL B	MAIN ST	590 feet to the ENE	Petroleum Bulk Storage Site
21	VILLAGE OF SAG HARBOR	MAIN STREET	608 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
36	MOREBECK CAMERA	DBA CAMERA CONCEPTS #5MAIN ST	615 feet to the NE	Hazardous Waste Generator/Transporter
13		MAIN STREET/ RTE 114	634 feet to the NNE	Closed Status Spill (Unk/Other Cause)
8	US POSTAL SERVICE	LONG ISLAND AVENUE	662 feet to the WSW	Closed Status Tank Failure
26	SAG HARBOR POST OFFICE	21 LONG ISLAND AVE	664 feet to the WSW	Petroleum Bulk Storage Site
22	LILCO	MAIN STREET/SPRING STREET	760 feet to the SE	Closed Status Spill (Misc. Spill Cause)
27	MALLOY SAG HARBOR COVE WEST MA	50 W WATER ST	828 feet to the WSW	Petroleum Bulk Storage Site
14	BARON'S COVE MARINA	W. WATER ST	829 feet to the WSW	Closed Status Spill (Unk/Other Cause)
15	JOEL LAZAR	BARON'S COVE MARINA	829 feet to the WSW	Closed Status Spill (Unk/Other Cause)
23	DYNAMIC DUCE	8 BAY ST.	1020 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
6	UNK	BULOVA WATCH CASE	1134 feet to the SE	Active Haz Spill (Unknown/Other Cause)
16	BULOVA CORP	WASHINGTON STREET	1134 feet to the SE	Closed Status Spill (Unk/Other Cause)
37	BULOVA	15 CHURCH ST	1137 feet to the ESE	Hazardous Waste Generator/Transporter
28	BULOVA WATCH	CHURCH ST	1147 feet to the SE	Petroleum Bulk Storage Site
3	BULOVA WATCH FACTORY	WASHINGTON STREET	1157 feet to the ESE	NYSDEC Inactive Haz Waste Site
29	BAYVIEW MARINE & TACKLE	BAY ST	1258 feet to the E	Petroleum Bulk Storage Site
30	SAGLUND RESTAURANT	BAY ST	1316 feet to the E	Petroleum Bulk Storage Site
17	SAG HARBOR YACHT YARD	BAY STREET	1464 feet to the E	Closed Status Spill (Unk/Other Cause)
18	SUSPECT MOTOR SAUNDRA D	BAY ST & BURK STREET	1693 feet to the E	Closed Status Spill (Unk/Other Cause)
7		BURKE STREET/BAY STREET	1694 feet to the E	Active Haz Spill (Unknown/Other Cause)
10	ST.ANDREW'S CHURCH	DIVISION STREET	1695 feet to the ESE	Closed Status Tank Test Failure
19	MOBIL	BAY STREET	1873 feet to the E	Closed Status Spill (Unk/Other Cause)
5	MOBIL SAG HARBOR	1201 ELM STREET PO BOX 130	2025 feet to the E	Major Oil Storage Facility

Identified Toxic Sites by Category

Bridge St
Sag Harbor, NY 11963

* Compass directions can vary substantially for sites located very close to the subject property address.

CERCLIS/NYSDEC Inactive Hazardous Waste Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
2	SAG HARBOR AT BRIDGE STREET	BRIDGE STREET	0 feet

NYSDEC Inactive Hazardous Waste Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet
3	BULOVA WATCH FACTORY	WASHINGTON STREET	1157 feet to the ESE

Hazardous Substance Waste Disposal Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
4	LILCO, SAG HARBOR GAS PLANT	BRIDGE STREET	0 feet

Major Oil Storage Facilities

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
5	MOBIL SAG HARBOR	1201 ELM STREET PO BOX 130	2025 feet to the E

Active Haz Spills (Unknown Causes & Other Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
6	UNK	BULOVA WATCH CASE	1134 feet to the SE
7		BURKE STREET/BAY STREET	1694 feet to the E

Closed Status Tank Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
8	US POSTAL SERVICE	LONG ISLAND AVENUE	662 feet to the WSW

Closed Status Tank Test Failures

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
9	WHALES MARINA	W WATER ST	440 feet to the WSW
10	ST.ANDREW'S CHURCH	DIVISION STREET	1695 feet to the ESE

Closed Status Spills (Unknown Causes & Other Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
11	UNK	BRIDGE ST & LI AVENUE	172 feet to the NW*
12	WHALEN MARINA CONSTRUCTIO	LONG WHARF	440 feet to the WSW
13		MAIN STREET/ RTE 114	634 feet to the NNE
14	BARON'S COVE MARINA	W. WATER ST	829 feet to the WSW
15	JOEL LAZAR	BARON'S COVE MARINA	829 feet to the WSW
16	BULOVA CORP	WASHINGTON STREET	1134 feet to the SE
17	SAG HARBOR YACHT YARD	BAY STREET	1464 feet to the E
18	SUSPECT MOTOR SAUNDRA D	BAY ST & BURK STREET	1693 feet to the E
19	MOBIL	BAY STREET	1873 feet to the E

Closed Status Spills (Miscellaneous Spill Causes)

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
20	WHALERS PHARMACY	MAIN ST/WHALERS PHARMACY	460 feet to the ENE
21	VILLAGE OF SAG HARBOR	MAIN STREET	608 feet to the ENE
22	LILCO	MAIN STREET/SPRING STREET	760 feet to the SE
23	DYNAMIC DUCE	8 BAY ST.	1020 feet to the ENE

Petroleum Bulk Storage Sites

MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
24	WHALER'S MARINA INC.	WEST WATER ST	440 feet to the WSW
25	SAG HARBOR VILLAGE MUNICIPAL B	MAIN ST	590 feet to the ENE
26	SAG HARBOR POST OFFICE	21 LONG ISLAND AVE	664 feet to the WSW
27	MALLOY SAG HARBOR COVE WEST MA	50 W WATER ST	828 feet to the WSW
28	BULOVA WATCH	CHURCH ST	1147 feet to the SE
29	BAYVIEW MARINE & TACKLE	BAY ST	1258 feet to the E
30	SAGLUND RESTAURANT	BAY ST	1316 feet to the E

Hazardous Waste Generators, Transporters

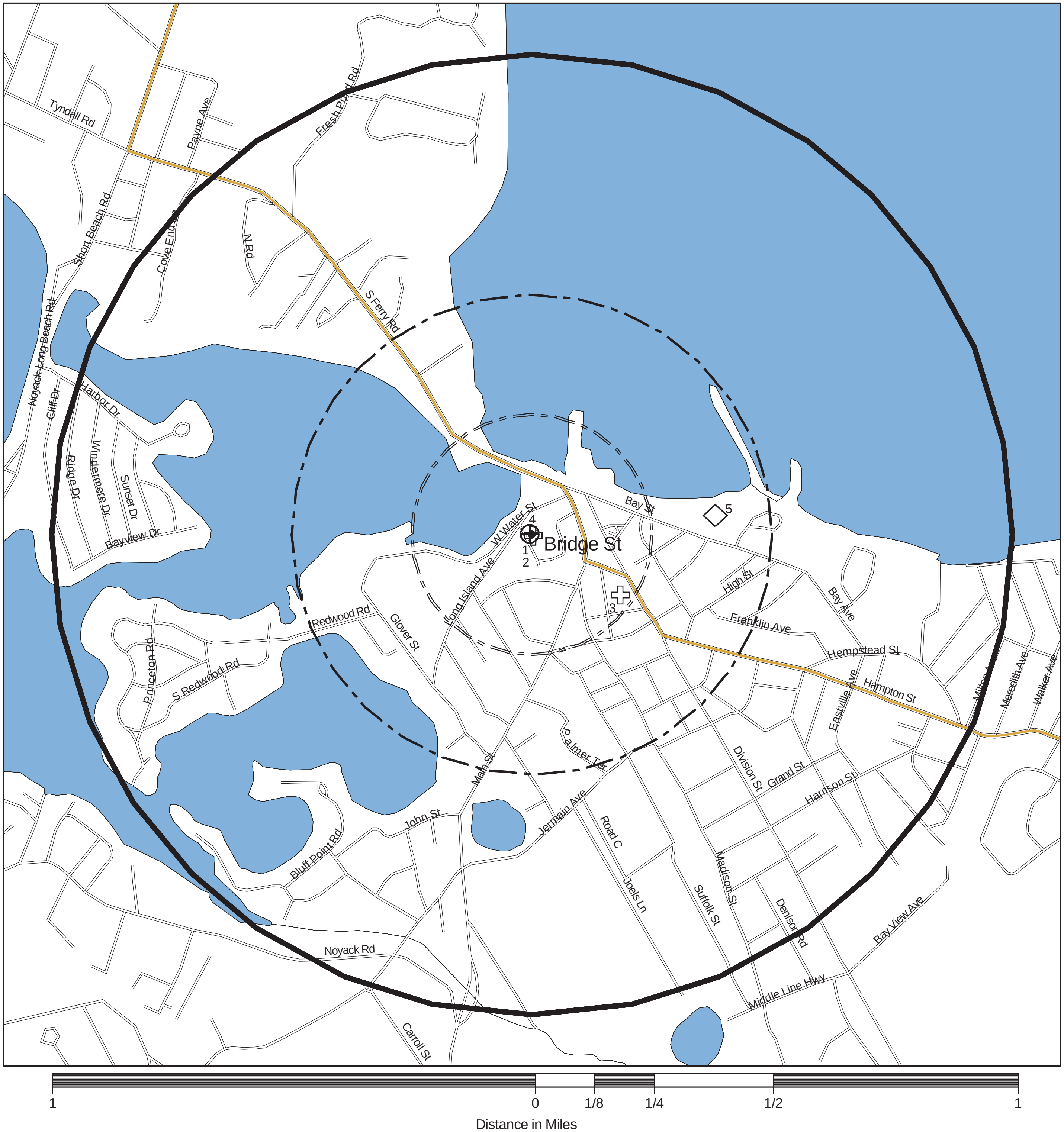
MAP ID#	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
31	LILCO - SAG HARBOR GAS PLANT	BRIDGE ST S OF LONG ISLAND AVE	0 feet
32	EAST END LITHOGRAPHIC CORP	BRIDGE STREET	105 feet to the SW*
33	CHEKSEA CROSSING 1 HOUR PHOTO	12 LONG ISLANG AVE	363 feet to the SW
34	WHALERS CLEANERS	MAIN STREET	459 feet to the ENE
35	Village of Sag Harbor	Main Street, P. O. Box 660	572 feet to the ENE

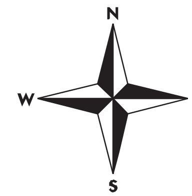
36	MOREBECK CAMERA	DBA CAMERA CONCEPTS #5MAIN ST	615 feet to the NE
37	BULOVA	15 CHURCH ST	1137 feet to the ESE

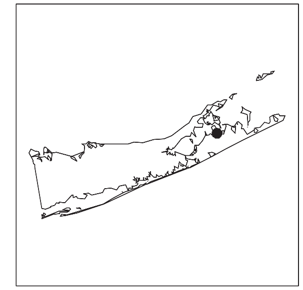
Toxics Targeting
1 Mile Radius Map

Bridge St

Sag Harbor, NY 11963







Suffolk County

NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Disposal Site

Hazardous Waste Treater, Storer, Disposer

Hazardous Substance Waste Disposal Site

Solid Waste Facility

Major Oil Storage Facility

Site Location

Waterbody

Minor Roads

Major Roads

Expressways

County Border

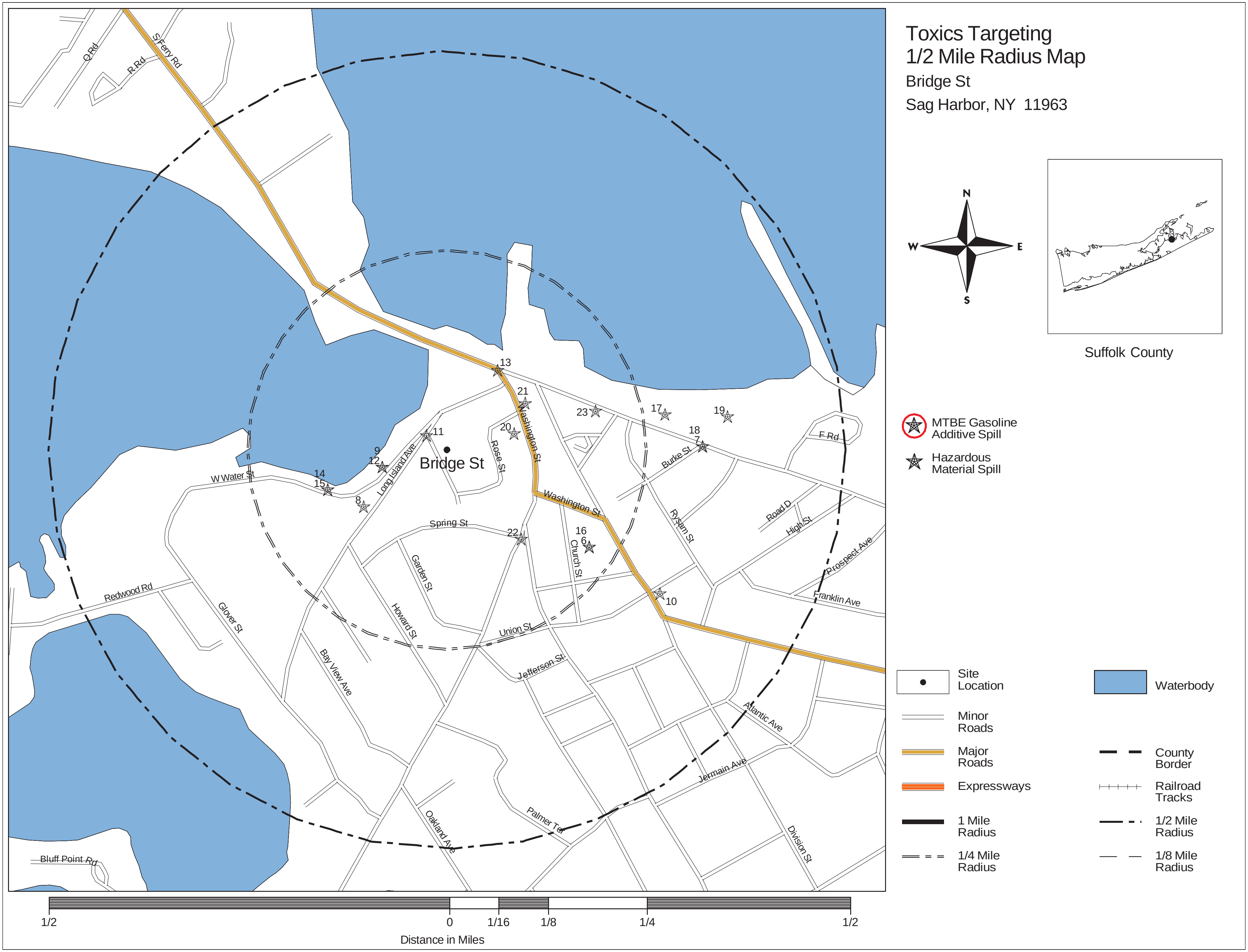
Railroad Tracks

1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

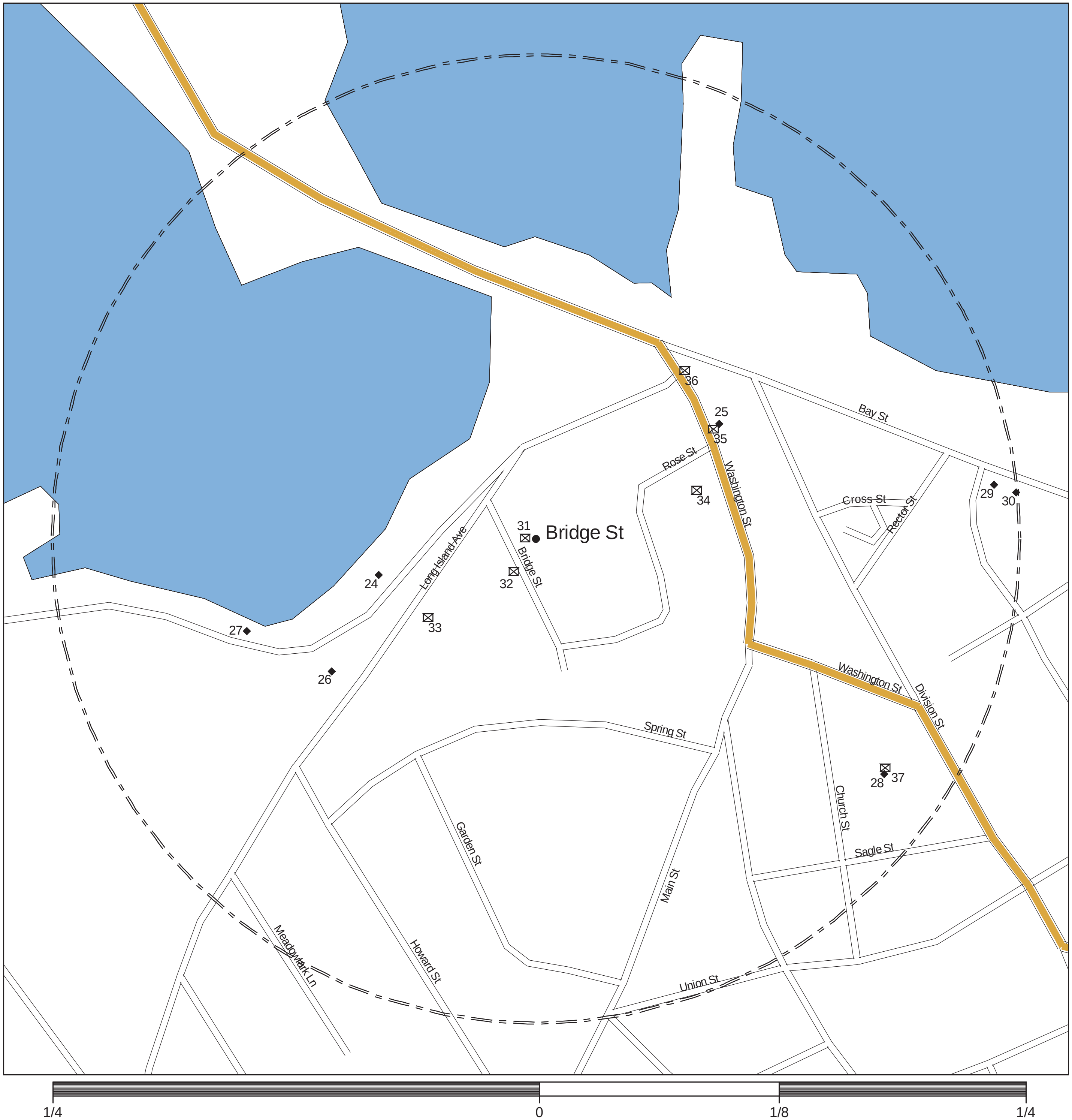


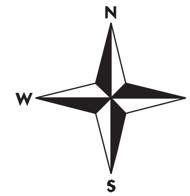
Toxics Targeting
1/2 Mile Radius Map
Bridge St
Sag Harbor, NY 11963
Suffolk County
N
S
W
E
MTBE Gasoline Additive Spill
Hazardous Material Spill
Site Location
Waterbody
Minor Roads
Major Roads
Expressways
County Border
Railroad Tracks
1 Mile Radius
1/2 Mile Radius
1/4 Mile Radius
1/8 Mile Radius
Bridge St
S Ferry Rd
Q Rd
R Rd
Washington St
Rose St
Long Island Ave
W Water St
Spring St
Garden St
Church St
Burke St
Rysam St
Road D
High St
Prospect Ave
Franklin Ave
F Rd
Redwood Rd
Glover St
Howard St
Union St
Jefferson St
Bay View Ave
Atlantic Ave
Jermain Ave
Oakland Ave
Palmer Ter
Division St
Bluff Point Rd
1/2
0
1/16
1/8
1/4
1/2
Distance in Miles

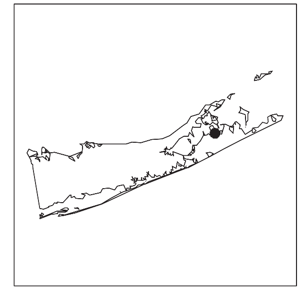
Toxics Targeting
1/4 Mile Radius Map

Bridge St

Sag Harbor, NY 11963







Suffolk County

Chemical Storage Facility

Hazardous Waste Generator, Transp.

Toxic Release

Air Release

Wastewater Discharge

Civil Enforcement Docket Facility

Petroleum Bulk Storage Facility

Site Location

Waterbody

Minor Roads

Major Roads

County Border

Expressways

Railroad Tracks

1 Mile Radius

1/2 Mile Radius

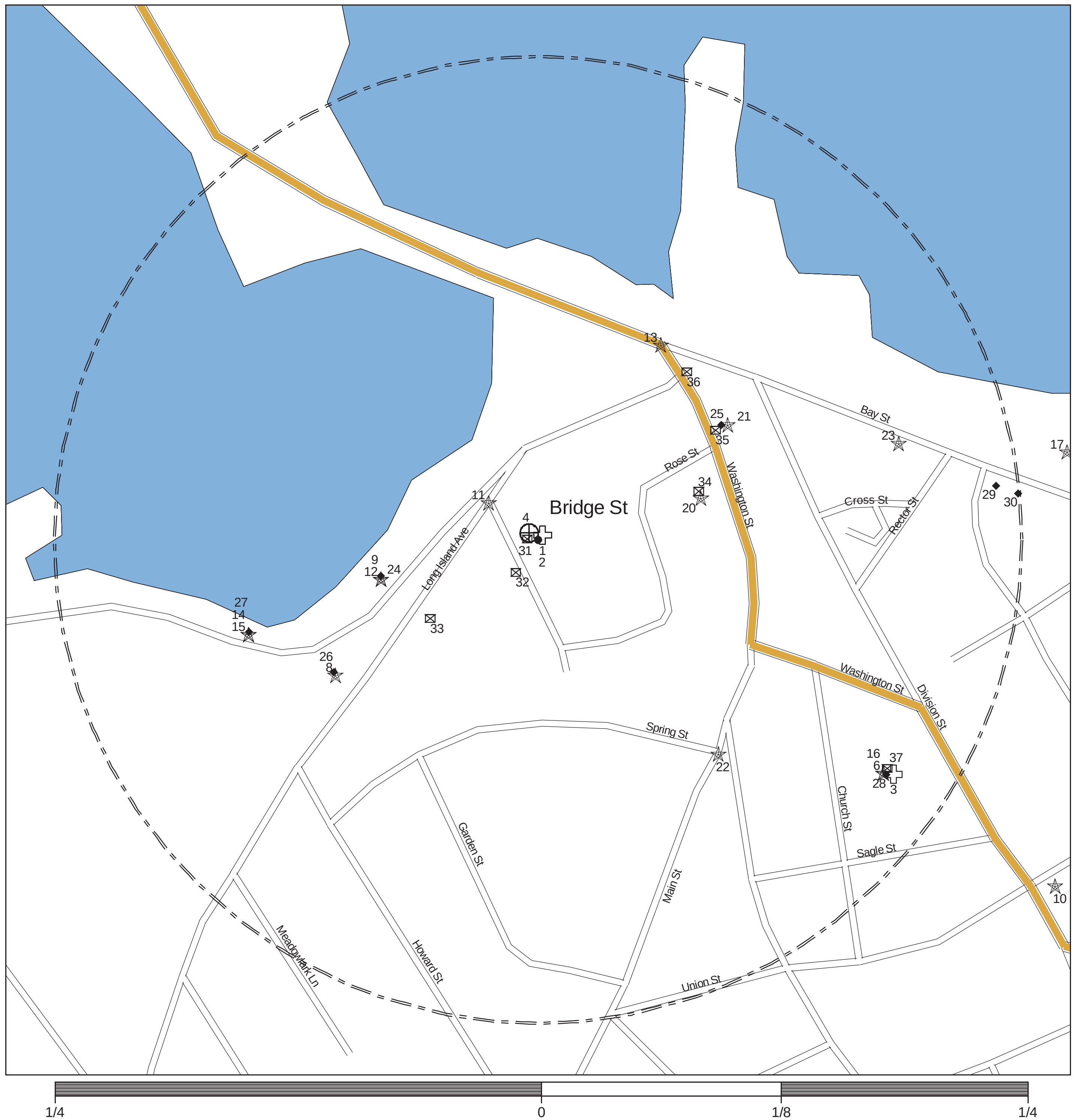
1/4 Mile Radius

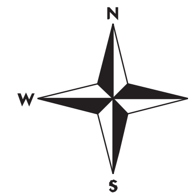
1/8 Mile Radius

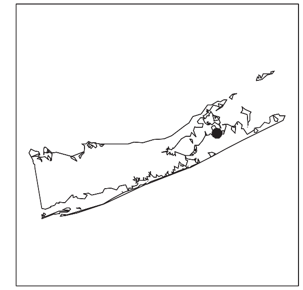
Toxics Targeting
1/4 Mile Closeup Map

Bridge St

Sag Harbor, NY 11963







Suffolk County

NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Disposal Site *

Hazardous Waste Treater, Storer, Disposer *

Hazardous Substance Waste Disposal Site *

Major Oil Storage Facility *

Chemical Storage Facility ***

Toxic Release ***

Wastewater Discharge ***

Petroleum Bulk Storage Facility ***

MTBE Gasoline Additive Spill

Solid Waste Facility *

Hazardous Material Spill **

Hazardous Waste Generator, Transp. ***

Air Release ***

Civil Enforcement Docket Facility ***

Site Location

Waterbody

Minor Roads

Major Roads

Expressways

1 Mile Radius

1/4 Mile Radius

County Border

Railroad Tracks

1/2 Mile Radius

1/8 Mile Radius

* 1 Mile Search Radius

** 1/2 Mile Search Radius

*** 1/4 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code (This information does not appear in the headings for Inactive Hazardous Waste Disposal Sites).
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers;
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites (A complete description of the codes follows the profiles section).

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced)

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications: 1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;

2 -- Significant threat to the public health or environment -- action required;

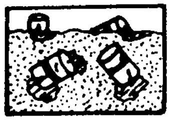
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;

4 -- Site properly closed --requires continued management;

5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;

2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law.

$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed)



*** NPL/CERCLIS/INACTIVE HAZARDOUS WASTE DISPOSAL SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ***

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **SAG HARBOR GAS PLANT** **Facility Id: 152159**
BRIDGE STREET SAG HARBOR NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: BRIDGE ST S OF LONG ISLAND AVE
Revised zip code: NO CHANGE

SITE DESIGNATION: NPL- CERCLIS- NYSDEC REGISTRY-X

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 152159
CLASSIFICATION CODE: 2 REGION: 1 EPA ID:
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: Sag Harbor Gas Plant
STREET ADDRESS: Bridge Street
TOWN/CITY: Sag Harbor ZIP: 11963 COUNTY: Suffolk

SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond- ESTIMATED SIZE: 0.8 Acre

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S):
NAME.....: Long Island Lighting Company (LILCO)
ADDRESS..: 175 East Old Country Road, Hicksville, NY 11801
OWNER DURING DISPOSAL:
NAME.....: Town of Southampton
OPERATOR(S) DURING DISPOSAL:
NAME.....: Town of Southampton
ADDRESS..: 116 Hampton Road, Southampton, NY 11968

HAZARDOUS WASTE DISPOSAL PERIOD: from 1859 to 1929

SITE DESCRIPTION:

Between 1859 and 1929, a town gas plant was operated on this 0.8 acre site. Manufactured gas was made from either coal or rosin. After LILCO purchased the site in 1929, the gas plant ceased operations and a pressurized gas holder was installed. The site was originally studied by the NYSDEC and the USEPA under the more inclusive Sag Harbor Bridge Site. The Bridge Street area was first identified as an area of concern in 1987 when Suffolk County Water Authority personnel discovered environmental contamination when performing an excavation on Bridge Street. It is unknown whether the former Sag Harbor Gas Plant was the source of this contamination. Manufactured gas wastes, consisting primarily of aromatic volatile organics and polycyclic aromatic hydrocarbons, have been found on LILCO's parcel. The surface soils and the underlying groundwater have been impacted. Three separate studies were completed by USEPA in 1988, 1989, and 1990. A State funded Preliminary Site Assessment (PSA) was completed in 1993. The results of a 1996 LILCO funded investigation, which included the construction and sampling of 6 monitoring wells on the LILCO parcel, has recently been provided to the NYSDEC and resulted in the listing of this parcel. Discharges of coal gas wastes have impacted the surface soils and underlying groundwater. The concentrations of benzene in the groundwater indicate that leachable benzene above the TCLP limit of 0.5 mg/l is present. High levels of toluene, ethylbenzene, xylenes and various polynuclear aromatic hydrocarbons (PAHs) are also present in the groundwater. Surface soils also contain high levels of PAHs.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
Benzene (D018) Waste	unknown

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-	Groundwater-X	Soil-X	Sediment-
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Sand and gravel
GROUNDWATER DEPTH: Less than 1 foot

LEGAL ACTION:	Type:		State-	Federal-
STATUS:	Negotiation in Progress-		Order Signed-	
REMEDIAL ACTION:	Proposed-	Under Design-	In Progress-	Completed-
NATURE OF ACTION:				

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
The underlying groundwater is contaminated primarily by aromatic volatile organics and various polycyclic aromatic hydrocarbons at concentrations above groundwater standards. A groundwater plume may pass beneath nearby properties. Because groundwater is only less than one foot below ground surface, vapors emanating from groundwater are possible.

ASSESSMENT OF HEALTH PROBLEMS:
Disposal of coal gas wastes at this site has contaminated on-site soil and groundwater with elevated levels of polyaromatic hydrocarbons, toluene, ethylbenzene and xylenes. Since homes and business near this site are connected to public water, exposure to site related contaminants in drinking water is not expected. Due to the shallow depth of groundwater the potential exists for the migration of volatilized contaminants to nearby residential and commercial properties. Further investigation of this site is necessary to fully evaluate the extent of contaminants and potential pathways of exposure.

Map Identification Number 2 **SAG HARBOR AT BRIDGE STREET** **Facility Id: 152126**
BRIDGE STREET SAG HARBOR NY 11963

EPA Facility Name: SAG HARBOR BRIDGE STREET EPA Facility Id: NYD986869170
BRIDGE STREET SAG HARBOR NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

SITE DESIGNATION: NPL- CERCLIS-X NYSDEC REGISTRY-X

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 152126
CLASSIFICATION CODE: D1 REGION: 1 EPA ID: NYD986869170
CLASSIFICATION CODE DESCRIPTION:
Delisted site - hazardous waste not found

NAME OF SITE: Sag Harbor at Bridge Street
STREET ADDRESS: Bridge Street
TOWN/CITY: Sag Harbor ZIP: 11963 COUNTY: Suffolk

SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond- ESTIMATED SIZE: 4 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S):
NAME.....: Dean Golden
ADDRESS..: PO Box 209, East Hampton, NY 11937
OWNER DURING DISPOSAL:
NAME.....:
OPERATOR(S) DURING DISPOSAL:
NAME.....: Rowe Industries
ADDRESS..: Bridgehampton Turnpike, Sag Harbor, NY 11963

HAZARDOUS WASTE DISPOSAL PERIOD: from Unknown to Unknown

SITE DESCRIPTION:
Undocumented accounts of skin irritation were reported by construction workers of the Suffolk County Water Authority who were excavating soil on Bridge Street.The excavation work took place across the street from a printing company that was previously owned by Rowe Industries. An environmental investigation was conducted at this location shortly after the skin irritation reports. As part of the investigation, fourteen soil borings were made. Subsurface soil analysisrevealed contamination by th e following; volatile organics up to 1.8 ppm, petro-leum hydrocarbons up to 380 ppm, DDT and DDE at 0.8 ppm. Monitoring wells were also installed. Analytical results revealed the presence of volatile, semi-vol-atile organics and metals in the groundwat er. The following contaminants were noted in monitoring well No. 3; benzene at 140 ppb, toluene at 38 ppb, ethyl- benzene at 290 ppb, napthalene at 1000 ppb, methylnaphalene at 210 ppb, acenaph-thene at 290 ppb, phenanthrene at 120 ppb, lead at 81 pp b, cyanide at 20

ppb, copper at 37 ppb, petroleum hydrocarbons at 4700 ppb, arsenic at 13 ppb and zincat 2100 ppb. A Screening Site Investigation Report and a listing Site Inspection Report were prepared for the USEPA in 1989 and 1990 for areas east and west of the northern portion of the Bridge Street site. The listed site is only a portion of the Sag Harbor Bridge Street study area. A Preliminary Site Assessment (PSA) over a similar area was completed in 1993. The results of the PSA did not prove the presence of hazardous waste at this site.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY

ANALYTICAL DATA AVAILABLE FOR: Air- Surface Water- Groundwater-X Soil-X Sediment-
APPLICABLE STANDARDS EXCEEDED IN: Groundwater-X Drinking Water-X Surface Water- Air-

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Sand and gravel
GROUNDWATER DEPTH: Less than 5 feet

LEGAL ACTION: Type: None State- Federal-
STATUS: Negotiation in Progress- Order Signed-
REMEDIAL ACTION: Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION: None

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
There are no environmental problems associated with the disposal of hazardous waste at this site.

ASSESSMENT OF HEALTH PROBLEMS:
None provided

****

USEPA COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)

SITE INFORMATION

EPA-ID: NYD986869170 Site-ID: 0200911
Site Name: SAG HARBOR BRIDGE STREET
Site Street: BRIDGE STREET
Site City/State/Zip: SAG HARBOR, NY 11963

NFRAP (No Further Remedial Activity Planned) Indicator:

Owner Indicator: Unknown NPL Status Indicator: Not on the NPL
Incident Type: USGS Hydrological Unit: 02030202
Incident Category: RCRA Flag:
Federal Facility Flag: Not a Federal Facility

OPERABLE UNIT INFORMATION

Operable Unit ID: 00 Operable Unit Name: SITEWIDE

ACTION INFORMATION

Name:	DISCOVERY	Current Plan Start Date:	
Lead:	State, Fund Financed	Current Plan Completion Date:	
Qualifier:		Actual Start Date:	
Category:		Actual Completion Date:	19880601
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	
IFMS Entry:	No Entry into IFMS		

Name:	PRELIMINARY ASSESSMENT	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:	High	Actual Start Date:	19881101
Category:		Actual Completion Date:	19881101
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Remedial
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

Name:	SITE INSPECTION	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:	High	Actual Start Date:	19890228
Category:		Actual Completion Date:	19890331
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Remedial
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

Name:	REMOVAL ASSESSMENT	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:		Actual Start Date:	19900110
Category:		Actual Completion Date:	19901129
Planning Status:	Primary	Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Removal
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

Name:	EXPANDED SITE INSPECTION	Current Plan Start Date:	
Lead:	EPA Fund-Financed	Current Plan Completion Date:	
Qualifier:	NFRAP (No Futher Remedial Action Planned)	Actual Start Date:	19901201
Category:		Actual Completion Date:	19901201
Planning Status:		Operable Unit ID:	00
Anomaly Indicator:		Financial Budget Source:	Remedial
IFMS Entry:	Both Intramural and Extramural Entry into IFMS		

FINANCIAL INFORMATION

No financial information was provided

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Benzene (I,T)	71432	X	X	X	X	X	5 ug/L
Benzene, methyl-	108883	X	X	X	X	X	5 ug/L
Ethylbenzene	100414	X	X	X	X	X	5 ug/L
Cyanides (soluble cyanide salts), not otherwise specified	57125	X					
Lead	7439921	X	X	X	X		0.05mg/L*
Arsenic	7440382	X	X	X	X		0.05mg/L*
	85018	X	X	X			50 ug/L
Naphthalene	91203	X	X		X	X	50 ug/L
Zinc	7440666	X				X	
Copper	7440508	X	X		X		

Map Identification Number 3   **BULOVA WATCH FACTORY**   **Facility Id: 152139**
WASHINGTON STREET   SAG HARBOR NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 1157 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

SITE DESIGNATION: NPL-   CERCLIS-   NYSDEC REGISTRY-X

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 152139
CLASSIFICATION CODE: 2   REGION: 1   EPA ID:
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: Bulova Watch Factory
STREET ADDRESS: Washington Street
TOWN/CITY: Sag Harbor   ZIP: 11963   COUNTY: Suffolk

SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond-   ESTIMATED SIZE: 2.3 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S):
NAME.....: Watch Case Factory Assoc. c/o estate
ADDRESS..: 1928 Midline, Syosset, NY
OWNER DURING DISPOSAL:
NAME.....: Bulova Watch
OPERATOR(S) DURING DISPOSAL:

NAME.....: Bulova Watch
ADDRESS..: Washington Street, Sag Harbor, NY 11963

HAZARDOUS WASTE DISPOSAL PERIOD: from 1936 to 1981

SITE DESCRIPTION:
This site was a former textile plant that was converted to watch manufacturing at the turn of the century. Watch manufacturing operations included: tooling, pressing, forming, machining, soldering, polishing, solvent cleaning, and plating. Chlorinated solvents, 1,1,1-TCA and TCE, were used in intermediate cleaning operations and have been detected in the unsaturated site soils up to 513 ppb and 1,000 ppb respectively. TCE, 1,1,1-TCA, 1,1-DCE and PCE have been detected in downgradient wells at levels up to 10,000 ppb, 3,9000 ppb, 1,100 ppb and 83 ppb respectively. A soil gas survey has identified the courtyard as one source of contamination. In 1994, Bulova signed a CO to construct an air sparging/SVE system. The system was operated in the inner and northwest courtyards. A full Remedial Order was signed in September, 1995. The PRP has completed the on-site and off-site RI. A ROD was signed in December 1996, specifying continued operation and monitoring of the air sparge/SVE system. A leaking underground storage tank containing # 2 fuel oil is being addressed by the Spill Response program. Recent groundwater sampling data indicated that the groundwater cleanup criteria have been met in the Northwest Courtyard (downgradient) area. As a result, the Northwest Courtyard remedial system has been shut down since June 1997. The results of soil cleanup confirmatory sampling conducted on August 5,1997 revealed that the SVE system had extracted VOCs in the unsaturated zone to soil cleanup standards. Based on these results and the low concentrations of VOCs in the extracted soil vapor, a decision was made to temporarily turn off the Interior Courtyard remedial system in September 1997. However, based on recent groundwater sampling data, the Interior Courtyard remedial system was re-started on December 22, 1997 and then was shutdown again in March 1998. Post shutdown monitoring has shown a VOC rebound within MW-11 which is located in the Inner Courtyard. The NYSDEC has given the site owner permission to permanently shutdown and dismantle the SVE/Air Sparging system and the system was shutdown in March, 1999.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
1,1,1-Trichloroethane (F001, F002, U226 Waste)	unknown
Trichloroethylene (F001, F002, U228 Waste)	unknown

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-	Groundwater-X	Soil-X	Sediment-
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-X	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Sand and gravel
GROUNDWATER DEPTH: 12 to 15 feet

LEGAL ACTION:	Type: Remed. Program Order		State-X	Federal-
STATUS:	Negotiation in Progress-		Order Signed-X	
REMEDIAL ACTION:	Proposed-	Under Design-	In Progress-	Completed-X
NATURE OF ACTION:	Soil Vapor Extraction/Air Sparging System			

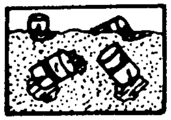
ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Groundwater contamination at this site has been confirmed. The direction that the contaminant plume is traveling in indicates that discharge to the Cove has occurred.

ASSESSMENT OF HEALTH PROBLEMS:
Groundwater from the site is contaminated, and Suffolk County Water Authority maps indicate that not all homes in

the area between the site and Sag Harbor Cove are connected to the public water supply. Suffolk County Health Department Services sampled 10 private water supplies in the area and found no site related contamination. The former factory grounds have been remediated to allow the site to be used for residential purposes. Air in the building will be tested before renovations begin.

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Trichloroethylene	79016	X	X	X	X	X	5 ug/L
Ethene, 1,1,2,2-tetrachloro-	127184	X	X	X	X	X	5 ug/L
Ethane, 1,1,1-trichloro-	71556	X	X	X	X	X	5 ug/L



**** HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 4   LILCO, SAG HARBOR GAS PLANT   Site Number Id HS1019   Registry ID 152126
BRIDGE STREET   VILL. OF SAG HARBOR NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Hazardous Waste Remediation
Hazardous Substance Waste Disposal Site Study

Inventory Status: Removed from the Hazardous Substance Inventory
Reason site did not qualify for the Inventory:
Registry Site

SITE INFORMATION

Site Name: LILCO, SAG HARBOR GAS PLANT
Site Street: BRIDGE STREET
Site City: VILL. OF SAG HARBOR
Site Zip: 11963
Region: 1

Site Number: HS1019
Registry: Yes
Registry Site ID: 152126
RCRA: No
EPA ID: NYD986869170

US EPA No Further Remedial Action Planned? False

Site Code: 2A
Description: COAL GASIFICATION PLANT

Acres: 0.80
Completed Investigation? PSA
Is Site Active: No
Years of Operation: to 1929

Quadrangle: GREENPORT
HRS Score:
HRS Date:

Site Description:
Prior to 1929, a town gas plant was located on the site. Manufactured gas was made from either coal or rosin. After LILCO purchased the site, the gas plant ceased operations and a pressurized gas holder was installed. Now the site is used by LILCO to store and regulate gas supplies. There are a gas storage

container and three tanks on the site. The Sag Harbor Gas Plant site is a portion of Sag Harbor Bridge Street study area, registry site #152126. Previous investigations by USEPA and NYSDEC have been conducted for the more inclusive Sag Harbor Bridge Street Site. The site includes 12 owners of separate properties. Suffolk County Water Authority personnel complained of skin irritation during construction of a sewer along Bridge Street. An investigation by Storch Associates indicated high levels of lead.

Owner:	Private	Operator:	PUBL
Owner Name:	LONG ISLAND LIGHTING CO.	Operator Name:	Unknown
Owner Street:	175 EAST OLD COUNTRY RD.	Operator Street:	Unknown
Owner City/ZIP/State:	HICKSVILLE, NY 11801	Operator City/ZIP/State:	
Owner Telephone:	(516)391-6132	Operator Telephone:	Unknown

SITE IMPACT DATA

Affected Media:

		Hazardous Substance Exposed?	Yes
Contamination of...		Controlled Site Access?	Yes
...Surface Water?	Unknown	Ambient Air Contamination?	Unknown
...Groundwater?	Yes	Threat of Direct Contact?	Yes
...Drinking Water?	Unknown	Documented Fish or Wildlife Mortality?	No
Surface Water Class:	Unknown	Impact on Special Status Fish or Wildlife Resource?	Unknown
Groundwater Class:	Sole	Active Drinking Water Supply?	Yes

Descriptions:

Surface Water:
Nearest surface water - 100 ft northwest

Groundwater:
Nearest groundwater depth - less than 1 ft flowing west or southwest

Drinking Water:
Nearest water supply 1200 ft southwest

Fish or Wildlife Mortality: None provided
Special Status Fish or Wildlife Resource: None provided

Building:
Nearest building 100 ft southwest, residential (Harbor Close Condominiums)

THREAT TO THE ENVIRONMENT OR PUBLIC HEALTH

Threat to the Environment or the Public Health: Environment/Public Health

Threat Posed by Disposed Hazardous Substance:
Surface soils on the Sag Harbor Gas Plant (SHGP) site contain high levels of polycyclic aromatic hydrocarbons (PAH's). Direct contact with these soils is possible. The site is fenced. All shallow soil samples for SHGP were collected at or near the water table. Groundwater was seen in many of the soil borings at less than 2'

below grade. Therefore, this data suggests that groundwater has been affected due to former surface discharges at SHGP. A suspected source of these PAH's is the former coal gas plant that operated on the site prior to 1929. The PAH's detected are common constituents found in coal tars. Groundwater samples from an unsecured and poorly designed monitoring well along the southern border of the site contained the same PAH's as found in nearby soil samples an SHGP although petroleum related spills on the adjacent property is another possible source of the contamination found in this well. The groundwater reportedly flows towards the west or southwest. With this flow, the contaminated groundwater is headed towards the nearby Harbor Close Condominiums. Due to the shallow depth to water and the floating nature of many of the contaminatns, there is a potential for vapors to enter these homes. Three private wells on Meadowlark Lane are located approximately 1,200 ft. to the southwest of the site. Additionally, the area is prone to flooding, thereby possibly allowing the surface contaminants to migrate to adjacent properties. Samples at nearby residential property have detected PAH contamination, however, the source of this contamination has not been established. Due to the closeness of Sag Harbor Cove, there is the possiblility that contaminants will reach this salt water body by surface runoff or by groundwater discharge into this water body. Many tentatively identified compounds (TIC's) were found in the semi−volatile analyses. All soil samples were collected at or near the water table. Groundwater from an unsecured monitoring well adjacent to the site detected the following in significant concentrations: benzene, ethylbenzene, xylenes,

HAZARDOUS SUBSTANCES DISPOSED:

VOCs: Yes Semi−VOCs: Yes PCBs: No Pesticides: No Metals: No Asbestos: No

Hazardous Substances Disposed:

Surface soils (less than 2' deep) are contaminated with the following semivolatiles: naphthalene (91−20−3), 2−mehtylnaphthalene (91−57−6), acenaphthylene (208−96−8)m acenaphthene (83−32−9), flourene (86−73−7), phenanthrene (85−01−8), anthracene (120−12−7), fluoranthene (206−44−0), pyrene (129−00−0), benzo(a)anthracene (56−55−3), chrysene (218−01−9), Benzo(b)fluoranthene (205−99−2), benzo(k)flouranthene (207−08−9), benzo(a)pyrene (50−32−8), indeno(1,2,3−cd)pyrene (193−39−5), dibenzo(a,h)anthracene (53−70−3), benzo(g,h,i)perylene (191−24−2), and dibenzofuran (132−64−9). Ethylbenzene (CAS#100−41−4) and xylenes (1330−20−7) were detected in several soils samples at low concentrations.

SELECTED ANALYTICAL INFORMATION:

Samples Collected:

Groundwater, Surface Soil, Subsurface Soil

Air: None provided
Surface Water: None provided

Surface Soil:

LSI for USEPA − soil sample towards the center of site (western side) at 12" − 14" (water table approximately 8") detected 54 ppm naphthalene, 69 ppm of 2−methylnaphthalene, 50 ppm acenaphthylene, 130 ppm acenaphthene, 9.1 ppm dibenzofuran, 110 ppm fluorene, 330 ppm phenanthrene, 140 ppm anthracene, 210 ppm fluoranthene, 280 ppm pyrene, 98 ppm dibenzo(g,h,i)perylene, and2,336 ppm (estimated) TIC's. The total of all semi−volatiles detected in this sample including TIC's is 4,183 ppm. Four other surface soil samples (12" − 24", 0"−8", 0"−6", and 0"−12") from the LSI have detected simi−volatiles at concentrations similar in magnitude. (additional data on file at NYSDEC)

Waste: None provided
EPToxicity: None provided

Groundwater:
PSA for NYSDEC − groundwater sample from unsecured MW−3 located near the southern border of site (western side) − 870D ppb benzene, 10j ppb chlorobenzene, 10j ppb chloromethane, 260D ppb ethylbenzene, 25j ppb touluene, 150D ppb xylene (total), 600D ppb acenaphthene, 23j ppb acenaphthylene, 130j ppb anthracene, 60j ppb benzo(a)anthracene, 50j ppb benzo(a)pyrene, 22j ppb benzo(b)flouranthene, 30j ppb benzo(g,h,i)perylene, 33j ppb benzo(k)flouranthene, 95j ppb chrysene, 5j ppb dibenzo(a,h)anthracene, 18j ppb debenzofuran, 6j ppb 2,4−dimethylphenol, 44j ppb flouranthene, 120j ppb flourene, 27j, ppb indeno(1,2,3−cd)purene, 650D ppb 2−methylnaphthalene, 2400D ppb naphthalene, 690D ppb phenanthrene, 18 ppb phenol, and 43j ppb pyrene. Petroleum related spills on adjacent property may be another source of the groundwater contamination.

Sediment: None provided

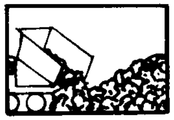
Subsurface Soil:
see surface memo

Leachate: None provided
TCLP: None provided

AGENCY INFORMATION:

Regulatory Agencies Involved:
USEPA

Preparer:
Robert R. Stewart (wsk) DHWR, Region 1 Environmental Engineer 1 September 19, 1994



**** NO SOLID WASTE FACILITIES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ****

*** OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1 MILE SEARCH RADIUS ***

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 5   **MOBIL SAG HARBOR**   **Facility Id 1-1480**
1201 ELM STREET PO BOX 130   DALLAS, TX 75221

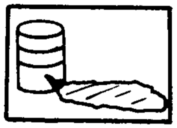
MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 2025 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: BAY ST
Revised zip code: 11963

TANK NUMBER	TANK STATUS	PETROLEUM PRODUCT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE

NO TANK INFORMATION WAS REPORTED FOR THIS SITE

**** NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1 MILE SEARCH RADIUS ****



HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, and Vandalism.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, and Vandalism.

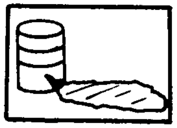
All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one-eighth mile in Manhattan) are mapped and profiled.

Between 0.25 mile (or one-eighth mile in Manhattan) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;
* Tank Test Failures;
* Unknown Spill Cause or Other Spill Cause;
* Spills greater than 100 units of quantity; and
* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one-eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.



NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compasss directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 6 **UNK** **Spill Number: 9501433** **Close Date:**

BULOVA WATCH CASE SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 1134 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 15 CHURCH ST
Revised zip code: 11963

Source of Spill: UNKNOWN
Spiller: UNK
Spiller Phone:
Notifier Type: DEC
Notifier Name:
Notifier Phone:
Caller Name: DAVE MILLER
Caller Agency: NY ENCON
Caller Phone: (518) 457-3395
DEC Investigator: RRD WELL
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
05/04/1995		UNKNOWN	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: 8" OF PRODUCT IN WELL

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 7 **Spill Number: 9801809** **Close Date:**

BURKE STREET/BAY STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1694 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: UNKNOWN
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: POLICE DEPARTMENT
Notifier Name: OFFICER #792
Notifier Phone: (516) 324-0777
Caller Name: DISP #124
Caller Agency: SAG HARBOR PD
Caller Phone: (516) 324-0777
DEC Investigator: AUSTIN
Contact for more spill info: OFFICER HATCH
Contact Person Phone: (516) 324-0777

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

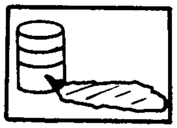
Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended

05/12/1998	UNKNOWN	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: THERE IS AN 8FT X 4FT OIL-WATER MIXTURE RISING TO THE SURFACE ON A PARCEL OF LAND AT THE ABOVE LOCATION - PD & FD ON SCENE REQUESTING A RESPONSE FROM DEC

DEC Investigator Remarks: aLSO REPORTED AS 9801810



NO ACTIVE HAZARDOUS SPILLS - MISC. SPILL CAUSES - EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, AND VANDALISM - IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 Mile. Between 1/4 Mile and 1/2 Mile, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled.
Spills reported to be less than 100 units are listed in a table at the end of this section.

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, OR VANDALISM. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 8 **US POSTAL SERVICE** **Spill Number: 8905290** **Close Date:10/17/1994**
LONG ISLAND AVENUE SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 662 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: US POSTAL SERVICE
Spiller Phone:
Notifier Type: TANK TESTER
Notifier Name:
Notifier Phone:
Caller Name: HAROLD GOLDBERG
Caller Agency: USPO
Caller Phone: (516) 755-2974
DEC Investigator: LEUNG WELL
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
08/29/1989	10/17/1994	TANK FAILURE	GROUNDWATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: 1300 GALS LEFT IN TANK, HOLE APPROX 30-38 " FROM BOTTOM. 1500 GAL TANK

DEC Investigator Remarks: 10/17/94: TANK REMOVED, CONT SOIL REMOVED, 4 WELLS INSTALLED,NO FLOATING PRODUCT FOUND, DISSOLVED IS ND TO 5PPB.

CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 9 **WHALES MARINA** **Spill Number: 8701533** **Close Date:12/05/1988**
W WATER ST
SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 440 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: WHALERS MARINA
Spiller Phone: (516) 725-4332
Notifier Type: TANK TESTER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: O'NEILL FD
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
05/26/1987	12/05/1988	TANK TEST FAILURE	GROUNDWATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
GASOLINE	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: 2K REG LEADED FAILED/UNTESTABLE

DEC Investigator Remarks: / / : G&M DEGE TESTER.12/05/88: TANK WAS REMOVED 6/4/87. 3 YDS OF CONT SOIL WAS STOCKPILED. SPILL CAN BE CLOSED PENDING DISPOSAL OF SOIL.

Map Identification Number 10 **ST.ANDREW'S CHURCH** **Spill Number: 8706110** **Close Date:08/02/1988**
DIVISION STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1695 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER NON COMM/INSTITUTIONAL
Spiller: ST.ANDREW'S CHURCH
Spiller Phone: (516) 725-0125
Notifier Type: TANK TESTER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: GOERTZ   FD
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
10/20/1987	08/02/1988	TANK TEST FAILURE	GROUNDWATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	0.000	TANK TESTING METHOD NOT GIVEN IN DATA	0.	UNKNOWN

Caller Remarks: LEAK RATE -.426 SYSTEM TEST.

DEC Investigator Remarks: / / : WILL UNCOVER AND RETEST. G&M DEGE TESTER. 08/02/88: F&N RETESTED 4K SYSTEM AFTER AIR POCKET WAS BLED & PASSED.3K TANK WAS REMOVED BY MPC. 45 YDS OF CONT SOIL WAS REMOVED. SPILL CAN BE CLOSED PENDING DISPOSAL.

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 11 **UNK** **Spill Number: 8909871** **Close Date:02/06/1990**
BRIDGE ST & LI AVENUE SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 172 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: BRIDGE ST / LONG ISLAND AVE
Revised zip code: 11963

Source of Spill: UNKNOWN
Spiller: UNK
Spiller Phone:
Notifier Type: POLICE DEPARTMENT
Notifier Name:
Notifier Phone:
Caller Name: OFFICER SABIANO
Caller Agency: SAG HARBOR P.D
Caller Phone: (516) 725-0058
DEC Investigator: HOFMANN
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
01/14/1990	02/06/1990	UNKNOWN	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
PCB OIL	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: NOTIFIED ECO

DEC Investigator Remarks: 01/18/90: REFERRED TO TONY CANDELA-SOLID & HAZ WASTE.

Map Identification Number 12 **WHALEN MARINA CONSTRUCTIO** **Spill Number: 8802709** **Close Date:05/06/1991**
LONG WHARF SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 440 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: VESSEL
Spiller: WHALEM MARINA CONSTRUCTIO
Spiller Phone:
Notifier Type: FEDERAL GOVERNMENT
Notifier Name:
Notifier Phone:
Caller Name: JOSEPH BILLOTO
Caller Agency: DEC
Caller Phone: (516) 329-1944
DEC Investigator: GOMEZ
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/25/1988	05/06/1991	UNKNOWN	SURFACE WATER	UNKNOWN	NO

Material	Material	Quantity	Unk Quantity	Quantity	Unk Quantity

Spilled	Class	Spilled	Units	Spilled ?	Recovered	Units	Recovered ?
DIESEL	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: NO ACTION AS OF YET. COAST GUARD HAS BEEN NOTIFIED.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 13 **Spill Number: 9601158 Close Date:10/04/1996**
MAIN STREET/ RTE 114 SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 634 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: MAIN ST / BAY ST
Revised zip code: 11963

Source of Spill: GASOLINE STATION
Spiller: HARBOR COVE REALTY
Spiller Phone: (516) 725-4333
Notifier Type: FIRE DEPARTMENT
Notifier Name: JOHN MANGINO
Notifier Phone:
Caller Name: DOROTHY
Caller Agency: SO HAMPTON FIRE MARSHALLS
Caller Phone: (516) 288-0201
DEC Investigator: DECANDIA
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
04/23/1996		UNKNOWN	ON LAND	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	YES	0.000	GALLONS	NO

Caller Remarks: caller just relaying what she knows - soil contaminated - location is now a realty office

DEC Investigator Remarks: CLEANUP BY RP, DISPOSAL REC‘VD

Map Identification Number 14 **BARON‘S COVE MARINA** **Spill Number: 9411252 Close Date:01/31/1995**
W. WATER ST SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 829 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: UNKNOWN
Spiller: UNK
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: JOHN WAGNER, ATTY
Caller Agency:
Caller Phone: (516) 369-1700
DEC Investigator: ACAMPORA
Contact for more spill info:
Contact Person Phone:

Spill Class: POSSIBLE RELEASE WITH MINIMAL POTENTIAL FOR FIRE OR HAZARD (OR KNOWN RELEASE WITH NO DAMAGE);HIGHLY IMPROBABLE

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
11/22/1994	01/31/1995	UNKNOWN	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: CALLED PREV. TO REPORT A LEAK ON FRI & WHEN DEC ENGINEER RESPONDED & FOUND ANOTHER LEAK, 1ST LEAK STOPPED - DEC THERE NOW. SITE MGR IS CONTACTING CONTRACTOR TO TURN OFF FUEL SUPPLY.

DEC Investigator / / : SEE 94-11106.
Remarks:

Map Identification Number 15 **JOEL LAZAR** **Spill Number: 8703608** **Close Date:08/05/1987**
BARON'S COVE MARINA SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 829 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: 'BARON''S COVE MARINA'
Revised zip code: 11963

Source of Spill: VESSEL
Spiller: JOEL LAZAR
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: O'BRIEN FD
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
07/31/1987	08/05/1987	OTHER	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
DIESEL	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: MPC RECOVERED 2000 GAL DIESEL/WATER WHEN PUMPED FUEL/BILGES 5 DRUMS OF ABSORBANTS.

DEC Investigator / / : VESSEL IS RAISED NOW,DISPOSAL OF ABSORBANTS.
Remarks:

Map Identification Number 16 **BULOVA CORP** **Spill Number: 9103395** **Close Date:10/16/1992**
WASHINGTON STREET SAG HARBOR, NY NO ZIP PROVIDED
MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 1134 feet to the SE
ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: BULOVA CORP
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: ALBERT TONN
Caller Agency: G.W TECHN
Caller Phone: (516) 472-4000
DEC Investigator: GOMEZ
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;HIGHLY IMPROBABLE

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
06/26/1991	10/16/1992	UNKNOWN	GROUNDWATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: SITE OF OLD FACTORY, LEAKAGE POSS FROM FORMER SITE OF U/G FUEL OIL TANKS, FOUND PRODUCT ON WATER IN SITE WELL & MIDDLE OF SITE ASSESSMENT FOUND OIL,PLAN TO COMPLETE SITE ASSESSMENT

DEC Investigator Remarks: 10/16/92: PER CONVERSATION W/T CANDELA, SITE TO BE LISTED AS INACTIVE HAZ WASTE SITE, RIFS WILL BE DONE.

Map Identification Number 17 **SAG HARBOR YACHT YARD** **Spill Number: 9613266** **Close Date:02/12/1997**
BAY STREET SAG HARBOR, NY NO ZIP PROVIDED
MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1464 feet to the E
ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: SAG HARBOR YACHT YARD
Spiller Phone: (516) 725-3838
Notifier Type: OTHER
Notifier Name: PAUL STEWART
Notifier Phone:
Caller Name: LOU GRIGNON
Caller Agency: SAG HARBOR YACHT YARD
Caller Phone: (516) 725-3838
DEC Investigator: LEUNG
Contact for more spill info: LOU GRIGNON
Contact Person Phone: (516) 725-3838

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
02/08/1997		UNKNOWN	ON LAND	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
DIESEL	PETROLEUM	15.000	GALLONS	NO	0.000	GALLONS	YES

Caller Remarks: CALLER STATES THEY WERE TRANSFERING FUEL LAST WEEK AND THERE WAS A SPILL − THE SUBJ LISTED AS THE SPILLER TOLD HIM THAT THE SPILL WAS CLEANED UP − CALLER SAYS THAT DUE TO RAIN THE LAST FEW DAYS HE RCVD A CALL STATING THE SPILL HAS APPEARED AGAIN − HE WENT THERE THIS MORNING AND PLACED PADS DOWN TO TRY TO SOAK UP MORE MATERAL CALLER WOULD LIKE A CALL FROM DEC ON MONDAY TO TALK ABOUT THE SPILL AS THIS AREA WAS ONCE A MOBIL OIL TANK FARM

DEC Investigator Remarks: REFERRED TO 96−12963

Map Identification Number 18 **SUSPECT MOTOR SAUNDRA D** **Spill Number: 9105238** **Close Date:08/16/1991**
BAY ST & BURK STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1693 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: BAY ST / BURKE ST
Revised zip code: 11963

Source of Spill: VESSEL
Spiller: SUSPECT MOTOR SAUNDRA D
Spiller Phone:
Notifier Type: DEC
Notifier Name:
Notifier Phone:
Caller Name: ECO HATCH
Caller Agency: LAW ENFORCEMENT
Caller Phone: (516) 751-7900
DEC Investigator: NONE
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
08/14/1991	08/16/1991	UNKNOWN	SURFACE WATER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
DIESEL	PETROLEUM	100.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: SPILL CAME OUT OF BILGE PIPE FROM BOAT. ECO TO GET MORE DETAILS ON SPILL. USCG RESPONDING,

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 19 **MOBIL** **Spill Number: 8607632** **Close Date:11/09/1992**
BAY STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 1873 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: NON-MAJOR FACILITY (>1100 GAL)
Spiller: MOBIL OIL CORP
Spiller Phone: (516) 371-1527
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name: J. MORRIS
Caller Agency: LILCO
Caller Phone: (516) 725-9575
DEC Investigator: GOMEZ WELL
Contact for more spill info:
Contact Person Phone:

Spill Class: KNOWN RELEASE THAT CREATES POTENTIAL FOR FIRE OR HAZARD;DEC RESPONSE;WILLING RP;CORRECTIVE ACTION TAKEN

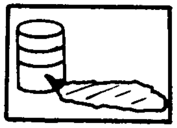
Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended

03/10/1987	11/09/1992	UNKNOWN	GROUNDWATER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
UNKNOWN PETROLEUM	PETROLEUM	0.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: LILCO CREW DISCOVERED OIL IN DITCH WHILE EXCAVATING FOR LINE NEAR OLD STORAGE FACILITY

DEC Investigator Remarks: / / : DEC HIRED PEDNEAULT.03/16/87: DEC HIRED PEDNEAULT TO DO FINGERPRINT ANALYSIS AND PCB ANALYSIS ON SAMPLE FROM EXCAVATION.07/29/87: DEC SENT LETTER TO MOBIL REQUIRING INVESTIGATION OF CONTAMINATION AT THE MOBIL PROPERTY.08/21/87: MOBIL SENT LETTER STATING THAT THEY HAD ALREADY INITIATED SITE ASSESSMENT AND WILL FOLLOWUP WITH REMEDIAL MEASURES.



CLOSED STATUS HAZARDOUS SPILLS - MISC. SPILL CAUSES - EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, AND VANDALISM - IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 Mile. Between 1/4 Mile and 1/2 Mile, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled.
Spills reported to be less than 100 units are listed in a table at the end of this section.

* - Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 20 **WHALERS PHARMACY** **Spill Number: 8606560** **Close Date:01/26/1987**
MAIN ST/WHALERS PHARMACY SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 460 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: MAIN ST./WHALERS PHARMACY
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: WHALERS PHARMACY
Spiller Phone:
Notifier Type: OTHER
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: ACAMPORA FD
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
01/24/1987	01/26/1987	EQUIPMENT FAILURE	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	100.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: BASEMENT FLOOR AFFECTED, WILL START CLEANUP. SUMP PUMP IN BASEMENT. COULD HAVE BEEN PUMPED INTO SEWER.

DEC Investigator Remarks: / / : BRANCH SERVICES HIRED BY SPILLER. 15 YRDS REMOVED.

Map Identification Number 21 **VILLAGE OF SAG HARBOR** **Spill Number: 9111087** **Close Date:01/27/1992**
MAIN STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 608 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER NON COMM/INSTITUTIONAL
Spiller: VILLAGE OF SAG HARBOR
Spiller Phone:
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name: PAUL NAPOLITANO
Caller Agency: BRANCH SERVICES
Caller Phone: (516) 563-7300
DEC Investigator: NONE
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
01/27/1992	01/27/1992	EQUIPMENT FAILURE	ON LAND	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
#2 FUEL OIL	PETROLEUM	1.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: BOILER MISS FIRED, CONTAINED ON CONCRETE SLAB, SORBENT APPLIED & PICKED UP, CONCRETE SCRUBBED, CLEANUP BY BRANCH SERVICES, NO RESPONSE NEEDED

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 22 **LILCO** **Spill Number: 8607284** **Close Date:03/26/1987**
MAIN STREET/SPRING STREET SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 760 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: OTHER COMM/INDUSTRIAL
Spiller: LILCO
Spiller Phone:
Notifier Type: RESPONSIBLE PARTY
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: PARISH FD
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
03/02/1987	03/26/1987	EQUIPMENT FAILURE	IN SEWER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
NON PCB OIL	PETROLEUM	46.000	GALLONS	NO	0.000	GALLONS	NO

Caller Remarks: POLE #15.

DEC Investigator Remarks: / / : MPC TO PUMP. / / : MPC TO PUMP OUT SD. 3/25/87 ALL IS CLEAN.ONLY EVIDENCE OF SPILL IS BLACK SPOT ON PAVEMENT.

Map Identification Number 23 **DYNAMIC DUCE** **Spill Number: 9104825** **Close Date:08/04/1991**
8 BAY ST. SAG HARBOR, NY NO ZIP PROVIDED

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 1020 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

Source of Spill: VESSEL
Spiller: CAPT. MATHEW ROBINSON
Spiller Phone: (803) 272-7918
Notifier Type: POLICE DEPARTMENT
Notifier Name:
Notifier Phone:
Caller Name: DISPATCHER
Caller Agency: EAST HAMPTON PD
Caller Phone: (516) 324-0777
DEC Investigator: HAAS
Contact for more spill info:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Resource Affected	Meets Cleanup Standards	Penalty Recommended
08/04/1991	08/04/1991	TANK OVERFILL	SURFACE WATER	UNKNOWN	YES

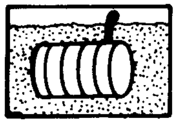
Material Spilled	Material Class	Quantity Spilled	Units	Unk Quantity Spilled ?	Quantity Recovered	Units	Unk Quantity Recovered ?
DIESEL	PETROLEUM	25.000	GALLONS	NO	20.000	GALLONS	NO

Caller Remarks: TANK OVERFILLED ON BOAT. P.O.KARNUTH USCG NOTIFIED AT 12:15 PHONE CONV. WITH ECO PAUL HATCH: HAVE SPILLER ON SITE, THEY ATTEMPTED CLEANUP WITH PADS, AREA TOO LARGE

DEC Investigator Remarks: / / : CAPTAIN PAID $250 FINE???.08/04/91: E HAMPTON PD REPORTS OVERFILLING OF TANK ON BOAT. ECO HATCH ON SCENE WITH SPILLER. 08/04/91: DEC (HAAS) RESPOND. AS PER ECO HATCH, TANK WAS OVERFILLED, RESULTING IN ~25GAL OF DIESEL SPILLING INTO HARBOR. 08/04/91: AS PER HATCH: CAPTAIN IS BRET ROBINSON BOX 4212 1002B (AS PER ECO NOTES; SPILL NOTES SAY 102B AND 1002B) PERRIN DR N MYRTLE BEACH SC 29597 803-272-7918 LICENSE #642014 USCG. 08/04/91: AS PER HATCH: VESSEL IS "DYNAMIC DUCE" DOC # 683186 61FT 1985 HATTERAS #3820295. OWNER IS W. CECIL WARSKY JR 10 CARDINAL DR WILMINGTON NC 28416 919-395-5300(W) 919-256-2081(H). 08/04/91: HATCH HAD MANAGED TO CLEAN UP SPILL WITH PADS. HE ISSUED TICKET # 050306-4 FOR ECL VIOLATION 130345-2 ; WILL RECOMMEND MAXIMUM PENALTY. HIS NOTES SAY CONTACT RICHARD BASS AT 919-395-5300. 08/04/91: CAPTAIN COULD NOT ARRANGE FOR DISPOSAL OF PADS, SO DEC HIRED MPC TO DO SO. (ONE DRUM SORBENTS). 01/10/92: DEC TO CLOSE REGIONAL FILE.

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, OR VANDALISM. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY
9612963	SAG HARBOR YACHT YARD	BAY STREET	SAG HARBOR
9105859	ST ANDREWS SCHOOL	DIVISION STREET	SAG HARBOR
9413250	GIFFORDS	67 BAY STREET	SAG HARBOR
9105534	SUSAN ROTHENBERG/MOBIL OI	BAY & BURKE STREET	SAG HARBOR
9703425		LONG ISLAND AVE/GLOVERS S	SAG HARBOR



**** PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS ****

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 24 **WHALER'S MARINA INC.** **Facility Id 9-0155** **Source: SUFF. HEALTH DEPT**
WEST WATER ST
SAG HARBOR, NY 11963

MAP LOCATION INFORMATION	ADDRESS CHANGE INFORMATION
Site location mapped by: MANUAL MAPPING (4)	Revised street: NO CHANGE
Approximate distance from property: 440 feet to the WSW	Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	REMOVED - MARKED FOR REMOVAL 1987 (CONFIRMED)	GASOLINE	2000	OUTDOOR UNDER			01/01/87
2	REMOVED - MARKED FOR REMOVAL 1987 (CONFIRMED)	GASOLINE	2000	OUTDOOR UNDER			01/01/87

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
GASOLINE	8006619	X	X			X	

Map Identification Number 25 **SAG HARBOR VILLAGE MUNICIPAL B** **Facility Id 9-0358** **Source: SUFF. HEALTH DEPT**
MAIN ST
SAG HARBOR, NY 11963

MAP LOCATION INFORMATION	ADDRESS CHANGE INFORMATION
Site location mapped by: MANUAL MAPPING (2)	Revised street: NO CHANGE
Approximate distance from property: 590 feet to the ENE	Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	REMOVED - MARKED FOR REMOVAL 1995 (CONFIRMED)	#2 FUEL OIL	1000	OUTDOOR UNDER			09/11/95
2	NEVER INSTALLED	#2 FUEL OIL	1000	OUTDOOR UNDER	89		

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
#2 FUEL OIL	68476302	X	X			X	

Map Identification Number 26 SAG HARBOR POST OFFICE Facility Id 9-0473 Source: SUFF. HEALTH DEPT
21 LONG ISLAND AVE SAG HARBOR, NY

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 664 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE

NO TANK INFORMATION WAS REPORTED FOR THIS SITE

Map Identification Number 27 MALLOY SAG HARBOR COVE WEST MA Facility Id 9-0154 Source: SUFF. HEALTH DEPT
50 W WATER ST SAG HARBOR, NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 828 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: W WATER ST
Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	PERMITTED - EXPIRED 1989	GASOLINE	4000	OUTDOOR UNDER	84		
2	PERMITTED - EXPIRED 1989	GASOLINE	4000	OUTDOOR UNDER	84		
3	REMOVED - MARKED FOR REMOVAL 1984 (CONFIRMED)	OTHER	2000	OUTDOOR UNDER			01/01/84
4	REMOVED - MARKED FOR REMOVAL 1984 (CONFIRMED)	OTHER	1000	OUTDOOR ABOVE			01/01/84

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
GASOLINE	8006619	X	X			X	

Map Identification Number 28 **BULOVA WATCH** **Facility Id 9-0370** **Source: SUFF. HEALTH DEPT**
CHURCH ST SAG HARBOR, NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 1147 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 15 CHURCH ST
Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	REMOVED - MARKED FOR REMOVAL 1990 (CONFIRMED)	#2 FUEL OIL	5000	OUTDOOR UNDER			02/01/90
2	REMOVED - MARKED FOR REMOVAL 1990 (CONFIRMED)	#2 FUEL OIL	1000	OUTDOOR UNDER			02/01/90

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
#2 FUEL OIL	68476302	X	X			X	

Map Identification Number 29 **BAYVIEW MARINE & TACKLE** **Facility Id 3-0101** **Source: SUFF. HEALTH DEPT**
BAY ST SAG HARBOR, NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1258 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	REMOVED - MARKED FOR REMOVAL 1987 (CONFIRMED)	GASOLINE	1000	OUTDOOR UNDER	75		01/01/87

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
GASOLINE	8006619	X	X			X	

Map Identification Number 30 **SAGLUND RESTAURANT** **Facility Id 3-0108** **Source: SUFF. HEALTH DEPT**
BAY ST SAG HARBOR, NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 1316 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

TANK NO.	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	PERMIT ISSUED	REMOVED DATE
1	REMOVED - MARKED FOR REMOVAL 1986 (CONFIRMED)	GASOLINE	550	OUTDOOR UNDER	60		01/01/86
2	REMOVED - MARKED FOR REMOVAL 1994 (CONFIRMED)	#2 FUEL OIL	1000	OUTDOOR UNDER			10/21/94

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
GASOLINE	8006619	X	X			X	
#2 FUEL OIL	68476302	X	X			X	

*** HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ***

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 31 **LILCO - SAG HARBOR GAS PLANT** **Facility Id NYR000007500**
BRIDGE ST S OF LONG ISLAND AVE SAG HARBOR, NY 11963
EPA (FINDS) Name: LILCO - SAG HARBOR GAS PLANT
EPA (FINDS) Address: BRIDGE ST S OF LONG ISLAND AVE SAG HARBOR, 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 0 feet

ADDRESS CHANGE INFORMATION
Revised street: BRIDGE ST
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: LARGE QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported to NYS.				

Map Identification Number 32 **EAST END LITHOGRAPHIC CORP** **Facility Id NYD097532113**
BRIDGE STREET SAG HARBOR, NY 11963
EPA (FINDS) Name: EAST END LITHOGRAPH CORP.
EPA (FINDS) Address: BRIDGE STREET SAG HARBOR, 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 105 feet to the SW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator:
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:

(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	No hazardous waste activity reported to NYS 1/89 to 1/1/99.				

Map Identification Number 33 **CHEKSEA CROSSING 1 HOUR PHOTO** **Facility Id NYD987029139**
12 LONG ISLAND AVE SAG HARBOR, NY 11963
EPA (FINDS) Name: CHELSEA CROSSINGS 1 HOUR PHOTO
EPA (FINDS) Address: 11 W WATER ST & LONG ISLAND SAG HARBOR, 11962

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 363 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 12 LONG ISLAND AVE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D011	Silver	1155	GALLONS	GENERATED	98

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Silver	7440224		X				0.05mg/L*

Map Identification Number 34 **WHALERS CLEANERS** **Facility Id NYD010001816**
MAIN STREET
SAG HARBOR, NY 11963
EPA (FINDS) Name: WHALERS CLEANERS
EPA (FINDS) Address: 7 MAIN ST SAG HARBOR, 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 459 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
F002	Spent halogenated solvents	1425	POUNDS	GENERATED	98

Map Identification Number 35 **Village of Sag Harbor** **Facility Id NYN100052373**
Main Street, P. O. Box 660
Sag Harbor, NY 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (2)
Approximate distance from property: 572 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: MAIN ST
Revised zip code: NO CHANGE

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
NONE	No hazardous waste activity reported to NYS 1/89 to 1/1/99.				

Map Identification Number 36 **MOREBECK CAMERA** **Facility Id NYD987037645**
DBA CAMERA CONCEPTS #5MAIN ST SAG HARBOR, NY 11963
EPA (FINDS) Name: MORBECK CAMERA DBA CAMERA CONCEPTS #5
EPA (FINDS) Address: MAIN ST SAG HARBOR, 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 615 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 5 MAIN ST
Revised zip code: NO CHANGE

US EPA RCRA Type: Generator: SMALL QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR
D011	Silver	230	GALLONS	GENERATED	94

Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Silver	7440224		X				0.05mg/L*

Map Identification Number 37 **BULOVA** **Facility Id NY0000099002**
15 CHURCH ST SAG HARBOR, NY NO ZIP PROVIDED
EPA (FINDS) Name: BULOVA CORP
EPA (FINDS) Address: 15 CHURCH ST SAG HARBOR, 11963

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (1)
Approximate distance from property: 1137 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11963

US EPA RCRA Type: Generator: LARGE QUANTITY GENERATOR
Land Disposal(LDF): Incinerator: Transporter:
Storage/Treatment (TSF): Receives offsite waste:

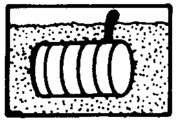
NYS DEC Manifested Waste Summary:
(Waste Codes, Waste Units, and Transaction Types are only shown for the most recent year reported.)

WASTE WASTE WASTE WASTE TRANSACTION

CODE	DESCRIPTION	AMOUNT	UNITS	TYPE	YEAR
F001	Spent halogenated solvents used in degreasing	800	POUNDS	GENERATED	97
F002	Spent halogenated solvents	150	POUNDS	GENERATED	95
F002	Spent halogenated solvents	15	CUBIC YDS	GENERATED	95
D008	Lead	55	GALLONS	GENERATED	94
F001	Spent halogenated solvents used in degreasing	1870	GALLONS	GENERATED	94
F001	Spent halogenated solvents used in degreasing	12	CUBIC YDS	GENERATED	94
F002	Spent halogenated solvents	20	TONS	GENERATED	94

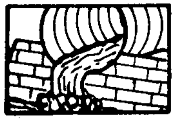
Toxicity Information Summary

CHEMICAL NAME	CAS-NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
Lead	7439921	X	X	X	X		0.05mg/L*

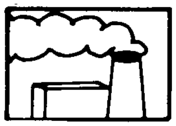


**** NO CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****

**** NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****



**** NO WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS ****



* NO AIR DISCHARGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS *

**** NO CIVIL ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS ****

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS)
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
Bridge St
Sag Harbor, NY 11963

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

Unmappable facilities for 'Suffolk' County

NPL/CERCLIS/NYSDEC Inactive Hazardous Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
152153	KBF POLLUTION MANAGEMENT			UNKNOWN
152152	CHEMICAL MANAGEMENT INC.			UNKNOWN
NYD986941755	BRIDGEHAMPTON MATERIALS AND HEAVY EQPT.	MILLSTONE RD. NO# OF MIDDLE LINE HIGHWAY	SOUTHAMPTON	11963

Hazardous Substance Waste Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0003	PINE'S SWITCH PLANT		PINE'S SWITCH	UNKNOWN

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
52T77	EAST HAMPTON S.T.O.P.			UNKNOWN
52T32	GARAFOLA CARTING TS			UNKNOWN
52C03	DUNLOP AVE COMPOSTING			UNKNOWN
52D01	CALVENTON DEMO. DEBRIS	BOX 164A	CAMPBELL HALL	UNKNOWN
52R99	SAG HARBOR TS	BRIDGEHAMPTON - SAG HARBOR TPK	SAG HARBOR	11963
52F08	SOUTHAMPTON LANDGAS CO.	1703 E SECOND ST	SCOTCH PLAINS	UNKNOWN
52T94	QUOGUE T.S.	TOWN HALL, 116 HAMPTON ROAD	SOUTHAMPTON	UNKNOWN
52T01	SAG HARBOR T.S.	MAIN STREET	SOUTHAMPTON	11963

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9925471	WEST BANK NORTH HAVEN NY	BAYVIEW COURT, LOT#8	NORTH HAVEN	11963
9709012		WEST WATER STREET/B DOCK	SOUTHAMPTON	11963
9614105	MONUMENT SQUARE	OLD MONTAUK HIGHWAY	SOUTHAMPTON	UNKNOWN
9611320		97 LAWEL VALLEY DRIVE	SOUTHAMPTON	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9810110		GABRIELS PATH	EAST HAMPTON	11937
0002438	MONTAUK HARBOR	WEST LAKE DRIVE	EAST HAMPTON	11937
0002318	MASON RESIDENCE	93 ELY BROOK	EAST HAMPTON	11937
0001660	9E BUELL SUBSTATION B-1	DECOVE HOLLOW ROAD	EAST HAMPTON	11937
9925421	MYSTIC TRANSPORTION	CLAY PITTS	SAG HARBOR	11963
9800534		CTY RD 51/LAKE AVENUE	SOUTHAMPTON	11968
9709288	SOUTHAMPTON CAMPUS	12 UNIVERSITY	SOUTHAMPTON	11968
9706419	ON INDIAN RESERVATION	MIDDLE GATE ROAD	SOUTHAMPTON	11968

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9205697	BERKEN RESIDENCE	60 BAYVIEW DRIVE	SAG HARBOR	11963
8806141	SONDRA CULLMAN	28 HAMPTON ROAD	SAG HARBOR	11963

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8401635				UNKNOWN
8401564				UNKNOWN
8100603				UNKNOWN
7800390			DUCK LAKE	UNKNOWN
9825066	GARDNIERS MARINA	THREE MILE HARBOR ROAD	EAST HAMPTON	11937
0001026	UNK	HANDS CREEK RD/ELYBROOK	EAST HAMPTON	11937
9313194	UNK	W/O TOWN LINE ROAD	EAST HAMPTON/SOUTHAMPTON	UNKNOWN
9108383	HOMEOWNER ON SITE	SOUTH FERRY ROAD	NORTH HAVEN	11963
7801072			PILOT STATION	UNKNOWN
9808766	VFW BUILDING	BAY STREET	SAG HARBOR	11963

9801810		BAY STREET	SAG HARBOR	11963
9706274	SAG HARBOR	SAG HARBOR	SAG HARBOR	11963
9701495		BAY STREET	SAG HARBOR	11963
9603652		WEST WATER STREET	SAG HARBOR	11963
9600143	SPOTS CAFE	ROSE & WEST MAIN	SAG HARBOR	UNKNOWN
9504551	VESSEL "CAMILLE"	(HARBOR) BAY STREET	SAG HARBOR	11963
9407203	MANDORIAN VESSEL	WESTWATER STREET	SAG HARBOR	11963
9406954	GONGUISTA RESIDENCE	48 CRESCENT STREET	SAG HARBOR	11963
9400079	EMPORIUM HARDWARE STORE	MAIN STREET	SAG HARBOR	11963
9310854	UNK	BAY STREET	SAG HARBOR	UNKNOWN
9210967	VESSEL AUGUST MOON	WEST WATER STREET	SAG HARBOR	11963
8906712	UNK	WEST WATER STREET	SAG HARBOR	11963
8808634	UNK	LONG ISLAND AVENUE	SAG HARBOR	11963
8401867	LI FISHERMAN	BRIDGE STREET	SAG HARBOR	11963
9807810	SHINNECOCK EAST CO PARK	E/O INLET/OCEAN SHORE	SOUTHAMPTON	11968
9803747	FLYING POINT BEACH	FLYING POINT ROAD	SOUTHAMPTON	11968
9205853	UNK	WATCH HILL MARINA	WATCH HILL	UNKNOWN

Hazardous Spills – MISC. SPILL CAUSES – Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9712567	GEORGICA POND	GEORGICA ROAD	EAST HAMPTON	11937
9605210		MAIN ST & WASHINGTON AVE	EAST HAMPTON	UNKNOWN
9200656	EAST HAMPTON AIRPORT	EAST HAMPTON AVENUE	EAST HAMPTON	UNKNOWN
9402462	LILCO	SHORELINE OF N.E.	NEW HAVEN, CT	UNKNOWN
9102113	LILCO	ROBERTSON DRIVE	NORTHHAVEN	11963
9911639	NORTHBOUND FERRY	NORTHBOUND FERRY	SAG HARBOR	11963
9805535	KRUEGER RESIDENCE	9 CRESCENT STREET	SAG HARBOR	11963
9803775		ROUTE 114	SAG HARBOR	11963
9705332	WATERFRONT DAY SALON	BAY STREET	SAG HARBOR	11963
9701399	AMERICAN BEAUTY	WEST WATER STREET B DOCK	SAG HARBOR	11963
9505262	JAMES R TURNER	SAG HARBOR	SAG HARBOR	11963
9412739	GIFFORDS	JERMAIN AVENUE	SAG HARBOR	11963
9411106	OWNERS CONTRACTOR	WESTWATER STREET	SAG HARBOR	11963
9307317	PINKENS RESIDENCE	HAMPTON ST	SAG HARBOR	11963
9305110	GIFFORDS	HARBOR WATCH COURT	SAG HARBOR	11963
9211607	GIFFORDS	50 OAK DRIVE	SAG HARBOR	11963
9202256	GIFFORDS	54 RIDGE STREET	SAG HARBOR	11963
9112754	SOUTHAMPTON COAL & FUEL	58 RIDGE ROAD	SAG HARBOR	11963
9109666	GIFFORDS	112 ROADWOOD AVENUE	SAG HARBOR	11963
9106389	LILCO	23 BAYVIEW DRIVE	SAG HARBOR	11963
9103221	WILKES RESIDENCE	LINCOLN STREET	SAG HARBOR	11963
9012946	SAG HARBOR GOLF CLUB	BARCELONA NECK	SAG HARBOR	11963
9005428	STANLEY KRUSZESKY	WATER STREET	SAG HARBOR	11963
8908530	HARBOR HEIGHTS S/S	HAMPTON ROAD	SAG HARBOR	11963
8806905	CARL HRIBAR	#24 & 26 HAMPTON ROAD	SAG HARBOR	11963
8804445	RUG & DRAPERY COMPANY	ROUTE 114	SAG HARBOR	11963
8802861	ISLAND TRANSPORTATION	RTE 114	SAG HARBOR	11963
8606263	G.F. SCHIAVONI	LONG ISLAND AVENUE	SAG HARBOR	11963
8603663	M.V. WIL HELRIC II	SAG HARBOR	SAG HARBOR	11963
9925212	CENTURY TENNIS	HILL STREET	SOUTHAMPTON	11968
9912036	DINSMORE RESIDENCE	104 SOUTH MAGEE STREET	SOUTHAMPTON	11968
9813779	KAZDIN POOLS	835 NORTH HIGHWAY RTE 27	SOUTHAMPTON	11968
9800689	RESIDENTIAL AREA	NORTH MAIN STREET	SOUTHAMPTON	11968
9714469	LITTLE FRESH POND	LITTLE FRESH POND ROAD	SOUTHAMPTON	11968
9712852		WAINSCOTT HARBOR ROAD	SOUTHAMPTON	11968
9712835	WALKER RESIDENCE	CENTER AVENUE	SOUTHAMPTON	11968
9707513		W/O HALSEY NECK LANE/DUNE	SOUTHAMPTON	11968
9613390	NORTH SEA TRANSFER STA	MAJORS PATH	SOUTHAMPTON	UNKNOWN
9412895	LILCO	MAIN STREET	SOUTHAMPTON	11960

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9-0197	NO NAME			UNKNOWN
6-11907				UNKNOWN
9-0538	RICHARD PERRY	6 BAYVIEW CT	NORTH HAVEN	UNKNOWN
9-0063	PALLOTINE FAHERS	SUNSET BEACH RD	NORTH HAVEN	11963
9-0146	BELL ATLANTIC	CNTY RTE 64 SAG HARB	SAG HARBOR	11963
9-0131	KING & THOMASSON BUS CO INC	FERRY RD	SAG HARBOR	11963
3-0128	DIVISION ST WELLFIELD	DIVISION ST	SAG HARBOR	11963
3-0114	CORMARIA HOUSE RETREAT	BAY ST	SAG HARBOR	11963
3-0102	MALLOY ENTERPRISES INC	BAY ST	SAG HARBOR	11963
3-0054	ANDY'S AUTO BODY	RTE 114	SAG HARBOR	11963
3-0049	HARBOR HEIGHTS FUEL OIL	1409 HAMPTON ST.	SAG HARBOR	11963
9-0529	ADVANCED TRANSMISSION	566 COUNTY RD 39	SOUTHAMPTON	UNKNOWN
9-0517	SAG HARBOR TRANSFER STATION	40 BRIDGEHAMPTON SAG HA	SOUTHAMPTON	UNKNOWN
9-0305	NORTH FORK BANK	HAMPTON RD	SOUTHAMPTON	UNKNOWN

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP004010862	CON ED	MH 60651 - EAST SIDE		UNKNOWN
NYP003631264	NYSDEC			UNKNOWN
NYP003630336	NEW YROK STATE DEPT OF ENVIRONMENTAL CON	RT 117 & SUNRISE HWY	ALBANY	UNKNOWN
NYP000780585	NEW YORK STATE DEPT OF ENVIRONMENTAL	CONSERVATION-50 WOLF ROAD	ALBANY	12233
NYP000301309	NEW YORK STATE DEPT OF ENVIRONMENTAL	CONSERVATION RM 326 50 WOLF RD	ALBANY	12233
NYP000300756	NEW YORK STATE DEPT OF ENVIRONMENTAL	CONSERVATION-RM 326 50 WOLF RD	ALBANY	12233
NYP000300533	NEW YORK STATE DEPT OF ENVIRONMENTAL	CONSERVATION-RM 326 50 WOLF RD	ALBANY	12233
NYD981877129	EXXON	MONTAUK HIGHWAY & WAINSCOTT	EAST HAMPTON	UNKNOWN
NYN100052012	John K. Ott Cesspool Service	P.O. Box 5070	East Hampton	UNKNOWN
NYR000000372	PHOTOGRAPHIC EAST LTD	SOUTH EAST CORNER OF BAY	SAG HARBOR	UNKNOWN
NYP000880732	ISLAND TRANSPORTATION CORP	HARBOR HEIGHTS-RT 144 HAMPTON	SAG HARBOR	11963
NYP000879171	ISLAND TRANSPORTATION CORP	HAMPTON STREET	SAG HARBOR	UNKNOWN
NYD981565971	SAG HARBOR TRANSFER STATION	BRIDGEHAMPTON-SAG HARBOR TPKE	SAG HARBOR	UNKNOWN
NYD117383653	PAST TENSE LTD DBA FISHERS	MAIN ST	SAG HARBOR	11963
NYR000046722	AMERADA HESS CORP	STATION 37478-830 N HIGHWAY	SOUTHAMPTON	11968
NYX720000000	TRANSPORTER X	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	UNKNOWN

Chemical Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1-000515	ROWE INDUSTRIES SUPERFUND SITE	1668 BRIDGEHAMPTON/SAG HARBOR TURNPIKE	SAG HARBOR	11963

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0237051	THE DINER INC			UNKNOWN
NY0225975	ARROW SERVICE STATION			UNKNOWN
NY0222453	SHRI PARAMHANS ADVAIT MAT			UNKNOWN
NY0221350	PIZZA HUT #606176			UNKNOWN
NY0210994	RESTAURANT			UNKNOWN
NY0210960	CARLMAR LAUNDROMAT			UNKNOWN
NY0210951	T.R.C. SERVICES LAUNDROMAT			UNKNOWN
NY0210943	STRAWBERRY'S LAUNDRY, LTD			UNKNOWN
NY0210889	THE LAUNDRY EXPERIENCE, INC			UNKNOWN
NY0210684	WOODCREST ESTATES			UNKNOWN
NY0210048	LAUNDRY WORLD, LTD			UNKNOWN
NY0206482	UBI - OLYMPUS			UNKNOWN
NY0199621	METROPOLITAN LIFE INSURANCE CO			UNKNOWN
NY0199486	ONE HOUR PHOTO EXPRESS			UNKNOWN
NY0199419	SOUTHAMPTON MARBLE CORP			UNKNOWN
NY0197963	LIGHTHOUSE COIN-OP LAUNDRY			UNKNOWN
NY0195308	SUNBURST LAUNDROMAT			UNKNOWN
NY0179213	SOUTHAMPTON COMMONS			UNKNOWN

NY0110400	SUFFOLK AGWAY CO−OP, INC			UNKNOWN

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
361034419	SAG HARBOR IND INC	SAG HARBOR TURNPIKE	SAG HARBOR	11963
3610300140	USCG−LIGHT NO. 3	SAG HARBOR	SAG HARBOR	UNKNOWN
3610300139	USCG−LIGHT	SAND SPIT	SAG HARBOR	UNKNOWN
3610300037	RA MCCALLUM	BAY STREET	SAG HARBOR	11963

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

D008 Lead

D011 Silver

F001 The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1−trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons: all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005: and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

F002 The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1−trichloroethane, chlorobenzene, 1,1,2−trichloro−1,2,2−trifluoroethane, ortho−dichlorobenzene, trichlorofluoromethane, and 1,1,2−trichloroethane: all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005: and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a computerized version of the U. S. Census map using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each *Toxic Site Profile,* along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a computerized version of the U. S. Census map. These site locations are identified "address-matched."

Note: Some sites have an address match location <u>*and*</u> *a map coordinate location. Both locations are mapped because they can be equally correct.*

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/operators or government agencies. These site locations are identified "map coordinate." <u>Map coordinates for Toxics Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect</u> .

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Computerized Environmental Reports contain government information compiled from 16 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information.

1) **Inactive Hazardous Waste Disposal Site Registry**: New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Profile data updated through: 6/15/1999. Data obtained by Toxics Targeting: 8/1/1999.
New Facilities updated to: 1/1/2000. Data obtained by Toxics Targeting: 2/6/2000.

2) **CERCLIS**: Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. NPL sites are also included in CERCLIS. ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Profile data updated through: 12/29/1999. Data obtained by Toxics Targeting: 1/2/2000.
New Facilities updated through: 12/29/1999. Data obtained by Toxics Targeting: 1/2/2000.

3) **National Priority List for Federal Superfund Cleanup**: Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Profile data updated through: 4/1999. Data obtained by Toxics Targeting: 6/3/1999.
New Facilities updated through: 8/26/1999. Data obtained by Toxics Targeting: 9/6/1999.

4) **Hazardous Substance Waste Disposal Site Study**: NYS database of waste disposal sites that may pose threats to public health or the environment, but cannot be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

5) **Solid Waste Facilities**: NYS database of solid waste facilities, including, but not limited to, landfills, incinerators, transfer stations, recycling centers. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 1/01/1998. Data obtained by Toxics Targeting: 6/30/1998.

Also includes a listing of solid waste disposal sites operated by New York City municipal authorities circa 1934.
Source: City of New York Dept. of Sanitation (1984). The Waste Disposal Problem in New York City: A Proposal For Action.

6) **Major Oil Storage Facilities**: NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than four hundred thousand gallons. Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
New facilities updated through: 7/1/1999. New facilities data obtained by Toxics Targeting: 7/29/1999.
Tank data updated through: 7/1/2000. Tank data obtained by Toxics Targeting: 7/17/2000.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Bureau of Hazardous Waste Facility Compliance pursuant to New York State Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Manifest transactions data updated to: 1/01/1999. Manifest transactions data obtained by Toxics Targeting: 3/27/1999.
New facilities updated through: 1/01/1999. New facilities obtained by Toxics Targeting: 3/27/1999.

(b) **Notifier Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/22/1998. Data obtained by Toxics Targeting: 3/30/1999.

(c) **RCRA Violations Information:**
U. S. Environmental Protection Agency database of violations data reported for facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/23/1998. Data obtained by Toxics Targeting: 12/30/1998.

(d) **RCRIS Corrective Action Activity (CORRACTS) Information:** U. S. Environmental Protection Agency (EPA) database of hazardous waste facilities with corrective action activity. This data is part of the RCRIS National Oversight database.
Source: U. S. Environmental Protection Agency[1]
Data updated through: 4/20/2000. Data obtained by Toxics Targeting: 5/10/2000.

8) **Spills Information Database**: Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). The database includes *active* and *closed* spills reported between 4/1/1986 and 1/1/2000. ASTM required.* Fannie Mae.**
Source: NYS Department of Environmental Conservation.[2]
New spill additions data updated through: 7/1/2000. New spill additions data obtained by Toxics Targeting: 7/17/2000.
Spill attribute data updated through: 7/1/2000. Spill attribute data obtained by Toxics Targeting: 7/17/2000.

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Petroleum Bulk Storage Facilities**: Local and State databases of aboveground and underground petroleum storage facilities with a combined storage capacity over 1,100 gallons. ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, and Suffolk:
Source: NYS Department of Environmental Conservation.[2]
Update schedule: rolling basis, with summary compilations made available approximately every three months
Facility data updated through: 7/1/1999 (10/1/98 for Westchester Co.). Facility data obtained by Toxics Targeting: 7/29/1999.
Tank data updated through: 7/1/1999 (10/1/98 for Westchester Co.). Tank data obtained by Toxics Targeting: 7/29/1999.

Nassau County:
Heat producing products and other products with less than 1,000 gallons storage capacity:
Source: Nassau County Department of Health.[3] Data update schedule: rolling basis
Data updated through: 2/4/1999. Data obtained by Toxics Targeting: 2/26/1999.

Generally non-heat producing products with more than 1,000 gallons storage capacity:
Source: Nassau County Fire Marshall. [4] Data update schedule: rolling basis with annual update
Data updated through: 9/27/1996. Data obtained by Toxics Targeting: 11/20/1996.

Rockland County:
Source: Rockland County Department of Health. [5] Data update schedule: rolling basis.
Data updated through: 8/11/1998. Data obtained by Toxics Targeting: 8/17/1998.

Suffolk County:
Source: Suffolk County Department of Health Services. [6] Data update schedule: annual update.
Data updated through: 1/12/1999. Data obtained by Toxics Targeting: 2/26/1999.

10. **RCRA Hazardous Waste Generators and/or Transporters Databases:**
(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the New York State Department of Environmental Conservation's Bureau of Hazardous Waste Facility Compliance pursuant to New York State Law. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Manifest transactions data updated to: 1/01/1999. Manifest transactions data obtained by Toxics Targeting: 3/27/1999.
New facilities updated through: 1/01/1999. New facilities obtained by Toxics Targeting: 3/27/1999.

(b) **RCRA Notifier Information:** U. S. Environmental Protection Agency database of hazardous waste facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/22/1998. Data obtained by Toxics Targeting: 3/30/1999.

(c) **RCRA Violations Information:** U. S. Environmental Protection Agency database of violations data reported for facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 3/26/1998. Data obtained by Toxics Targeting: 4/9/1998.
Data attributes updated through: 12/23/1998. Data obtained by Toxics Targeting: 12/30/1998.

(d) **RCRIS Corrective Action Activity (CORRACTS) Information:** U. S. Environmental Protection Agency (EPA) database of hazardous waste facilities with corrective action activity. This data is part of the RCRIS National Oversight database.
Source: U. S. Environmental Protection Agency[1]
Data updated through: 4/20/2000. Data obtained by Toxics Targeting: 5/10/2000.

11) **Chemical Bulk Storage Facilities**: New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. ASTM required.* Fannie Mae required.**
Source: New York State Department of Environmental Conservation.[2]
Data updated through: 4/1/2000. Data obtained by Toxics Targeting: 4/7/2000.

12) **Toxic Release Inventory**: New York State and Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: NYS Department of Environmental Conservation[2]/U. S. Environmental Protection Agency.[1]
Data update schedule: rolling basis, with annual information summary for previous year's activities available from NYSDEC each July 1, with corrections and additional information available approximately mid-August.
Data updated through: 5/9/1996. Data obtained by Toxics Targeting: 5/14/1996

13) **Air Discharge Facilities**: EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/06/2000

14) **Toxic Wastewater Discharges (Permit Compliance System)**: Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1]
Data updated through: 9/23/1996. Data obtained by Toxics Targeting: 9/30/1996

15) **U. S. Environmental Protection Agency Civil Enforcement Docket**: This database is the U. S. EPA's system for tracking civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
Data update schedule: quarterly. Date updated: 4/1996. Date information obtained by Toxics Targeting: 8/1996

16) **Emergency Response Notification System (ERNS)**: Federal database of spills compiled by the Emergency Response Notification System. ASTM required.* See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

*American Society of Testing Materials Standards on Environmental Site Assessments for Commercial Real Estate (E 1527-93, E 1528-93).

** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 50 Wolf Road, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshall, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

APPENDIX B

CUT AND PLUG IRM ANALYTICAL RESULTS

TABLE B-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
CUT AND PLUG PROGRAM
SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 01/05/1999 thru 01/06/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHCP-01 SHCP-1 01/05/1999 0.00	SHCP-02 SHCP-2 01/06/1999 0.00	SHCP-03 SHCP-3 01/06/1999 0.00	SHCP-04 SHCP-4 01/06/1999 0.00
Benzene	(mg/kg)	0.06	[0.83]	0.031	12 U	0.039
Toluene	(mg/kg)	1.5	0.92	0.029	12 U	0.018
Ethyl benzene	(mg/kg)	5.5	[41]	1.1	[52]	0.96
Xylene (total)	(mg/kg)	1.2	[51]	[1.7]	[120]	0.87
Total BTEX	(mg/kg)		93.75	2.86	172	1.887

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE B-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
CUT AND PLUG PROGRAM
SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 01/05/1999 thru 01/06/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHCP-01 SHCP-1 01/05/1999 0.00	SHCP-02 SHCP-2 01/06/1999 0.00	SHCP-03 SHCP-3 01/06/1999 0.00	SHCP-04 SHCP-4 01/06/1999 0.00
Naphthalene	(mg/kg)	13	[180]	[19]	[330]	4.4
2-Methylnaphthalene	(mg/kg)	36.4	[89]	13	[98]	0.8 U
Acenaphthylene	(mg/kg)	41	5.5 J	1.4 J	4.4 J	0.69 J
Acenaphthene	(mg/kg)	50	[57]	22	[110]	0.045 J
Fluorene	(mg/kg)	50	29	8.2	[54] J	0.086 J
Phenanthrene	(mg/kg)	50	[120]	37	[210]	0.77 J
Anthracene	(mg/kg)	50	31	10	[58] J	0.24 J
Fluoranthene	(mg/kg)	50	33	11	[69] J	0.76 J
Pyrene	(mg/kg)	50	[160]	37	[130]	2.6
Benz(a)anthracene	(mg/kg)	0.224	[28]	[7.6]	[38] J	[0.73] J
Chrysene	(mg/kg)	0.4	[29]	[8]	[34] J	[1.1]
Benzo(b)fluoranthene	(mg/kg)	1.1	[12] J	[1.8] J	[14] J	[1.3]
Benzo(k)fluoranthene	(mg/kg)	1.1	[15] J	[3.6] J	[17] J	[1.2]
Benzo(a)pyrene	(mg/kg)	0.061	[29]	[4.8] J	[28] J	[0.84]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[13] J	2.2 J	[11] J	1.6
Dibenz(a,h)anthracene	(mg/kg)	0.014	[8.4] J	[1] J	[3.8] J	[0.49] J
Benzo(g,h,i)perylene	(mg/kg)	50	29	3.6 J	16 J	2.1
Total CAPAHs	(mg/kg)	10	[134.4]	[29]	[145.8]	7.26
Total PAHs	(mg/kg)	500	[867.9]	191.2	[1225.2]	18.951

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

TABLE B-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
CUT AND PLUG PROGRAM
SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 01/05/1999 thru 01/06/1999 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHCP-01 SHCP-1 01/05/1999 0.00	SHCP-02 SHCP-2 01/06/1999 0.00	SHCP-03 SHCP-3 01/06/1999 0.00	SHCP-04 SHCP-4 01/06/1999 0.00
Arsenic	(mg/kg)	7.5	2.7	1.1	1.5	3.6
Barium	(mg/kg)	300	16.3	8.5	15.1	42.8
Cadmium	(mg/kg)	10	0.22 U	0.22 U	0.18 U	0.40
Chromium	(mg/kg)	50	3.6	2.8	3.0	3.5
Lead	(mg/kg)	500	176.	13.5	34.2	166.
Mercury	(mg/kg)	0.10	0.053	0.042 U	[0.12]	[0.58]
Selenium	(mg/kg)	2	0.66 U	0.71	1.4	0.87
Silver	(mg/kg)		0.22 U	0.22 U	0.18 U	0.20 U
Cyanide, total	(mg/kg)		0.618 U	0.542 U	0.608 U	0.604 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not analyzed

APPENDIX C

BORING LOGS

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

Site Id: SHSB-01

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/20/00 - 03/20/00

Total Depth: 28.00'

Remarks: Samples taken for analysis at 0-1.5', 5-7', and 26-28'. Boring grouted 0-28'.

Elevation: 4.69'

Datum: Mean Sea Level

Logged By: D. Stahl

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 0.0 ppm 0.2 ppm 64.1 ppm 36.2 ppm		Black, med-fine sandy FILL, w/some silt, trace c. sand, trace f. gravel, moist Dark gray, coarse-fine sandy FILL, w/trace silt and fine gravel
5		4-8'	182 ppm 364 ppm 2000+ ppm 2000+ ppm 781 ppm 312 ppm		Dark brown-gray, med-fine sandy FILL, little silt, trace c. sand, w/dark brown NAPL, prominent creosote-like odor, loose, wet Brown PEAT, little medium-fine SAND, trace silt, firm, wet
10		8-12'	21.2 ppm 16.8 ppm 21.1 ppm 11.2 ppm 6.8 ppm		Brown, med-fine SAND, trace coarse sand, silt, and organics, loose, wet
15		12-16'	0.1 ppm 0.6 ppm 1.2 ppm 0.4 ppm 0.7 ppm 0.9 ppm 0.2 ppm		Brown, med-fine SAND, trace coarse sand and silt, w/0.5' layer brown coarse-fine sand, little fine gravel in center of sample loose, wet
		16-20'	0.0 ppm 0.9 ppm 1.4 ppm 0.9 ppm 0.6 ppm 1.1 ppm 2.4 ppm 3.1 ppm		Brown, medium-fine SAND, trace coarse sand and silt, loose, wet
20		20-24'	0.2 ppm 1.6 ppm 0.8 ppm 0.3 ppm 0.1 ppm 0.2 ppm 0.1 ppm		Brown, fine SAND, little med sand, trace silt and coarse sand, med dense, wet
25		24-28'	0.0 ppm 0.0 ppm 0.0 ppm 0.1 ppm 0.1 ppm 0.0 ppm 0.0 ppm 0.1 ppm		Brown, medium-fine SAND, trace silt, medium dense, wet Base of Boring - 28'

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

Site Id: SHSB-02

Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK

Purpose: Soil Boring

Date(s): 03/21/00 - 03/21/00

Total Depth: 54.00'

Elevation: 5.14'

Datum: Mean Sea Level

Logged By: D. Stahl

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples taken for analysis at 0.5-1.5', 6-7', 16-18', and 52-54'.

Sample Interval	PID	Material Description
0-4'	3.2 ppm	FILL - red brick (upper 0.25 feet) Dark gray-brown, med-fine sandy FILL, little coarse sand, trace fine gravel and silt, loose, wet
4-8'	391 ppm 962 ppm 492 ppm 204 ppm	Dark gray, med-fine sandy FILL, trace silt and coarse sand, w/NAPL, sheen, hydrocarbon-like odor, loose, wet Brown silty FILL, little peat, trace clay, grading to PEAT at sample base
8-12'	57.1 ppm 73.6 ppm 49.2 ppm 61.4 ppm 24.1 ppm 31.2 ppm	Brown SILT, some peat, trace clay, firm, wet Brown, medium-fine SAND, little silt, trace coarse sand, loose, wet
12-16'	24.2 ppm 33.8 ppm 64.7 ppm 23.4 ppm 28.9 ppm 385 ppm 1625 ppm	Brown, medium-fine SAND, trace silt, w/odor, sheen, and NAPL in tip, loose, wet
16-20'	841 ppm 836 ppm 720 ppm 412 ppm 187 ppm 42.0 ppm 86.1 ppm 32.6 ppm	Brown, med-fine SAND, trace silt, w/odor, sheen, and NAPL as darker layers, loose, wet
20-24'	61.8 ppm 34.2 ppm 71.1 ppm 26.4 ppm 48.9 ppm 378 ppm 64.0 ppm 34.9 ppm	Brown, med-fine SAND, trace silt and coarse sand, w/odor, sheen. Dark layer 0.4' thick at 22.6-23' w/PID = 378 ppm, loose, wet
24-28'	26.2 ppm 13.8 ppm 24.1 ppm 17.1 ppm 21.5 ppm 20.9 ppm 17.4 ppm 15.1 ppm	Gray-brown, med-fine SAND, trace silt and coarse sand, med dense, wet
28-32'	15.1 ppm 14.9 ppm 21.0 ppm 26.3 ppm	Gray-brown, med-fine SAND, little coarse sand, trace silt, med dense, wet

Depth (ft): 5, 10, 15, 20, 25

Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	Site Id: SHSB-02
Purpose: Soil Boring	Total Depth: 54.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	22.2 ppm 14.9 ppm 19.9 ppm 26.4 ppm 21.8 ppm 18.5 ppm 1.4 ppm 9.8 ppm		Brown, medium–fine SAND, little coarse sand, trace fine gravel and silt, loose, wet
35		36–40'	6.9 ppm 5.4 ppm 4.8 ppm		Brown, medium–fine SAND, trace coarse sand, fine gravel, and silt, medium dense
40		40–44'			No recovery – 40–44 ft.
45		44–48'	28.6 ppm 22.4 ppm 18.1 ppm 20.0 ppm 13.3 ppm 18.6 ppm 9.6 ppm 12.2 ppm		Brown, medium–fine SAND, trace coarse sand, trace silt, trace very fine gravel, medium dense, wet
50		50–54	1.2 ppm 2.5 ppm 1.8 ppm 8.7 ppm 6.5 ppm		Light brown, fine–coarse SAND, medium dense, wet
					Base of Boring – 54'
55					
60					
65					

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

Site Id: SHSB-03	
Elevation: 5.62'	Location: Sag Harbor, New York
Datum: Mean Sea Level	Purpose: Soil Boring
Logged By: John Schafer	Date(s): 03/20/00 - 03/20/00
Drilling Method: Direct Push	Total Depth: 36.00'
Contractor: Emington	Remarks: Samples selected for analysis at 1-3', 10-12', and 34-36'. HCN meter battery ran out of power at 8'.
Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Brown, fine-medium, silty sandy FILL, moist, loose Dark brown to black, silty sandy FILL, w/crushed rock, brick, and coal
5		4-8'	28 ppm 50 ppm 30 ppm 27 ppm 36 ppm 41 ppm		Gray to dark gray, fine-med sandy FILL, w/trace coarse sand, wet, loose, hydrocarbon-like odor, intermittent staining
10		8-12'	219 ppm 169 ppm 333 ppm 161 ppm 36 ppm 19 ppm		Black, clayey PEAT, soft, plastic, moist, hydrocarbon-like odor, staining Black gray, fine-medium SAND, wet, loose, hydrocarbon-like odor, staining Black, clayey PEAT, slightly plastic, moist, hydrocarbon-like odor, staining Brown, sandy SILT, soft, slightly plastic, wet, hydrocarbon-like odor
		12-16'	7.9 ppm 5.8 ppm 22 ppm 30 ppm		Brown, fine, silty SAND, wet, loose, hydrocarbon-like odor
15		16-20'	25 ppm		Same as above, sheen
20		20-24'	16 ppm 17 ppm 6 ppm		Brown, fine-medium SAND, trace coarse sand, wet, loose, napthalene-like odor, sheen
25		24-28'	3.4 ppm 5.8 ppm 10.2 ppm		Brown, fine-medium SAND, trace silt and coarse sand, wet, loose
		28-32'	5 ppm 8 ppm 7.5 ppm		Light brown, fine-coarse SAND, wet, loose

Location: Sag Harbor, New York	Site Id: SHSB-03
Purpose: Soil Boring	Total Depth: 36.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	6.5 ppm 8.9 ppm 7.6 ppm 9.5 ppm		Light brown, fine–medium SAND, trace coarse sand, wet, loose
35					
					Base of Boring – 36'
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-04	
Location: Sag Harbor, Suffolk County, New York	
Purpose: Soil Boring	
Date(s): 03/13/00 – 03/15/00	
Total Depth: 32.00'	
Elevation: 4.08'	
Datum: Mean Sea Level	
Logged By: D. Stahl	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Remarks: Samples selected for analysis at 0.5–0.7', 4–6', and 24–26'. Water sample SHGP-4I (30–32') collected at 30–32 ft; boring grouted to 32 ft.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–2'	0.8 ppm		Black, fine gravel FILL, little coarse sand, little silt, loose, moist
		2–4'	16.1 ppm, 20.2 ppm, 36.3 ppm, 41.1 ppm		Gray, fine, sandy FILL, little med sand, trace coarse sand, trace cinders and wood, NAPL in tip
5		4–8'	21.2 ppm, 46.4 ppm, 48.1 ppm, 7.2 ppm, 9.1 ppm		Gray, medium-fine sandy FILL, trace coarse sand, w/NAPL, loose, wet Brown SILT, litle peat, trace clay, soft, wet
10		8–12'	7.2 ppm, 8.1 ppm, 9.4 ppm		Brown, medium-fine SAND, trace silt, trace coarse sand, loose, wet
15		12–16'	3.2 ppm, 8.1 ppm, 13.2 ppm, 4.4 ppm		Brown, medium-fine SAND, little fine gravel, trace coarse sand, medium dense, wet
		16–20'	3.2 ppm, 2.3 ppm, 4.1 ppm, 6.2 ppm, 5.2 ppm, 20.1 ppm, 21.6 ppm, 16.5 ppm		Brown, medium-fine SAND, trace coarse sand, trace silt, med dense, wet
20		20–24'	2.1 ppm, 0.6 ppm, 1.2 ppm, 0.4 ppm, 0.3 ppm, 1.1 ppm, 0.2 ppm, 0.6 ppm		Brown, medium-fine SAND, trace coarse sand, medium dense, wet
25		24–28'	0.6 ppm, 1.1 ppm, 0.4 ppm, 1.2 ppm, 1.3 ppm, 0.8 ppm, 2.1 ppm, 1.2 ppm		Brown, medium-fine SAND, trace coarse sand, medium dense, wet Gray-brown, fine SAND, little silt, trace medium sand
		28–30'	0.2 ppm, 0.4 ppm, 0.6 ppm, 0.2 ppm		Same as above, medium dense, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-04
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'	0.2 ppm		Very turbid, brown water sample, slight hydrocarbon–like odor Base of Boring – 32'
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-05	Elevation: 4.76'
Location: Sag Harbor, Suffolk County, New York	Datum: Mean Sea Level
Purpose: Soil Boring	Logged By: D. Stahl
Date(s): 03/13/00 – 03/13/00	Drilling Method: Direct Push
Total Depth: 30.00'	Contractor: Emington
Remarks: Samples selected for analysis at 0.5–0.7', 4–8', and 22–24'. Sample from 1.3–1.5' was not analyzed. Boring grouted 0–30'. No GW sampling conducted.	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		1.5–4'	0.1 ppm 24.6 ppm 1.2 ppm 2.5 ppm 3.2 ppm		Black–brown, med.–f. sandy FILL, little silt and f. gravel, loose, moist Brown, coarse–fine sandy FILL, trace fine gravel and silt, loose, wet Br, c.–f. sandy FILL, tr. f. sand and silt, loose, wet
5		4–8'	36.2 ppm 76.4 ppm 132.8 ppm 127.6 ppm 136.4 ppm 141.2 ppm		Black–brown, med–fine sandy FILL, little f. gravel, tr. silt, loose, NAPL, wet Black–brown, med–fine sandy FILL, trace silt and coarse sand, NAPL–like odor sheen, trace peat near sampler base, PID = 2.1 ppm in breathing zone
10		8–12'	36.3 ppm 62.8 ppm 41.6 ppm 38.2 ppm		Dark brown SILT, little peat, trace clay and med–fine sand. Thin seam med–fine SAND, trace coarse SAND near center of sample PID = 0.6pm in breathing zone
15		12–16'	9.6 ppm 12.4 ppm 26.2 ppm 31.0 ppm 21.9 ppm 26.8 ppm 32.1 ppm 10.6 ppm		Brown, medium–fine SAND, trace silt, trace coarse sand, medium dense, layered, wet PID = 0.0 in breathing zone
		16–20'	21.1 ppm 17.2 ppm 20.4 ppm 71.6 ppm 17.4 ppm 14.2 ppm 9.6 ppm 19.8 ppm		Brown, medium–fine SAND, little coarse sand, trace fine gravel, medium dense, layered, wet
20		20–24'	0.6 ppm 0.2 ppm 0.8 ppm 0.6 ppm 0.4 ppm 0.8 ppm 0.5 ppm 0.2 ppm		Gray–brown, medium–fine SAND, trace coarse sand, trace silt, medium dense, wet
25		24–28'	0.6 ppm 0.9 ppm 1.1 ppm 0.6 ppm 1.2 ppm 0.9 ppm 1.4 ppm 0.7 ppm		Same as above, no silt
		28–30	0.2 ppm 0.5 ppm 0.4 ppm 0.6 ppm		Same as above, little coarse sand Base of Boring – 30'

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

Site Id: SHSB-06	
Location: Sag Harbor, Suffolk County, New York	
Purpose: Soil Boring	
Date(s): 03/13/00 – 03/13/00	
Total Depth: 52.00'	
Remarks: Samples selected for analysis at 0.5–1.5' and 6–8'.	
Elevation: 4.76'	
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.7 ppm 1.8 ppm 15.7 ppm 4.0 ppm 4.6 ppm 87 ppm 80 ppm		Brown, silty, fine–med sandy FILL, w/med–coarse gravel, loose, moist Brown, medium–coarse sandy FILL, w/rock fragments Dark brown silty FILL (1" layer), soft, plastic, hydrocarbon–like odor, wet
5		4–8'	119 ppm 149 ppm 23 ppm 23 ppm 20 ppm 58 ppm		Brown, f–c sandy FILL, w/crushed rock, hydrocarbon–like odor, staining, wet Brown NAPL laden, fine–med sandy FILL, trace coarse sand, hydrocarbon–like odor, sheen, wet
10		8–12'	31.5 ppm 19 ppm 5.7 ppm 20 ppm 29 ppm 10.7 ppm 16 ppm		Brown, clayey PEAT, soft, organic material, hydrocarbon–like odor, moist Brown, silty, fine SAND, medium dense, hydrocarbon–like odor, sheen, wet Brown, fine SAND, loose, hydrocarbon–like odor, wet
15		12–16'	8.5 ppm 17.5 ppm 14 ppm 47.5 ppm 89 ppm 32 ppm 20.8 ppm		Brown, fine–medium SAND, loose, hydrocarbon–like odor, wet
		16–20'	17 ppm 3.1 ppm 0.0 ppm 1.5 ppm 0.0 ppm 7.5 ppm 0.0 ppm 0.0 ppm		Brown, fine SAND, loose, wet
20		20–24'	3.5 ppm 0.0 ppm 0.0 ppm 0.0 ppm 9.8 ppm 9.5 ppm 0.0 ppm		Light brown, fine–coarse SAND, loose, wet
25		24–28'	0.0 ppm		Light brown, very fine SAND, medium dense, wet
		28–32'	0.0 ppm		Light brown, fine–medium SAND, w/trace coarse sand, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-06
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	0.0 ppm		Light brown, medium–coarse SAND, w/trace fine sand, loose, wet
35		36–40'	0.0 ppm 32 ppm 62 ppm 0.0 ppm 30 ppm 0.0 ppm		Light brown, fine–medium SAND, loose, wet
40		40–44'	0.0 ppm		Light brown, fine–medium SAND, trace coarse sand, wet
45		44–48'	0.0 ppm		Light brown, fine–coarse SAND, loose, wet
		48–52'	0.0 ppm		Light brown, medium–coarse SAND, w/trace fine sand, wet, loose
50					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-07

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/17/00 – 03/17/00

Total Depth: 30.00'

Elevation: 4.68'

Datum: Mean Sea Level

Logged By: D. Stahl

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 0.5–1', 8–10', and 26–28'. Boring grouted 0–30'.

Depth (ft)	Sample Interval	PID	Material Description
	0–4'	0.0 ppm	Brown, coarse–fine sandy FILL, trace silt and fine gravel, red brick fragments
			Black, coarse–fine sandy FILL, little silt, w/NAPL, odor, loose, wet
	4–8'	1.3 ppm 3.2 ppm 1.6 ppm 2.8 ppm 3.5 ppm	Black, coarse–fine sandy FILL and silt w/NAPL, loose, wet Brown, med–fine sandy FILL, trace coarse sand and silt, loose, wet
5			
	8–12'	64.6 ppm 52 ppm 46.1 ppm	Gray–brown, medium–fine SAND, trace silt Dark brown SILT, some PEAT
10			
	12–16'	3.2 ppm 6.1 ppm 5.8 ppm 2.1 ppm 4.6 ppm 5.1 ppm	Red–brown, med–fine SAND, trace silt and coarse sand, hydrogen sulfide–like odor, trace organics
15			
	16–20'	35.1 ppm 22.6 ppm 31.2 ppm	Red–brown, medium–fine SAND, trace silt Brown, medium–fine SAND, trace silt, loose, hydrogen sulfide–like odor, wet
20	20–24'	0.2 ppm 0.1 ppm 0.0 ppm 0.6 ppm	Brown, medium–fine SAND, little silt, loose, wet
	24–28'	0.0 ppm 0.2 ppm 0.0 ppm	Brown, coarse–fine sand, med dense, wet
25			
	28–30'	0.0 ppm	Gray–brown, med–fine SAND, little coarse sand, med dense, wet Base of Boring – 30'

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

Site Id: SHSB-08	
Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	
Purpose: Soil Boring	
Date(s): 03/20/00 – 03/20/00	
Total Depth: 52.00'	
Elevation: 4.19'	Remarks: 32–36' interval described from composite sample
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Depth (ft)	Sample Interval	PID	Material Description
	0–4'	3.7 ppm 8.1 ppm 24 ppm 86 ppm	Brown, silty, fine sandy FILL, w/crushed rock, loose, hydrocarbon-like odor, sheen, wet at 5"
5	4–8'	109 ppm 220 ppm 309 ppm 209 ppm 69 ppm 84 ppm	Gray-black, stained sandy FILL, loose, heavy hydrocarbon-like odor, sheen, wet Brown, clayey PEAT, soft, plastic, w/organic matter, hydrocarbon-like odor, moist
10	8–12'	11 ppm 28 ppm 63 ppm 63 ppm 25 ppm 66 ppm	Brown, fine, sandy SILT, soft, low plasticity, hydrocarbon-like odor, wet
15	12–16'	58 ppm 8.0 ppm 7.6 ppm 7.0 ppm 14 ppm 16 ppm 17 ppm 13 ppm 21 ppm	Brown, sandy SILT, low plasticity, slight hydrocarbon-like odor, wet Brown, fine-medium SAND, loose, slight hydrocarbon-like odor, wet
	16–20'	8.0 ppm 12 ppm 12 ppm 11 ppm 20 ppm 10 ppm 6.0 ppm 6.0 ppm	Light brown, fine-med SAND, loose, slight hydrocarbon-like odor, wet
20	20–24'	12 ppm 16 ppm 15 ppm 18 ppm 20 ppm 23 ppm 27 ppm 20 ppm	Same as above, no odor
25	24–28'	8.0 ppm 10 ppm 7.0 ppm 13 ppm 14 ppm 12 ppm	Same as above, w/trace coarse sand
	28–32'	13.6 ppm 14 ppm 17 ppm 19.5 ppm	Same as above

Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	Site Id: SHSB-08
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
			18 ppm 21 ppm		Lt. brown, extremly fine, sandy SILT, soft, slightly plastic, wet
		32–36'	0.0 ppm		Brown, very fine, silty SAND, loose, wet
35					
		36–40'	16 ppm 14 ppm 21 ppm 18 ppm		Light brown, medium–coarse SAND, trace fine sand, loose, wet
40		40–44'	0.0 ppm		Same as above, iron staining at 43.5'
		44–48'	0.0 ppm		Same as above, no staining
45					
		48–52'	0.0 ppm		Light brown, fine–medium SAND, trace coarse sand, loose, wet
50					
					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-09	
Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	
Purpose: Soil Boring	
Date(s): 03/22/00 - 03/23/00	
Total Depth: 32.00'	
Elevation: 4.24'	Remarks: Samples taken for analysis at 1-3', 6-8', and 26-28'. A composite sample was used for 12-14' and 14-16'.
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-2'	5.0 ppm 20 ppm 731 ppm 834 ppm		FILL- crushed rock, coal in black silty matrix, hydrocarbon-like odor, dry Gray, silty, clayey FILL, hard, non-plastic, some wood, heavy odor, moist
		2-4'	919 ppm 266 ppm 331 ppm		Black, NAPL laden SAND to brown, fine-med SAND, some silt, trace fine-coarse gravel, heavy hydrocarbon-like odor
5		4-8'	937 ppm 1480 ppm 1500 ppm 1999+ ppm		Black, fine-med, NAPL laden SAND, loose, heavy hydrocarbon-like odor, sheen, wet
10		8-12'	1999+ ppm		Same as above, no sheen
			50 ppm		Brown, silty fine SAND, loose, heavy hydrocarbon-like odor, wet
15			157 ppm		
		16-20'	64 ppm 46 ppm 64 ppm 125 ppm 43 ppm 27 ppm 40 ppm		Brown, fine-medium, silty SAND, w/trace of coarse sand, loose, hydrocarbon-like odor, wet
20		20-24'	5.1 ppm 5.4 ppm 2.5 ppm 2.5 ppm 6.5 ppm 7.2 ppm 7.2 ppm 6.9 ppm		Brown, silty fine SAND, loose, wet
25		24-28'	0.7 ppm 0.8 ppm 1.1 ppm 1.6 ppm 0.7 ppm		Brown, fine-medium, SAND, w/trace of silt, medium dense, wet
		28-32'	1.6 ppm 0.9 ppm		Brown, silty fine SAND, w/trace of medium sand, loose, wet

Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	Site Id: SHSB-09
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
					Base of Boring – 32'
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-10	
Location: Sag Harbor, Suffolk County, New York	
Purpose: Soil Boring	
Date(s): 03/16/00 - 03/16/00	
Total Depth: 52.00'	
Elevation: 4.12'	
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Remarks: Samples taken for analysis at 2-4' and 24-26'. A composite sample was used for 12-14', 14-16', 16-18', and 18-20'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	62 ppm 92 ppm 511 ppm 264 ppm		Gray silty FILL, w/c gravel, soft, slightly plastic, hydrocarbon-like odor, wet Dark brown, clayey PEAT, soft, plastic, moist, hydrocarbon-like odor Brown, NAPL laden SAND, loose, heavy hydrocarbon-like odor, wet
5		4-8'	57 ppm 67 ppm 419 ppm 238 ppm		Brown-gray, fine-coarse, NAPL laden SAND, wet, heavy hydrocarbon-like odor, wet
10		8-12'			No recovery, 8'-12' - liner covered w/NAPL
		12-14'	2.0 ppm		Brown, fine-medium SAND, loose, slight hydrocarbon-like odor, wet
15		14-16'	2.1 ppm		Brn, sandy SILT, stiff, slightly plastic, slight hydrocarbon-like odor, moist
		16-18'	2.0 ppm		Brown, fine-medium SAND, w/trace coarse sand, loose, hydrogen sulfide-like odor, wet
		18-20'	3.1 ppm		Same as above
20		20-24'	0.2 ppm 0.2 ppm 0.2 ppm 1.0 ppm		Brown, fine-medium SAND, trace silt and coarse sand, loose, wet
25		24-28'	0.5 ppm 0.4 ppm 0.2 ppm 0.3 ppm		Light brown, fine SAND, trace silt, loose, wet
		28-32'	9.7 ppm 3.7 ppm 4.0 ppm 4.4 ppm		Light brown, medium-coarse SAND, loose, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-10
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	0.9 ppm 3.5 ppm 1.3 ppm		Light brown, very fine, sandy SILT, soft, non–plastic, wet
35		36–40'	0.5 ppm 3.9 ppm 4.5 ppm 3.6 ppm		Light brown, fine–coarse SAND, loose, wet
40		40–44'			No recovery, 40'–44'
45		44–48'	2.8 ppm 7.0 ppm 4.4 ppm 5.2 ppm 3.4 ppm 1.1 ppm		Brown, fine–coarse, silty SAND, dense, wet
		48–52'			No recovery, 48'–52'
50					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-11	
Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	
Purpose: Soil Boring	
Date(s): 03/23/00 – 03/23/00	
Total Depth: 32.00'	
Elevation: 4.54'	
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Remarks: Samples taken for analysis at 1.5–3.5', 6–8', and 8–10'. A composite sample was used for 24–26' and 26–28'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.5 ppm 0.4 ppm 0.5 ppm 1.6 ppm		Brn–blk, silty sandy FILL, w/coal and crushed rock, loose, moist Brown, fine–medium sandy FILL, loose, wet at 2.5'
5		4–8'	5.6 ppm 10.9 ppm 54.6 ppm 153 ppm 38 ppm 67 ppm 165 ppm		Gray to black, fine–coarse sandy FILL, trace silt, hydrocarbon–like odor, intermittent–heavy staining, sheen
10		8–12'	220 ppm 160 ppm 50 ppm 140 ppm 140 ppm 57 ppm 17 ppm		Brown, clayey PEAT, soft, plastic, heavy hydrocarbon–like odor, moist Brown, med sandy SILT, med plastic, slight hydrocarbon–like odor, wet
15		12–16'	18 ppm 36 ppm 23 ppm 50 ppm 48 ppm		Dark brown, medium SILT, slightly plastic, hydrocarbon–like odor, wet
		16–20'	2.9 ppm 6.1 ppm		Brown, silty fine SAND, trace med sand, loose, hydrocarbon–like odor, wet
20		20–24'	4.2 ppm 7.1 ppm 12 ppm 4.6 ppm 4.0 ppm 2.2 ppm		Brown, fine–medium SAND, w/some silt, medium dense, wet
25		24–26	2.4 ppm		Light brown, fine–medium SAND, loose, wet (composite sample)
		26–28'	2.2 ppm		Same as above (composite sample)
		28–32'	6.8 ppm		Light brown, fine–coarse SAND, loose, wet

Location: SAG HARBOR, SUFFOLK COUNTY, NEW YORK	Site Id: SHSB-11
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
					Base of Boring — 32'
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-12

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/24/00 - 03/24/00

Total Depth: 36.00'

Remarks: Samples collected for analysis from: 1.5-3.5 ft and 6-8 ft.

Elevation: 3.98'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 0.0 ppm 20 ppm 50 ppm 120 ppm		FILL - Black crushed coal, some silt, wet at 2" Brown, fine sandy FILL, loose, w/rounded coarse gravel, hydrocarbon-like odor, brown staining, wet
5		4-8'	130 ppm 150 ppm 175 ppm 211 ppm 49 ppm 35 ppm		Brown, fine sandy FILL, loose, stained, heavy hydrocarbon-like odor, wet Brown, clayey PEAT, slight hydrocarbon-like odor, soft, plastic, moist
10		8-12'	96 ppm 45 ppm 29 ppm 60 ppm		Brown, clayey PEAT, brackish odor, soft, plastic, moist
15		12-16'	82 ppm 138 ppm 68 ppm 1700 ppm 48 ppm 22 ppm 26 ppm 18 ppm		Gray-black, fine, NAPL laden SAND, loose, heavy hydrocarbon-like odor, wet Brown, clayey PEAT, soft, plastic, brackish odor
		16-20'	0.8 ppm 3.6 ppm 8.9 ppm 1.2 ppm 12.7 ppm 13.9 ppm		Brown, fine, silty SAND, med dense, hydrocarbon-like odor, wet Light brown, fine SAND, trace of silt, medium dense, slight hydrocarbon-like odor, wet
20		20-24'	1.0 ppm 2.3 ppm 2.0 ppm 1.0 ppm 3.4 ppm 3.0 ppm 5.5 ppm 16 ppm		Brown, fine-medium SAND, trace of silt, medium dense, slight hydrocarbon-like odor, wet
25		24-28'	0.0 ppm 1.0 ppm 1.4 ppm 2.5 ppm		Brown, fine SAND, medium dense, wet
		28-32'	0.0 ppm		Brown, fine-medium SAND, trace coarse sand, loose, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-12
Purpose: Soil Boring	Total Depth: 36.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	0.0 ppm 0.7 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, fine, silty SAND, medium dense, wet Gray–brown SILT, stiff, plastic
35					Base of Boring – 36'
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-13

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/27/00 – 03/27/00

Total Depth: 36.00'

Elevation: 4.33'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 2–4', 10–12', and 18–20'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm 0.0 ppm 0.0 ppm 0.7 ppm		FILL – brown silt w/crushed rock, above black coal, wet at 3" Brown, silty, fine sandy FILL, wet
5		4–8'	1.8 ppm 11.2 ppm 19.1 ppm 52 ppm 64 ppm 97 ppm		Light brown, silty, fine sandy FILL, slight hydrocarbon-like odor, wet Black, sandy silty FILL, soft, plastic, hydrocarbon-like odor, wet Black-grey, fine-med sandy FILL w/some silt, hydrocarbon-like odor, wet Brown, clayey PEAT, soft, plastic, wet, hydrocarbon-like odor
10		8–12'	65 ppm 332 ppm 303 ppm 358 ppm 107 ppm		Brown, clayey PEAT, soft, organic material, plastic, heavy hydrocarbon-like odor, moist Dark brown, sandy SILT, soft, plastic, wet
15		12–16'	110 ppm 78 ppm 102 ppm		Brown, fine, silty SAND, loose, hydrocarbon-like odor, brown staining, wet
		16–20'	202 ppm 66 ppm 110 ppm 202 ppm 238 ppm 102 ppm		Light brown, fine SAND, loose, heavy hydrocarbon-like odor, intermittant brown staining, sheen, wet
20		20–24'	19.1 ppm 6.4 ppm 25.3 ppm 30 ppm 21 ppm 38 ppm		Light brown, fine-medium SAND, loose, hydrocarbon-like odor, slight sporadic staining, wet
25		24–28'	2.7 ppm 2.3 ppm 1.8 ppm 1.8 ppm 4.0 ppm 3.7 ppm 2.0 ppm 1.5 ppm		Light brown, fine SAND, w/some silt and medium sand, loose, wet
		28–32'	0.0 ppm 3.5 ppm 7.2 ppm 3.0 ppm		Light brown, fine-coarse SAND, medium dense, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-13
Purpose: Soil Boring	
Consulting Firm: Dvirka & Bartilucci	Total Depth: 36.00'
	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	2.5 ppm 0.8 ppm 1.2 ppm 2.4 ppm 3.7 ppm 3.3 ppm 5.4 ppm 2.1 ppm		Light brown, fine–medium SAND, trace coarse sand and gravel, medium dense, wet
35					
					Base of Boring – 36'
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-14

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/06/00 – 03/07/00

Total Depth: 52.00'

Elevation: 4.88'

Datum: Mean Sea Level

Logged By: D. Stahl

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 5–7' and 48–50'. Boring grouted 0–15' w/collapse below to 52'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	161 ppm 343 ppm 2000+ ppm 761 ppm 842 ppm 2000+ ppm		Asphalt above brown sandy FILL w/black cinders, loose, moist Brown, sandy FILL, red brick fragment, loose, wet Black, medium–fine SAND, trace silt, loose, wet
5		4–8'	2000+ ppm 2000+ ppm 2000+ ppm 2000+ ppm 2000+ ppm 2000+ ppm		Brown, medium–fine SAND, trace coarse sand, loose, wet Black–brown, med–fine SAND, trace coarse sand and gravel, loose, hydrocarbon–like odor, staining, sheen, wet
10		8–12'	63 ppm 184 ppm 144 ppm 63 ppm 28 ppm 62 ppm		Dark brown, med–fine SAND, trace coarse sand, w/sheen and hydrocarbon–like odor, staining
15		12–16'	6.8 ppm 8.6 ppm 3.9 ppm 4.2 ppm 3.1 ppm 2.6 ppm 2.4 ppm 3.1 ppm		Brown, med–fine SAND, trace coarse sand, loose, slight odor, wet
		16–20'	4.0 ppm 3.6 ppm 3.9 ppm 4.8 ppm 5.8 ppm 3.2 ppm 2.9 ppm 3.2 ppm		Brown, medium–fine SAND, trace coarse sand, trace silt, loose, wet
20		20–24'	2.4 ppm 1.6 ppm 2.2 ppm 1.9 ppm 2.6 ppm 2.2 ppm 2.4 ppm 2.2 ppm		Brown, medium–fine SAND, little coarse sand, trace silt, loose, wet
25		24–28'	0.9 ppm 0.9 ppm 0.6 ppm 0.8 ppm 0.3 ppm 0.2 ppm 0.0 ppm		Brown, coarse–fine SAND, trace fine gravel, loose, wet
		28–32'	0.6 ppm 0.5 ppm 0.5 ppm 0.3 ppm		Brown, coarse–fine SAND, loose, wet grades to brown, med–fine SAND, trace coarse sand, loose, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-14
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	0.4 ppm 0.2 ppm 0.2 ppm 0.3 ppm 0.2 ppm 0.1 ppm 0.2 ppm 0.0 ppm 0.0 ppm		Brown medium–fine SAND, loose, wet Brown, fine SAND, trace medium sand and silt, loose, wet
35		36–40'	0.0 ppm		Brown, fine SAND, trace silt, loose, grades to brown, fine SAND, little silt, loose, wet
40		40–44'	0.0 ppm 0.2 ppm 0.0 ppm		Brown, fine SAND, trace silt and medium sand, loose, wet Grey–brown, fine SAND, little silt, medium dense, wet
45		44–48'			No recovery – 44'–48'
50		48–52'	0.0 ppm		Brown, coarse–medium SAND, trace medium–fine gravel, trace fine sand, loose, wet
					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-15	
Location: Sag Harbor, Suffolk County, New York	
Purpose: Soil Boring	
Date(s): 03/06/00 – 03/07/00	
Total Depth: 52.00'	
Elevation: 5.96'	
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Remarks: Samples selected for analysis at 5–7', 16–18', and 48–50'. Composite was taken at 28–32', 36–38', and 38–40', when the liner became wedged in core barrel.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	1.4 ppm 0.8 ppm 1.2 ppm 0.9 ppm		Brown, silty, fine sandy FILLD, loose, moist
5		4–8'	22 ppm 264 ppm 210 ppm 58 ppm 51 ppm 64 ppm		Brown, fine–coarse sandy FILL, loose, slight hydrocarbon–like odor, wet Brown, NAPL stained, fine–coarse sandy FILL, loose, hydrocarbon–like odor, wet Gray–brown, fine–coarse sandy FILL, hydrocarbon–like odor, intermittent brown staining, loose, wet
10		8–12'	14.4 ppm 13.1 ppm 6.4 ppm 5.9 ppm 5.3 ppm 5.9 ppm 5.5 ppm		Gray–brown, fine–medium sandy FILL, loose, slight hydrocarbon–like odor, wet Brown, peaty CLAY, soft, plastic, w/organic matter, moist Gray–brown, fine–med, silty SAND, loose, slight hydrocarbon–like odor, wet
15		12–16'	5.5 ppm 6.6 ppm 7.6 ppm 4.4 ppm 4.2 ppm 14.6 ppm 3.5 ppm 3.7 ppm 4.5 ppm		Brown, fine–coarse SAND, trace silt, loose, wet Brown, fine–medium SAND, trace silt, loose, wet
		16–20'	6.1 ppm 3.5 ppm 2.4 ppm 3.5 ppm 4.1 ppm 2.4 ppm 2.7 ppm 1.6 ppm		Same as above, medium dense
20		20–24'	1.8 ppm 1.8 ppm 1.6 ppm 1.7 ppm 1.6 ppm 1.8 ppm 2.5 ppm 59.1 ppm		Brown, fine–med SAND, trace silt and coarse sand, med dense, wet Brown, fine–med, silty SAND, tr. coarse sand, dense–med dense, wet Brown, fine–coarse SAND, medium dense, wet
25		24–28'	192 ppm 201 ppm 78 ppm 47.1 ppm 122.2 ppm 47.9 ppm		Brown, fine–coarse SAND, trace silt, dense, hydrocarbon–like odor, heavy staining, NAPL at 27.5', sheen, wet
		28–32'	36.5 ppm		Light brown, fine–coarse SAND, loose, slight napthalene–like odor, slight sheen, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-15
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	2.8 ppm 49.9 ppm 19.7 ppm 18.8 ppm 6.0 ppm 25.1 ppm 12.2 ppm 8.5 ppm 2.4 ppm		Light brown, fine-med SAND, loose, slight hydrocarbon-like odor, slight sheen, wet
35					Brown, fine SAND, loose, wet
		36–38'			
		38–40'	0.7 ppm		Brown, fine-coarse SAND, loose, wet
40		40–44'	5.3 ppm 6.9 ppm 1.3 ppm 1.3 ppm 1.1 ppm 0.9 ppm 1.2 ppm 0.9 ppm		Light brown, fine-coarse SAND, w/trace fine-coarse gravel, wet
45		44–48'	2.6 ppm 0.9 ppm 3.7 ppm 3.5 ppm 1.9 ppm 2.6 ppm 1.4 ppm 1.2 ppm		Light brown, fine-coarse SAND, w/trace gravel, loose, wet
50		48–52'	0.2 ppm 0.6 ppm 6.7 ppm 8.4 ppm 3.6 ppm 5.3 ppm 8.3 ppm 8.0 ppm		Same as above
					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-16

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/07/00 – 03/08/00

Total Depth: 52.00'

Elevation: 3.49'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 6–8' and 50–52'. Composite samples obtained 12–14', 14–16' 28–30', 30–32', 32–34' and 34–36'.

Sample Interval	PID	Material Description
0–4'	0.1 ppm 0.0 ppm 0.2 ppm 3.1 ppm 9.8 ppm 16.6 ppm	ASPHALT, 1/2" thick Brown, sandy, silty FILL w/brick soft, dry Gray–brown, med–coarse sandy FILL, loose, slight hydrocarbon–like odor, wet
4–8'	0.5 ppm 6.8 ppm 6.4 ppm 88.3 ppm 72 ppm 180 ppm	Gray–brown, med–coarse sandy FILL, loose, slight hydrocarbon–like odor, wet Black, NAPL stained, fine–med sandy FILL, loose, NAPL–like odor, wet Brown, clayey PEAT, soft, plastic, NAPL–like odor, wet
8–12'		No recovery – 8'–12'
12–14'	0.0 ppm	Brown, fine–medium SAND, some silt, loose, wet
14–16'	0.0 ppm	Brown, fine–medium, silty SAND, some coarse gravel
16–20'	0.2 ppm 0.2 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, med–coarse SAND, grading to fine–med SAND, loose, wet
20–24'	0.0 ppm 0.5 ppm	Brown, fine–medium SAND, trace coarse sand, loose wet
24–28'	0.0 ppm	Light brown, fine–medium SAND, trace coarse sand, loose, wet
28–30'	0.0 ppm	Light brown, fine–coarse SAND, loose, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-16
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		30–32'	0.0 ppm		Light brown, fine–coarse SAND, loose, wet
		32–34'	0.0 ppm		Light brown, fine SAND, loose, wet
		34–36'	0.0 ppm		Same as above
35					
		36–40'	0.2 ppm 0.2 ppm 0.4 ppm 0.3 ppm 0.2 ppm 0.3 ppm		Same as above
40		40–44'	0.3 ppm 0.2 ppm 0.3 ppm 0.3 ppm 0.3 ppm 0.4 ppm		Same as above, medium dense
		44–48'	0.0 ppm 0.1 ppm 0.1 ppm 0.1 ppm		Light brown to orange brown, fine–med SAND, med dense, wet
45					
		48–52'	0.0 ppm 0.0 ppm 0.0 ppm 0.1 ppm 0.2 ppm 0.1 ppm		Brown to orange brown SILT, slightly plastic, soft, wet
50					
					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHSB-17

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/08/00 – 03/08/00

Total Depth: 32.00'

Elevation: 4.86'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 14–16'. Boring not completed w/earth probe due to a gravel layer between 28–32'. A composite sample was used at 16–18', 18–20', 20–22', 22–24', 24–26', and 26–28'.

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm		Orange–brown, coarse SAND, loose, moist
			0.0 ppm		
			0.0 ppm		Brown, fine–med, sandy SILT, tr coarse gravel, stiff, moist
			0.2 ppm		
			0.0 ppm		Brown, sandy SILT, stiff, trace coarse gravel, wet
			0.0 ppm		
		4–8'	0.0 ppm		Brown–gray, fine–coarse SAND, trace silt and coarse rounded gravel, loose, wet
5					
		8–12'	0.0 ppm		Brown, clayey PEAT, soft, brackish odor, moist
			9.6 ppm		
			10.2 ppm		
10					
		12–16'	2.5 ppm		Dark brown SILT, soft, slightly plastic, brackish odor, wet
			0.0 ppm		
			0.8 ppm		
			1.9 ppm		
			1.8 ppm		Brown, sandy SILT, non–plastic, loose, brackish odor, wet
15					
		16–18'	0.0 ppm		Brown, fine–coarse SAND, loose, wet
		18–20'	0.0 ppm		Same as above
20		20–22'	0.0 ppm		Brown, fine–coarse SAND, trace of rounded coarse gravel, loose, wet
		22–24'	0.0 ppm		Brown, fine–coarse SAND, loose, wet
		24–26'	0.0 ppm		Brown, fine–medium SAND, w/some coarse sand, loose, wet
25		26–28'	0.0 ppm		Brown, fine–coarse SAND, w/trace of semi rounded gravel, loose, wet
		28–32'			No recovery 28'–32' Drillers reported probe advancement impeded by gravel

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-17
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
					Base of Boring - 32'
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-18

Location: Sag Harbor, Suffolk County, New York

Purpose: Soil Boring

Date(s): 03/27/00 - 03/27/00

Total Depth: 32.00'

Remarks: Samples selected for analysis at 1-3', 6-8', and 30-32'.

Elevation: 4.38'

Datum: Mean Sea Level

Logged By: John Schafer

Drilling Method: Direct Push

Contractor: Emington

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm		Brown, silty, sandy FILL, w/crushed rock, red brick, wet at 2.5'
			0.0 ppm		Brown, silty fine SAND, 2" layer tan-brown CLAY, soft, plastic, wet
		4-8'	3.2 ppm		Black, silty fine SAND, loose, hydrocarbon-like odor, wet
5			115.7 ppm		
			23.9 ppm		Brown, fine-med, stained SAND, heavy hydrocarbon-like odor, sheen, wet
			113 ppm		
			72 ppm		Brown, clayey PEAT, soft, plastic, hydrocarbon-like odor
			33 ppm		Brown, silty fine SAND, loose, hydrocarbon-like odor, wet
		8-12'	64 ppm		Brown, silty fine SAND, medium dense, hydrocarbon-like odor, wet
			34 ppm		
			23 ppm		
			25 ppm		
10					
		12-16'	5.4 ppm		Brown, silty fine SAND, w/layer of subrounded gravel, slight hydrocarbon-like odor, sheen at sample base
			3.3 ppm		
			22.1 ppm		
			5.6 ppm		
15					
		16-20'	0.3 ppm		Brown, fine-medium SAND, trace silt and coarse gravel, loose, wet
20		20-24'	0.0 ppm		Brown, silty fine SAND, medium dense, wet
			2.8 ppm		
			3.0 ppm		
			0.8 ppm		
			0.7 ppm		
			1.5 ppm		
			1.3 ppm		
			0.5 ppm		
			0.0 ppm		
		24-28'			Brown, fine SAND, some silt, medium dense, wet
25					
		28-32'	0.0 ppm		Brown, fine-med SAND, some silt and coarse sand, med dense, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-18
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
			0.0 ppm		Base of Boring – 32'
35					
40					
45					
50					
55					
60					
65					

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

Site Id: SHSB-19	
Location: Sag Harbor, Suffolk County, New York	
Purpose: Soil Boring	
Date(s): 03/21/00 - 03/21/00	
Total Depth: 52.00'	
Elevation: 3.86'	Remarks: A composite was used for 16-18' and 18-20'.
Datum: Mean Sea Level	
Logged By: John Schafer	
Drilling Method: Direct Push	
Contractor: Emington	
Borehole Dia.: 2.00in	

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0-4'	0.0 ppm 0.2 ppm 0.5 ppm 1.4 ppm		Black, FILL in silty matrix, crushed rock, loose, wet at 2"
5		4-8'	1.5 ppm 25 ppm 15 ppm 19 ppm 30 ppm 5.0 ppm		Gray, f-m SAND, loose, hydrocarbon-like odor, intermittent staining, wet Brown, clayey PEAT, soft, plastic, hydrocarbon-like odor Light brown, silty fine SAND, loose, slight hydrocarbon-like odor, wet
10		8-12'	2.0 ppm 6.0 ppm 7.0 ppm 2.0 ppm 4.5 ppm 4.1 ppm 3.0 ppm		Brown, silty fine SAND, loose, hydrogen sulfide-like odor, wet
15		12-16'	2.3 ppm 2.4 ppm 2.8 ppm 2.1 ppm 3.3 ppm 1.3 ppm 1.3 ppm		Same as above
		16-18'	1.7 ppm		Brown, fine SAND, trace silt, loose, wet
		18-20'	0.8 ppm		Brown, fine-medium SAND, trace coarse sand and silt
20		20-24'	0.0 ppm		Brown, fine-coarse SAND, loose, wet
25		24-28'	0.0 ppm		Brown, fine-medium SAND, trace coarse sand, loose, wet
		28-32'	0.0 ppm		Light brown, silty fine SAND, semi-dense, wet

Location: Sag Harbor, Suffolk County, New York	Site Id: SHSB-19
Purpose: Soil Boring	Total Depth: 52.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		32–36'	0.0 ppm		Light brown, fine–med SAND, trace coarse sand, loose, wet
35		36–40'	0.0 ppm		Light brown, fine–med SAND, loose, wet
40		40–44'	0.0 ppm		Light brown, fine–med SAND, trace coarse sand, loose, wet
		44–48'	0.0 ppm		Brown SILT, very soft, liquid, non–plastic, wet
45					
		48–52'	0.0 ppm		
					Brown, fine–med SAND, trace silt and coarse sand, loose, wet
50					
					Base of Boring – 52'
55					
60					
65					

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

Site Id: SHMW-01I	
Date(s): 04/25/00 – 04/25/00	
Datum: Mean Sea Level	
Elevation: 4.47'	Measuring Point: 4.13'
Completed Depth: 48.00'	Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: Stahl/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 8.00in

Contractor: Delta Well and Pump

Screens:
type: Slotted size: 0.020in dia: 2.00in fm: 1.00' to: 6.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Samples selected for analysis at 0.5–1.5' and 36–38'. Well boring initally drilled/logged to 38' on 3/22/00. Well defective, redrilled to 48'

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
		0–2'	0.0 ppm 0.6 ppm 3.2 ppm	Gravelly FILL, over bk/br m–f SAND, little silt, tr c sand/gravel, moist		
		2–4'	38.1 ppm 261 ppm 117 ppm	Black to brown-grey, med–fine SAND, some silt, tr roots, odor, NAPL, sheen, loose, wet,		
5		4–6'	46.2 ppm 86.4 ppm	Black, med–fine SAND, tr silt and coarse sand, NAPL, odor, irredescent sheen, trace roots in sample tip		
		6–8'	26.8 ppm 35.1 ppm 38.4 ppm	Blk, med–fine SAND, tr c. sand and silt over brn PEAT/SILT, firm, wet		
		8–10'	21.1 ppm 53.1 ppm	Brown, medium–fine SAND, trace silt, NAPL, odor, sheen, loose, wet		
10		10–12'	23.6 ppm 35.1 ppm 16.2 ppm	Brown, med–fine SAND, trace silt and coarse sand, hydrocarbon–like odor, sheen, loose, wet		
		12–14'	9.3 ppm 4.6 ppm 7.8 ppm	Brown, fine SAND, little silt, trace med–coarse sand, odor, wet		
15		14–16'	8.1 ppm 7.2 ppm 5.6 ppm	Brown med–fine SAND tr silt, tr coarse sand, odor, loose, wet,		
		16–18'	5.2 ppm 2.3 ppm 3.0 ppm	Brown, medium–fine SAND, trace silt, odor, loose, wet		
		18–20'	5.4 ppm 3.1 ppm 4.6 ppm 5.7 ppm	Same as above, with trace coarse sand, no odor		
20		20–22'	0.5 ppm 0.9 ppm 0.8 ppm	Same as above		
		22–24'	0.8 ppm 1.2 ppm 0.9 ppm	Same as above		
25		24–26'	0.4 ppm 0.2 ppm 0.2 ppm	Brown, med–fine SAND, little silt, trace coarse sand, med dense, wet		
		26–28'	0.4 ppm 0.6 ppm 0.2 ppm 0.1 ppm	Same as above, but gray–brown		
		28–30'	0.4 ppm 0.3 ppm	Same as above		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-01I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/25/00 - 04/25/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	0.2 ppm 0.3 ppm	Brown, med-fine SAND, trace silt, trace coarse sand, med dense, wet		
		32-34'	0.1 ppm 0.2 ppm	Brown, fine SAND, little medium sand, trace silt, medium dense, wet		
35		34-36'	0.1 ppm	Brown, fine SAND, little med sand, little silt, med dense, wet		
		36-38'	0.1 ppm	Same as above, trace medium sand, trace silt		
40				Drillers reported running sands, could not obtain samples		
45						
				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-02D

Date(s): 04/18/00 - 04/18/00

Datum: Mean Sea Level

Elevation: 5.19' | Measuring Point: 4.66'

Completed Depth: 80.00' | Total Depth: 90.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Deep

Logged By: Schafer/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:

type	size	dia	fm	to
Slotted	0.000in	2.00in	1.50'	7.30'
Slotted	0.020in	2.00in	35.00'	45.00'
Slotted	0.020in	2.00in	65.00'	75.00'

Remarks: 3'-30' log from SHSB-05. Geotech samples taken at 1-3', 35-46', 65-67'and 69-75'. Chemical sample collected from 88-90', labeled SHSB-02(88-90).

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
		1-3'	0.0 ppm	Sandy, gravelly FILL with crushed bluestone, red brick fragment, decayed wood, oily sheen		
				Br, c.-f. SAND, tr. f. sand and silt, loose,wet		
5		4-8'	36.2 ppm 76.4 ppm 132.8 ppm 127.6 ppm 136.4 ppm 141.2 ppm	Blk-brn, med-fine SAND, little f. gravel, tr. silt, NAPL, loose, wet Black-brown, med-fine SAND, trace silt and coarse sand, NAPL-like odor, sheen, trace peat near sampler base, PID = 2.1 ppm in breathing zone		
10		8-12'	36.3 ppm 62.8 ppm 41.6 ppm 38.2 ppm	Dark brown SILT, little peat, tr clay and med-fine sand. Thin seam med-fine SAND, trace coarse SAND near center of sample PID = 0.6pm in breathing zone		
15		12-16'	9.6 ppm 12.4 ppm 26.2 ppm 31 ppm 21.9 ppm 26.8 ppm 32.1 ppm 10.6 ppm	Brown, med-fine SAND, trace silt, trace coarse sand, med dense, layered, wet PID = 0.0 in breathing zone		
		16-20'	21.1 ppm 17.2 ppm 20.4 ppm 71.6 ppm 17.4 ppm 14.2 ppm 9.6 ppm 19.8 ppm	Brown, med-fine SAND, little coarse sand, trace fine gravel, med dense, layered, wet		
20		20-24'	0.6 ppm 0.2 ppm 0.8 ppm 0.6 ppm 0.4 ppm 0.8 ppm 0.5 ppm 0.2 ppm	Gray-brown, med-fine SAND, trace coarse sand, trace silt, med dense, wet		
25		24-28'	0.6 ppm 0.9 ppm 1.1 ppm 0.6 ppm 1.2 ppm 0.9 ppm 1.4 ppm 0.7 ppm	Same as above, no silt		
		28-30'	0.2 ppm 0.5 ppm 0.4 ppm 0.6 ppm	Same as above, little coarse sand		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-02D
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/18/00 - 04/18/00
Purpose: Monitoring Well, Deep	Total Depth: 90.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
				Gray-brown, med-fine SAND, trace coarse sand, trace silt, med dense, wet		
35		35-37'	0.0 ppm	Pale, yellowish-brown SAND, coarse-very coarse, some fine-med gravel		
40		40-42'	0.0 ppm	Same as above		
		44-46'	0.0 ppm	Same as above		
45						
50		50-52'	5.3 ppm 35 ppm 30 ppm 127 ppm	Dark brown, NAPL saturated, silty fine SAND, heavy hydrocarbon-like odor, sheen, loose, wet		
55		55-57'	5.0 ppm 11 ppm 34 ppm 45 ppm	Dark brown, NAPL stained fine-coarse SAND, tr silt, some fine gravel, hydrocarbon-like odor, sheen		
60		60-62'	18 ppm 15 ppm 29 ppm 42 ppm	Same as above		
65		65-67'	20 ppm 12 ppm 34 ppm 58 ppm	Same as above		
		69-71'	19 ppm 25 ppm	Brown, fine-coarse SAND, trace silt, hydrocarbon-like odor, slight staining, sheen, loose, wet		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-02D
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/18/00 - 04/18/00
Purpose: Monitoring Well, Deep	Total Depth: 90.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
			31 ppm 54 ppm			
		73-75'	15 ppm 36 ppm 36 ppm 42 ppm	Brown, fine-medium SAND, w/trace silt and coarse sand, hydrcarbon-like odor, slight staining, loose, wet		
75						
		78-80'	32 ppm 50 ppm	Brown, fine-coarse SAND, hydrocarbon-like odor, slight staining, wet, loose		
80						
85						
		88-90	11.6 ppm	Lt brown, fine-medium liquid SAND, naphthalene-like odor, sheen, floating brown NAPL, loose Composite sample collected		
90				Base of boring - 90'		
95						
100						
105						

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

Site Id: SHMW-03I

Date(s): 04/05/00 - 04/05/00

Datum: Mean Sea Level

Elevation: 5.43'

Measuring Point: 4.87'

Completed Depth: 48.00'

Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: Stahl/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:
type: Slotted size: 0.020in dia: 2.00in fm: 2.00' to: 12.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Due to well's location in road divide and to minimize impact to traffic flow and health and safety, geologic materials were extrapolated

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
				ASPHALT		
				Yellow-brown, sandy, gravelly FILL		
				Dark to pale yellowish brown medium-coarse SAND w/some gravel		
5						
10						
				Brown, medium-coarse SAND, staining		
15						
				Brown, med-fine SAND, trace-little c. sand and silt, wet		
20						
				Brown, coarse to fine SAND, trace-little fine gravel, wet		
25						

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-03I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/05/00 - 04/05/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
				Brown, medium-fine SAND, trace silt, wet		
35				Brown fine SAND, trace-little silt, wet		
40						
				Brown coarse-fine SAND, trace medium gravel, wet		
45						
				Base of Boring - 48 ft.		
50						
55						
60						
65						

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

Site Id: SHMW-04I

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

Datum: Mean Sea Level

Elevation: 5.71'	Measuring Point: 5.13'
Completed Depth: 47.50'	Total Depth: 47.50'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: Stahl/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:
type: Slotted size: 0.020in dia: 2.00in fm: 2.00' to: 12.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: Split spoon samples collected 4-12 feet bgs. The remaining depth descriptions were extrapolated from nearby borings SHSB-14 and SHSB-15

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
				ASPHALT		
				Pale to dark yellow-orange sandy, gravelly FILL		
		4-6'	0.0 ppm 0.0 ppm 99.5 ppm	Dk yellow brown/med gray, med-coarse SAND, some CLAY and med gravel		
5				Pale brown coarse SAND, some fine-med gravel, NAPL staining		
		6-8'	134 ppm 29.4 ppm 16.9 ppm 10.0 ppm	Pale brown coarse-v. coarse SAND w/fine-coarse gravel, NAPL staining, naphthalene-like odor		
		8-10'	234 ppm 105 ppm 40.1 ppm 20.9 ppm	Same as above, but pale yellowish brown		
10		10-12'	166 ppm 42.6 ppm 27.3 ppm	Same as above		
				Gray brown fine-coarse SAND, some gravel, slight staining and odor		
				Brown fine-coarse SAND, slight odor, loose, wet		
				Brown, med-fine SAND, trace coarse sand and silt, loose, wet		
15						
20						
				Brown, coarse-fine SAND, tr fine gravel-coarse sand, loose, wet		
25						

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-04I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/03/00 - 04/03/00
Purpose: Monitoring Well, Intermediate	Total Depth: 47.50'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
				Brown med-fine SAND, tr coarse sand and silt, loose, wet		
				Brown med-fine SAND, trace silt, loose, wet		
35				Brown fine SAND, trace-little silt, loose, wet		
40						
				Grayish brown fine SAND, little silt, medium dense, wet		
				Brown coarse-fine SAND, trace med-fine gravel, loose, wet		
45						
				Base of Boring - 47.5 ft.		
50						
55						
60						
65						

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

Site Id: SHMW-05I	
Date(s): 04/04/00 - 04/04/00	
Datum: Mean Sea Level	
Elevation: 6.14'	Measuring Point: 5.60'
Completed Depth: 48.00'	Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: J. Shafer

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:
type: Slotted size: 0.020in dia: 2.00in fm: 2.00' to: 12.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: SHMW-05I data for 0-48' taken from SHSB-15I
Samples collected for analysis from 5-7', 16-18', and 48-50' from SHSB-15I

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
		0-4'	1.4 ppm 0.8 ppm 1.2 ppm 0.9 ppm	Brown, silty fine SAND, loose, moist		
5		4-8'	22 ppm 264 ppm 210 ppm 58 ppm 51 ppm 64 ppm	Brown, fine-coarse SAND, loose, slight hydrocarbon-like odor, wet Brown, NAPL stained, fine-coarse SAND, loose, hydrocarbon-like odor, wet Gray-brown, fine-coarse SAND, hydrocarbon-like odor, intermittent brown staining, loose, wet		
10		8-12'	14.4 ppm 13.1 ppm 6.4 ppm 5.9 ppm 5.3 ppm 5.9 ppm 5.5 ppm	Gray-brown, fine-medium SAND, loose, slight hydrocarbon-like odor, wet Brown, peaty CLAY, soft, plastic, w/organic matter, moist Gray-brown, fine-med, silty SAND, loose, slight hydrocarbon-like odor, wet		
15		12-16'	5.5 ppm 6.6 ppm 7.6 ppm 4.4 ppm 4.2 ppm 14.6 ppm 3.5 ppm 3.7 ppm	Brown, fine-coarse SAND, trace silt, loose, wet Brown, fine-medium SAND, trace silt, loose, wet		
		16-20'	4.5 ppm 6.1 ppm 3.5 ppm 2.4 ppm 3.5 ppm 4.1 ppm 2.4 ppm 2.7 ppm	Same as above, medium dense		
20		20-24'	1.6 ppm 1.8 ppm 1.8 ppm 1.6 ppm 1.7 ppm 1.6 ppm 1.8 ppm 2.5 ppm	Brown, fine-med SAND, trace silt and coarse sand, med dense, wet Brown, fine-med, silty SAND, tr. coarse sand, dense-med dense, wet Brown, fine-coarse SAND, medium dense, wet		
25		24-28'	59.1 ppm 192 ppm 201 ppm 78 ppm 47.1 ppm 122.2 ppm 47.9 ppm	Brown, fine-coarse SAND, trace silt, dense, hydrocarbon-like odor, heavy staining, NAPL at 27.5', sheen, wet		
		28-32'	36.5 ppm	Light brown, fine-coarse SAND, loose, slight napthalene-like odor, slight sheen, wet		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-05I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/04/00 - 04/04/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		32-36'	2.8 ppm 49.9 ppm 19.7 ppm 18.8 ppm 6.0 ppm 25.1 ppm 12.2 ppm 8.5 ppm	Light brown, fine-med SAND, loose, slight hydrocarbon-like odor, slight sheen, wet		
35		36-38'	2.4 ppm	Brown, fine SAND, loose, wet		
		38-40'	0.7 ppm	Brown, fine-coarse SAND, loose, wet		
40		40-44'	5.3 ppm 6.9 ppm 1.3 ppm 1.3 ppm 1.1 ppm 0.9 ppm 1.2 ppm 0.9 ppm	Light brown, fine-coarse SAND, w/trace fine-coarse gravel, wet		
45		44-48'	2.6 ppm 0.9 ppm 3.7 ppm 3.5 ppm 1.9 ppm 2.6 ppm 1.4 ppm 1.2 ppm 0.2 ppm	Light brown, fine-coarse SAND, w/trace gravel, loose, wet		
				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-06I
	Date(s): 04/10/00 – 04/11/00
	Datum: Mean Sea Level
	Elevation: 4.43' / Measuring Point: 4.15'
Location: Sag Harbor, Suffolk County, New York	Completed Depth: 48.00' / Total Depth: 48.00'
Purpose: Monitoring Well, Intermediate	Screens: type: Slotted size: 0.020in dia: 2.00in fm: 2.00' to: 6.00' type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'
Logged By: J. Shafer	
Drilling Method: 4 1/4" Hollow Stem Auger	
Borehole Dia.: 6.50in	Remarks: 0–4' data obtained from a composite sample.
Contractor: Delta Well and Pump	

Depth (ft)	Sample Interval	Vapor	Material Description
		0.0 ppm	Dark brown, silty fine SAND, trace c. gravel, loose, moist
		4.2 ppm	Brown, fine–coarse SAND, fine–coarse gravel, loose, wet at 2.5'
	4–6'	3.6 ppm 23.2 ppm	Brown, f.–c. SAND, hydrocarbon–like odor, brn staining, sheen, loose, wet Gray SILT, soft, slightly plastic, hydrocarbon–like odor, staining, sheen, wet
5	6–8'	99 ppm 45 ppm 56 ppm	Brown, clayey PEAT, soft, plastic, organic odor, moist Total H2S = 75 ppm
	8–10'	21 ppm	Dk brown, sandy SILT, nonplastic, liquid, hydrocarbon–like odor, staining, sheen, wet Total H2S = 25 ppm
10	10–12'	73 ppm 35 ppm	Same as above, not sandy Total H2S = 31 ppm
	12–14'	16 ppm	Orange–brown, fine SAND, hydrocarbon–like odor, loose, wet Total H2S = 100+ ppm
	14–16'	0.0 ppm	Brown, fine SAND, tr silt and med–c sand, med dense, wet Total H2S = 11 ppm
15	16–18'	0.0 ppm 0.0 ppm 4.9 ppm 0.0 ppm	Brown, silty fine SAND, trace coarse sand, wet
	18–20'	0.0 ppm 0.0 ppm 6.5 ppm 0.0 ppm	Brown, fine SAND, tr silt, dense, wet Total H2S = 2 ppm
20	20–22'	0.0 ppm	Light brown fine–med SAND, med dense, wet Total H2S = 2 ppm
	22–24'	0.0 ppm	Brown, fine SAND, trace silt and fine gravel, medium dense, wet Total H2S = 0 ppm
	24–26'	0.0 ppm	Light brown, fine SAND, trace silt and med sand, med dense, wet
25	26–28'	0.0 ppm	Light brown, silty fine SAND, medium dense, wet
	28–30'	0.0 ppm	Light brown, fine SAND, some silt, tr med sand, med dense, wet

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-06I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/10/00 – 04/11/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30–32'	0.0 ppm	Brown–light brown, fine–medium SAND, trace silt, wet, med dense		
		32–34'	0.0 ppm	Same as above		
		34–36'	0.0 ppm	Same as above		
35				Brown, sandy SILT, semi–soft, non–plastic, wet		
		36–38'	0.0 ppm	Lt brown, fine–med SAND, tr coarse sand and silt, med dense, wet		
		38–40'	0.0 ppm	Light brown, fine–medium SAND, dense, wet		
				Brown SILT, soft, slightly plastic, wet		
40		40–42'	0.0 ppm	Light brown SAND, fine–medium, medium dense, wet		
				Brown SILT, soft, plastic, wet		
		42–44'	0.0 ppm	Brown, f. SAND, w/orange banding and thin silt lenses, med dense, wet		
		44–46'	0.0 ppm	Same as above		
45						
		46–48'	0.0 ppm	Same as above, no orange banding		
				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-07I

Date(s): 03/30/00 – 03/31/00

Datum: Mean Sea Level

Elevation: 5.00' | Measuring Point: 4.72'

Completed Depth: 48.00' | Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: Stahl/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:

type	size	dia	fm	to
Slotted	0.020in	2.00in	1.00'	11.00'
Slotted	0.020in	2.00in	35.00'	45.00'

Remarks:

Depth (ft)	Sample Interval	Vapor	Material Description
	0–2'	0.0 ppm 0.0 ppm 0.0 ppm	ASPHALT Yellow brown–brown, sandy, gravelly FILL, brick fragment at 2.75', wet
	2–4'	96.8 ppm 98.8 ppm 90 ppm	Gry–blk, coarse–v coarse SAND, lens dk–gry soft CLAY, sheen, naphthalene–like odor Brn–gry, coarse–v coarse SAND, f–med gravel, NAPL–saturated, naphthalene–like odor
5	4–6'	89.7 ppm 239 ppm 22.4 ppm 41.4 ppm	Interbedded gray CLAY and f–med olive gray micaceous SAND, w/c. gravel Dark gr, c–v coarse SAND, w/f–coarse gravel, odor, staining, NAPL
	6–8'	370 ppm 228 ppm 273 ppm 26.5 ppm	Moderate yellowish brn/gry/blk, c–v coarse SAND, w/some clay
	8–10'	24.3 ppm 160 ppm	Grayish black and brownish black PEAT, w/clay and hydrogen sulfide–like odor Same as above
10	10–12'	240 ppm 46.5 ppm 18.1 ppm 16.4 ppm	Grayish brown, med–fine SAND, tr silt, slight hydrogen sulfide–like odor Moderate brown, medium–fine, clayey SAND
	12–14'	16.2 ppm 15 ppm 20.4 ppm	Moderate brown, medium–coarse SAND, hydrogen sulfide–like odor Moderate brown, med–coarse SAND, some fine–coarse gravel, tr mica, hydrogen sulfide–like odor
15	14–16'	23.6 ppm 6.9 ppm 44.0 ppm 1.2 ppm	Yellow–br, med coarse–v coarse SAND, w/f.–med gravel, some clay, tr mica
	16–18'	6.3 ppm 18.2 ppm 5.6 ppm 0.0 ppm	Same as above, no clay Moderate–dark yellowish br, coarse–med SAND, w/thin layer of black peat
	18–20'	68.5 ppm	Grayish black PEAT w/coarse gravel
20	20–22'	0.0 ppm 0.1 ppm	Pale–yellow brown, coarse–very coarse SAND
	22–24'	0.0 ppm 0.0 ppm 0.0 ppm	Pale yellow brown, medium– very coarse SAND
25	24–26'	0.0 ppm	Pale–light yellow brown, medium–coarse SAND, trace mica and clay
	26–28'	0.0 ppm	Same as above, no mica or clay; grading to
	28–30'		SAND with some CLAY

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-07I
Location: Sag Harbor, Suffolk County, New York	Date(s): 03/30/00 - 03/31/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	2.2 ppm 0.5 ppm 1.9 ppm 0.6 ppm 0.0 ppm 2.1 ppm 0.3 ppm 0.0 ppm	Pale-yellow brn, med-fine SAND, tr mica, thin lens pale yel-brn, CLAYEY SAND		
		32-34'		Pale-yellow brown, coarse-very coarse SAND		
				Pale-yellow brown, medium-fine clayey SAND w/some mica		
		34-36'		Pale-yellow brown, medium-coarse SAND, w/some clay, fine gravel		
35				Gray-orange, coarse-very coarse SAND, w/fine-coarse gravel, trace mica		
		36-38'	0.0 ppm	Same as above, w/pale yellowish brown, sandy CLAY lens		
		38-40'	0.0 ppm	Pale yellow brown, coarse-v coarse SAND, w/fine-coarse gravel		
40		40-42'	0.0 ppm	Same as above, w/thin lens brown, soft clay at top of sampler		
		42-44'		No recovery (42-44')		
45		44-46'	0.0 ppm	Pale brn/yellow brn/gray/orange, coarse-very coarse SAND, w/some fine to coarse gravel		
		46-48'	0.0 ppm 0.0 ppm 3.3 ppm 0.0 ppm	Pale yellow brown, coarse-v coarse SAND, w/fine-coarse gravel		
				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-08I

Date(s): 04/12/00 – 04/13/00

Datum: Mean Sea Level

Elevation: 5.08'

Measuring Point: 4.15'

Completed Depth: 48.00'

Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: J. Shafer

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:
type: Slotted size: 0.020in dia: 2.00in fm: 1.00' to: 7.00'
type: Slotted size: 0.020in dia: 2.00in fm: 35.00' to: 45.00'

Remarks: 0–2' data obtained from a composite sample

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
			0.0 ppm	Brown, sandy silty FILL, w/cobbles and coarse gravel, wet at 1'		
		2–4'	2.7 ppm	FILL, black vesicular slag, w/tar, naphthalene-like odor, sheen		
		4–6'	0.0 ppm	Brown, silty fine SAND, loose, wet		
5		6–8'	3.2 ppm 30 ppm	Gray, fine-coarse SAND, some f gravel, wet Total H2S = 9 ppm Rich brown PEAT, soft, moist, organic odor Total H2S = 17 ppm		
		8–10'	100 ppm 71 ppm	Same as above (no H2S measurement)		
10		10–12'	70 ppm 69 ppm 54 ppm 81 ppm	Same as above, no odor Yellow-orange SILT, soft, plastic, organic odor, moist Total H2S = 75 ppm		
		12–14'		No Recovery (12–14')		
		14–16'	0.0 ppm	Rich brown, silty fine SAND, organic odor, loose, wet Total H2S = 52 ppm		
15		16–18'	0.0 ppm	Gray-brown, silty fine SAND, medium dense, organic odor, wet Total H2S = 51 ppm		
		18–20'	0.0 ppm	Light brown to brown, fine-coarse SAND w/some silt, loose, wet		
20		20–22'	0.0 ppm	Brown, fine-medium SAND, w/some silt, loose, wet		
		22–24'	0.0 ppm	Light brown, fine SAND, w/some medium sand, loose, wet		
25		24–26'	0.0 ppm	Light brown, fine-medium SAND, loose, wet		
		26–28'	0.0 ppm	Light brown, fine-coarse SAND, trace fine gravel, loose, wet		
		28–30'	0.0 ppm	Same as above, some fine gravel, orange banding		

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-08I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/12/00 - 04/13/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	0.0 ppm	Brown, fine-coarse, silty SAND, w/fine gravel, loose, wet,		
		32-34'	0.0 ppm	Brown, fine-coarse, silty SAND, loose, wet		
		34-36'	0.0 ppm	Brown, fine-coarse, silty SAND, w/fine-coarse gravel, loose, wet		
35		36-38'	0.0 ppm	Light brown, fine-coarse SAND, w/fine-coarse gravel, loose, wet		
		38-40'	0.0 ppm	Brown, fine-coarse SAND, w/some fine-coarse gravel, loose, wet		
40		40-42'		No recovery (40-42')		
		42-44'	0.0 ppm	Brn, fine-coarse SAND, some f. gravel, tr c. gravel, loose, wet		
		44-46'	0.0 ppm	Same as above		
45		46-48'	0.0 ppm	Same as above		
				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-09I	
Date(s): 04/07/00 - 04/07/00	
Datum: Mean Sea Level	
Elevation: 4.41'	Measuring Point: 3.72'
Completed Depth: 48.00'	Total Depth: 48.00'

Location: Sag Harbor, Suffolk County, New York

Purpose: Monitoring Well, Intermediate

Logged By: Stahl/Diamond

Drilling Method: 4 1/4" Hollow Stem Auger

Borehole Dia.: 6.50in

Contractor: Delta Well and Pump

Screens:

type	size	dia	fm	to
Slotted	0.020in	2.00in	2.00'	12.00'
Slotted	0.020in	2.00in	35.00'	45.00'

Remarks: A composite sample was obtained at 0-2'.

Depth (ft)	Sample Interval	Vapor	Material Description
			Brown, silty FILL, w/brick, crushed rock, medium-coarse gravel, moist
	2-4'	0.0 ppm 0.0 ppm	Dark brown, fine, silty sandy FILL, w/some brick, loose, wet
5	4-6'	0.0 ppm 4.1 ppm 0.6 ppm 0.0 ppm	Brown, silty FILL, w/black coal, red brick, and medium gravel Brown, fine-medium SAND, loose, wet
	6-8'	0.0 ppm 2.2 ppm 0.0 ppm 0.0 ppm	Brown, clayey PEAT, soft, plastic, hydrogen sulfide-like odor, moist Brown, silty fine SAND, dense, wet
	8-10'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, silty fine SAND, medium dense, wet
10	10-12'		Same as above
	12-14'	0.0 ppm	Dark brown, silty fine SAND, w/some coarse gravel, medium dense
15	14-16'	0.0 ppm	Brown, fine-medium SAND, loose, wet
	16-18'	0.0 ppm	Same as above
	18-20'	0.0 ppm 0.0 ppm 22.3 ppm	Brown, fine-med SAND, hydrocarbon-like odor, brn staining, sheen, loose, wet Brown CLAY, liquid, soft, hydrocarbon-like odor, sheen
20	20-22'	0.0 ppm 0.0 ppm 0.0 ppm 10.3 ppm	Brown, fine-coarse SAND, sheen, loose, wet Brn SILT, soft, slightly stiff, plastic, hydrocarbon-like odor, stained, sheen
	22-24'	7.3 ppm 0.0 ppm 0.0 ppm	Brn, f.-c. SAND, slight hydrocarbon-like odor and staining, sheen, loose, wet Brown SILT, soft-slightly stiff, plastic, sheen
25	24-26'	0.0 ppm 5.2 ppm 0.0 ppm	Brn, f-med SAND, tr c. sand, some silt, slight hydrocarbon-like odor, sheen
	26-28'	0.0 ppm 0.0 ppm 0.0 ppm	Brn, fine SAND, tr coarse sand, some silt, intermittent orange banding
	28-30'	0.0 ppm 0.0 ppm 0.0 ppm	Brn, fine-medium SAND, loose-medium dense, intermittent orange banding

Consulting Firm: Dvirka & Bartilucci	Site Id: SHMW-09I
Location: Sag Harbor, Suffolk County, New York	Date(s): 04/07/00 - 04/07/00
Purpose: Monitoring Well, Intermediate	Total Depth: 48.00'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	7.2 ppm 0.5 ppm 0.3 ppm	Brown, fine SAND, medium dense, wet		
		32-34'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine SAND, trace silt, medium dense, wet		
35		34-36'	0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine-medium SAND, trace silt, medium dense, wet		
		36-38'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine SAND, trace silt, medium dense, wet		
		38-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, orange-banded, silty fine SAND, med dense-dense, wet		
40		40-42'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, orange-banded, fine SAND, medium dense, wet		
		42-44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, fine-medium SAND, medium dense, wet		
		44-46'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Light brown, very fine SAND, w/some silt, dense, wet		
45		46-48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above Brown SILT, semi stiff, plastic, wet Base of boring - 48'		
50						
55						
60						
65						

APPENDIX D

ANALYTICAL METHODS AND DETECTION LIMITS

Volatiles, 8021B (BTEX)

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
MTBE	1	1
Benzene	1	1
Toluene	1	1
Ethylbenzene	1	1
Xylene (total)	1	1

Note:
CRDL: Contract Required Detection Limit

Volatiles, 8260B

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Chloromethane	5	5
Bromomethane	5	5
Vinyl Chloride	5	5
Chloroethane	5	5
Methylene Chloride	5	5
Acetone	5	5
Carbon Disulfide	5	5
1,1-Dichloroethene	5	5
1,1-Dichloroethane	5	5
1,2-Dichloroethene (total)	5	5
Chloroform	5	5
1,2-Dichloroethane	5	5
2-Butanone	5	5
1,1,1-Trichloroethane	5	5
Carbon Tetrachloride	5	5
Bromodichloromethane	5	5
1,2-Dichloropropane	5	5
cis-1,3-Dichloropropane	5	5
Trichloroethene	5	5
Dibromochloromethane	5	5
1,1,2-Trichloroethane	5	5
Benzene	5	5
trans-1,3-Dichloropropene	5	5
Bromoform	5	5
4-Methyl-2-Pentanone	5	5
2-Hexanone	5	5
Tetrachloroethene	5	5
1,1,2,2-Tetrachloroethane	5	5
Toluene	5	5
Chlorobenzene	5	5
Ethylbenzene	5	5
Styrene	5	5
Xylene (total)	5	5

Note:
NYSDEC ASP list, 5030B/8260B
CRDL: Contract Required Detection Limit

Volatiles, 8260B

ANALYTE	SOIL CRDL ug/kg	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
	5035A, NaHSO4, 5g/5mL	5035A. MeOH, 5g/5mL	
Dichlorodifluoromethane	5	250	5
Chloromethane	5	250	5
Vinyl chloride	5	250	5
Bromomethane	5	250	5
Chloroethane	5	250	5
Trichlorofluoromethane	5	250	5
1,1-Dichloroethene	5	250	5
Carbon disulfide	5	250	5
Iodomethane	5	250	5
Acetone	5	250	5
Methylene chloride	5	250	5
trans-1,2-Dichloroethene	5	250	5
1,1-Dichloroethane	5	250	5
Vinyl acetate	5	250	5
2,2-Dichloropropane	5	250	5
cis-1,2-Dichloroethene	5	250	5
Methyl ethyl ketone	5	250	5
Bromochloromethane	5	250	5
Chloroform	5	250	5
1,1,1-Trichloroethane	5	250	5
Carbon tetrachloride	5	250	5
1,1-Dichloropropene	5	250	5
Benzene	5	250	5
1,2-Dichloroethane	5	250	5
Trichloroethene	5	250	5
1,2-Dichloropropane	5	250	5
Dibromomethane	5	250	5
Bromodichloromethane	5	250	5
2-Chloroethyl vinyl ether	5	250	5
cis-1,3-Dichloropropene	5	250	5
4-Methyl-2-pentanone	5	250	5
Toluene	5	250	5
trans-1,3-Dichloropropene	5	250	5
1,1,2-Trichloroethane	5	250	5
Tetrachloroethene	5	250	5
1,3-Dichloropropane	5	250	5
2-Hexanone	5	250	5
Dibromochloromethane	5	250	5
1,2-Dibromoethane (EDB)	5	250	5
Chlorobenzene	5	250	5
1,1,1,2-Tetrachloroethane	5	250	5
Ethylbenzene	5	250	5
Xylenes, total	5	250	5
Styrene	5	250	5

Volatiles, 8260B (cont.)

Bromoform	5	250	5
Isopropylbenzene	5	250	5
Bromobenzene	5	250	5
1,1,2,2-Tetrachloroethane	5	250	5
1,2,3-Trichloropropane	5	250	5
n-Propylbenzene	5	250	5
2-Chlorotoluene	5	250	5
4-Chlorotoluene	5	250	5
1,3,5-Trimethylbenzene	5	250	5
tert-Butylbenzene	5	250	5
1,2,4-Trimethylbenzene	5	250	5
sec-Butylbenzene	5	250	5
1,3-Dichlorobenzene	5	250	5
4-Isopropyltoluene	5	250	5
1,4-Dichlorobenzene	5	250	5
1,2-Dichlorobenzene	5	250	5
n-Butylbenzene	5	250	5
1,2-Dibromo-3-chloropropane	5	250	5
1,2,4-Trichlorobenzene	5	250	5
Hexachlorobutadiene	5	250	5
1,2,3-Trichlorobenzene	5	250	5
MTBE	5	250	5
Naphthalene	5	250	5

Note:
CRDL: Contract Required Detection Limit

PAH's, 8270C

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Naphthalene	330	10
2-Methylnaphthalene	330	10
Acenaphthylene	330	10
Acenaphthene	330	10
Dibenzofuran	330	10
Fluorene	330	10
Phenanthrene	330	10
Anthracene	330	10
Fluoranthene	330	10
Pyrene	330	10
Benzo (a) anthracene	330	10
Chrysene	330	10
Benzo (b) fluoranthene	330	10
Benzo (k) fluoranthene	330	10
Benzo (a) pyrene	330	10
Indeno (1,2,3-cd) pyrene	330	10
Dibenzo (a,h)anthracene	330	10
Benzo (g,h,i)perylene	330	10

Note:
CRDL: Contract Required Detection Limit

Semivolatiles, 8270C

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Phenol	330	10
bis(-2-Chloroethyl) Ether	330	10
2-Chlorophenol	330	10
1,3-Dichlorobenzene	330	10
1,4-Dichlorobenzene	330	10
1,2-Dichlorobenzene	330	10
2,Methylphenol	330	10
2,2'-oxybis (1-Chloropropane)	330	10
4-Methylphenol	330	10
N-Nitroso-di-n-propylamine	330	10
Hexachloroethane	330	10
Nitrobenzene	330	10
Isophorone	330	10
2-Nitrophenol	330	10
2,4-Dimethyphenol	330	10
2,4-Dichlorophenol	330	10
1,2,4-Trichlorobenzene	330	10
Naphthalene	330	10
4-Chloroaniline	330	10
bis(2-Chloroethoxy)methane	330	10
Hexachlorobutadiene	330	10
4-Chloro-3-methylphenol	330	10
2-Methylnaphthalene	330	10
Hexachlorocyclopentadiene	330	10
2,4,6-Trichlorophenol	330	10
2,4,5-Trichlorophenol	670	20
2-Chloronaphthalene	330	10
2-Nitroaniline	670	20
Dimethylphthalate	330	10
Acenaphthylene	330	10
2,6-Dinitrotoluene	330	10
3-Nitroaniline	670	20
Acenaphthene	330	10
2,4-Dinitrophenol	670	20
4-Nitrophenol	670	20
Dibenzofuran	330	10
2,4-Dinitrotoluene	330	10
Diethylphthalate	330	10
4-Chlorophenyl-phenylether	330	10
Fluorene	330	10
4-Nitroaniline	670	20
4,6-Dinitro-2--methylphenol	670	20
N-Nitrosodiphenylamine (1)	330	10
4-Bromophenyl-phenylether	330	10

Semivolatiles, 8270C (cont.)

Hexachlorobenzene	330	10
Pentachlorophenol	670	20
Phenanthrene	330	10
Anthracene	330	10
Carbazole	330	10
Di-n-butylphthalate	330	10
Fluoranthene	330	10
Pyrene	330	10
Butylbenzylphthalate	330	10
3,3'-Dichlorobenzidine	330	10
Benzo(a)anthracene	330	10
Chrysene	330	10
bis(2-Ethylhexyl)phthalate	330	10
Benzo(b)fluoranthene	330	10
Benzo(k)fluoranthene	330	10
Benzo(a)pyrene	330	10
Indeno(1,2,3-cd)pyrene	330	10
Dibenzo(a,h)anthracene	330	10
Benzo(g,h,I)perylene	330	10

Note:
CRDL: Contract Required Detection Limit

Pesticides, 8081A

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
alpha-BHC	1.7	0.05
beta-BHC	1.7	0.05
delta-BHC	1.7	0.05
gamma-BHC (Lindane)	1.7	0.05
Heptachlor	1.7	0.05
Aldrin	1.7	0.05
Heptachlor epoxide	1.7	0.05
Endosulfan I	1.7	0.05
Dieldrin	3.3	0.10
4,4'-DDE	3.3	0.10
Endrin	3.3	0.10
Endosulfan II	3.3	0.10
4,4'-DDD	3.3	0.10
Endosulfan sulfate	3.3	0.10
4,4'-DDT	3.3	0.10
Methoxychlor	17	0.50
Endrin ketone	3.3	0.10
Endrin aldehyde	3.3	0.10
alpha-Chlordane	1.7	0.05
gamma-Chlordane	1.7	0.05
Toxaphene	170	5

Note:
CRDL: Contract Required Detection Limit

PCBs, 8082

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Aroclor-1016	33	1
Aroclor-1221	33	1
Aroclor-1232	33	1
Aroclor-1242	33	1
Aroclor-1248	33	1
Aroclor-1254	33	1
Aroclor-1260	33	1

Note:
CRDL: Contract Required Detection Limit

Herbicides, 8151A

ANALYTE	SOIL CRDL ug/kg	AQUEOUS CRDL ug/L
Dalapon	40	2.5
Dicamba	1.6	0.10
MCPP	16,000	1,000
MCPA	16,000	1,000
Dichloroprop	16	1.0
2,4-D	16	1.0
2,4,5-TP (Silvex)	1.6	0.10
2,4,5-T	1.6	0.10
2,4-DB	16	1.0
Dinoseb	8.0	0.5

Note:
CRDL: Contract Required Detection Limit

RCRA 8 Metals, 6010B, 7470A or 7471A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Arsenic	2	20
Barium	20	200
Cadmium	0.5	5
Chromium	2	20
Lead	1	10
Mercury	0.1	0.3
Selenium	2	20
Silver	3	30

Note:
CRDL: Contract Required Detection Limit

Total Metals, 6010B, 7470A or 7471A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Aluminum	30	300
Antimony	3	30
Arsenic	2	20
Barium	20	200
Beryllium	0.6	6
Cadmium	0.5	5
Calcium	80	800
Chromium	2	20
Cobalt	5	50
Copper	3	30
Iron	300	300
Lead	1	10
Magnesium	50	500
Manganese	5	50
Mercury	0.1	0.3
Nickel	5	50
Potassium	200	2000
Selenium	2	20
Silver	3	30
Sodium	10	100
Thallium	1	10
Vanadium	5	50
Zinc	5	50

Note:
CRDL: Contract Required Detection Limit

Total Cyanide, 9010B, 9012A

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Cyanide, total and free	1	20

Total Phenols, 9065

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Phenols	5	100

Hexavalent Chromium, 7196

ANALYTE	SOIL CRDL mg/kg	AQUEOUS CRDL ug/L
Hexavalent Chromium	1	10

Note:
CRDL: Contract Required Detection Limit

TCLP

Volatiles, 8260B

ANALYTE	AQUEOUS CRDL ug/L
Vinyl Chloride	5
1,1-Dichloroethene	5
Chloroform	5
1,2-Dichloroethane	5
Methyl ethyl ketone (2-Butanone)	5
Carbon Tetrachloride	5
Trichloroethene	5
Benzene	5
Tetrachloroethene	5
Chlorobenzene	5

Semivolatiles, 8270C

ANALYTE	AQUEOUS CRDL ug/L
Pyridine	33
1,4-Dichlorobenzene	33
Cresol, Total	33
Hexachloroethane	33
Nitrobenzene	33
Hexachlorobutadiene	33
2,4,6-Trichlorophenol	33
2,4,5-Trichlorophenol	33
2,4-Dinitrotoluene	33
Hexachlorobenzene	33
Pentachlorophenol	33

Metals, 6010B, 7470A

ANALYTE	AQUEOUS CRDL ug/L
Arsenic	20
Barium	200
Cadmium	5
Chromium	20
Lead	10
Mercury	2
Selenium	20
Silver	30

TCLP (cont.)

Pesticides, 8081A

ANALYTE	AQUEOUS CRDL ug/L
Lindane	0.17
Heptachlor	0.17
Heptachlor epoxide	0.17
Endrin	0.33
Methoxychlor	1.7
Chlordane	17
Toxaphene	17

Herbicides, 8151A

ANALYTE	AQUEOUS CRDL ug/L
2,4-D	3.3
2,4,5-TP (Silvex)	0.33

Note:
CRDL: Contract Required Detection Limit

APPENDIX E

ANALYTICAL RESULTS - DATA SUMMARY TABLES

TABLE E-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-01 SHSS-01 (0-6") 03/29/2000 0.00	SHSS-02 SHSS-02 (0-2") 03/29/2000 0.00	SHSS-03 SHSS-03 (0-6") 03/29/2000 0.00	SHSS-04 SHSS-04 (0-2") 03/29/2000 0.00	SHSS-05 SHSS-05 (0-6") 03/29/2000 0.00
Naphthalene	(mg/kg)	13	0.83 J	3.6	6.1	1.5 J	0.34 U
2-Methylnaphthalene	(mg/kg)	36.4	0.41 J	1.7 J	2.7	0.9 J	0.34 U
Acenaphthylene	(mg/kg)	41	4.2	12	18	9.4	0.34 U
Acenaphthene	(mg/kg)	50	1.8 U	1.8 U	1.9 U	1.8 U	0.34 U
Dibenzofuran	(mg/kg)	6.2	1.8 U	0.27 J	0.42 J	1.8 U	0.34 U
Fluorene	(mg/kg)	50	0.34 J	1.2 J	1.8 J	0.9 J	0.34 U
Phenanthrene	(mg/kg)	50	2.5	10	15	3	0.3 J
Anthracene	(mg/kg)	50	1.4 J	5	7.5	2.9	0.04 J
Fluoranthene	(mg/kg)	50	11	40 D	[66] D	15	0.52
Pyrene	(mg/kg)	50	17	[51] D	[82] D	29 D	0.34 J
Benz(a)anthracene	(mg/kg)	0.224	[9.4]	[32] D	[49] D	[17]	0.17 J
Chrysene	(mg/kg)	0.4	[10]	[26]	[47] D	[18]	0.21 J
Benzo(b)fluoranthene	(mg/kg)	1.1	[13]	[39] D	[66] D	[30] D	0.28 J
Benzo(k)fluoranthene	(mg/kg)	1.1	[5.2]	[17]	[20]	[13]	0.13 J
Benzo(a)pyrene	(mg/kg)	0.061	[8.7]	[27]	[45] D	[28]	[0.19] J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[9.4]	[33] D	[49] D	[27]	0.15 J
Dibenz(a,h)anthracene	(mg/kg)	0.014	[1.9]	[6.6]	[10]	[5.7]	0.34 U
Benzo(g,h,i)perylene	(mg/kg)	50	11	37 D	[54] D	30 D	0.15 J
Total CAPAHs	(mg/kg)	10	[57.60]	[180.60]	[286.00]	[138.70]	1.13
Total PAHs	(mg/kg)	500	106.28	342.37	[539.52]	231.30	2.48

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-06 SHSS-06 (0-2") 03/29/2000 0.00	SHSS-07 SHSS-07 (0-6") 03/29/2000 0.00	SHSS-08 SHSS-08 (0-6") 03/31/2000 0.00	SHSS-09 SHSS-09 (0-6") 03/29/2000 0.00	SHSS-10 SHSS-10 (0-6") 04/03/2000 0.00
Naphthalene	(mg/kg)	13	5.7	0.75 J	0.37 U	1.4 J	3 J
2-Methylnaphthalene	(mg/kg)	36.4	2.6	0.36 J	0.37 U	0.53 J	1.1 J
Acenaphthylene	(mg/kg)	41	10	2.9	0.047 J	7.6	21
Acenaphthene	(mg/kg)	50	1.8 U	1.90 U	0.37 U	1.90 U	3.8 U
Dibenzofuran	(mg/kg)	6.2	0.26 J	1.90 U	0.37 U	1.90 U	3.8 U
Fluorene	(mg/kg)	50	1.4 J	0.31 J	0.37 U	0.71 J	3.8 U
Phenanthrene	(mg/kg)	50	12	2.0	0.044 J	2.1 J	6.6
Anthracene	(mg/kg)	50	4.6	0.95 J	0.37 U	2.4	10
Fluoranthene	(mg/kg)	50	21	5.6	0.14 J	10	37
Pyrene	(mg/kg)	50	43 D	10	0.25 J	21	[61]
Benz(a)anthracene	(mg/kg)	0.224	[23]	[4.2]	0.09 J	[12]	[26]
Chrysene	(mg/kg)	0.4	[23]	[4.9]	0.11 J	[12]	[33]
Benzo(b)fluoranthene	(mg/kg)	1.1	[29]	[8.1]	0.18 J	[22]	[44]
Benzo(k)fluoranthene	(mg/kg)	1.1	[14]	[2.4]	0.082 J	[9.4]	[14]
Benzo(a)pyrene	(mg/kg)	0.061	[21]	[5.4]	[0.13] J	[19]	[36]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[22]	[5.9]	0.14 J	[20]	[34]
Dibenz(a,h)anthracene	(mg/kg)	0.014	[4.7]	[1.2] J	0.37 U	[3.6]	[7.3]
Benzo(g,h,i)perylene	(mg/kg)	50	25	7.3	0.18 J	24	44
Total CAPAHs	(mg/kg)	10	[136.70]	[32.10]	0.732	[98.00]	[194.30]
Total PAHs	(mg/kg)	500	262.26	62.27	1.393	167.74	378.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-1
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-11 SHSS-11 (0-6") 03/29/2000 0.00	SHSS-12 SHSS-12 (0-6") 03/30/2000 0.00	SHSS-13 SHSS-13 (0-6") 03/31/2000 0.00
Naphthalene	(mg/kg)	13	2.7	8	0.92 J
2-Methylnaphthalene	(mg/kg)	36.4	1.9	3.2	0.58 J
Acenaphthylene	(mg/kg)	41	8.6	20	4.5
Acenaphthene	(mg/kg)	50	2.1 U	4.2	0.3 J
Dibenzofuran	(mg/kg)	6.2	0.25 J	0.29 J	2.8 U
Fluorene	(mg/kg)	50	0.96 J	3.1	0.91 J
Phenanthrene	(mg/kg)	50	4.0	14	8.6
Anthracene	(mg/kg)	50	2.5	12	2.5 J
Fluoranthene	(mg/kg)	50	8.7	[120] D	16
Pyrene	(mg/kg)	50	15	[140] D	21
Benz(a)anthracene	(mg/kg)	0.224	[8.4]	[82] D	[13]
Chrysene	(mg/kg)	0.4	[9]	[75] D	[12]
Benzo(b)fluoranthene	(mg/kg)	1.1	[18]	[97] D	[21]
Benzo(k)fluoranthene	(mg/kg)	1.1	[8.4]	[50] D	[6.8]
Benzo(a)pyrene	(mg/kg)	0.061	[15]	[100] D	[14]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[16]	[97] D	[11]
Dibenz(a,h)anthracene	(mg/kg)	0.014	[3.2]	[15]	[2.5] J
Benzo(g,h,i)perylene	(mg/kg)	50	20	[110] D	11
Total CAPAHs	(mg/kg)	10	[78.00]	[516.00]	[80.30]
Total PAHs	(mg/kg)	500	142.61	[950.79]	146.61

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
RCRA METALS AND CYANIDE

Date: 04/10/2002

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-01 SHSS-01 (0-6") 03/29/2000 0.00	SHSS-02 SHSS-02 (0-2") 03/29/2000 0.00	SHSS-03 SHSS-03 (0-6") 03/29/2000 0.00	SHSS-04 SHSS-04 (0-2") 03/29/2000 0.00	SHSS-05 SHSS-05 (0-6") 03/29/2000 0.00
Arsenic	(mg/kg)	7.5	3.3	[9.3]	[9.4]	[9.6]	0.34 U
Barium	(mg/kg)	300	40.5 E	70.7 E	153 E	95.4 E	7.9 BE
Cadmium	(mg/kg)	10	0.6	1.1	1.8	1.6	0.1 B
Chromium	(mg/kg)	50	9.6	9.3	9.5	11.2	3.1
Lead	(mg/kg)	500	238 *	415 *	[690] *	306 *	4 *
Mercury	(mg/kg)	0.10	[0.16]	[0.48]	[0.79]	[2.3]	0.17 U
Selenium	(mg/kg)	2	0.67 B	0.96 B	1.6 B	0.45 U	0.34 U
Silver	(mg/kg)		1.4 B	1 B	0.88 B	0.77 B	0.22 B
Cyanide, total	(mg/kg)		0.46 B	0.58 B	0.85	0.54 B	0.14 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers entire site.

TABLE E-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-06 SHSS-06 (0-2") 03/29/2000 0.00	SHSS-07 SHSS-07 (0-6") 03/29/2000 0.00	SHSS-08 SHSS-08 (0-6") 03/31/2000 0.00	SHSS-09 SHSS-09 (0-6") 03/29/2000 0.00	SHSS-10 SHSS-10 (0-6") 04/03/2000 0.00
Arsenic	(mg/kg)	7.5	4.3	6.3	0.45 U	1.8 B	[9.8]
Barium	(mg/kg)	300	66.2 E	[675] E	11.5 BE	31.7 E	160
Cadmium	(mg/kg)	10	3.5	7.2	0.074 B	0.39 B	1.3
Chromium	(mg/kg)	50	14.9	[62.3]	1.9 BE	6.2	10.4
Lead	(mg/kg)	500	[1180] *	[3390] *	50.3 E	108 *	[754]
Mercury	(mg/kg)	0.10	[0.48]	[0.32]	0.19 U	[0.13]	[0.31]
Selenium	(mg/kg)	2	1.3 B	[2.6]	0.45 U	0.48 B	[2.1] B
Silver	(mg/kg)		0.62 B	1.4 B	0.22 U	0.24 B	0.7 B
Cyanide, total	(mg/kg)		2	12.6	0.14 U	0.87	7.9

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers entire site.

TABLE E-2
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL (1) SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSS-11 SHSS-11 (0-6") 03/29/2000 0.00	SHSS-12 SHSS-12 (0-6") 03/30/2000 0.00	SHSS-13 SHSS-13 (0-6") 03/31/2000 0.00
Arsenic	(mg/kg)	7.5	[9.7]	3.8	3.3
Barium	(mg/kg)	300	51.6 E	84.9 E	36.5 E
Cadmium	(mg/kg)	10	0.67	0.55	0.8
Chromium	(mg/kg)	50	10	4.7	14.2 E
Lead	(mg/kg)	500	469 *	240 *	324 E
Mercury	(mg/kg)	0.10	[0.7]	[6.3]	[0.61]
Selenium	(mg/kg)	2	1.1 B	0.93 B	0.4 U
Silver	(mg/kg)		0.65 B	0.49 B	0.67 B
Cyanide, total	(mg/kg)		0.89	0.55 B	0.45 B

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed
(1):Surface soil samples collected beneath the 6" to 8" of crushed stone which covers entire site.

TABLE E-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL(1) SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSS-01 SHSS-01 (0-6") 03/29/2000 0.00	SHSS-02 SHSS-02 (0-2") 03/29/2000 0.00	SHSS-03 SHSS-03 (0-6") 03/29/2000 0.00	SHSS-04 SHSS-04 (0-2") 03/29/2000 0.00	SHSS-05 SHSS-05 (0-6") 03/29/2000 0.00	SHSS-06 SHSS-06 (0-2") 03/29/2000 0.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg= milligram/kilogram

Data qualifiers defined in Glossary.

---=Not Analyzed
(1): Surface soil samples collected Beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL(1) SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	SHSS-07	SHSS-08	SHSS-09	SHSS-10	SHSS-11	SHSS-12
	SAMPLE ID	SHSS-07 (0-6")	SHSS-08 (0-6")	SHSS-09 (0-6")	SHSS-10 (0-6")	SHSS-11 (0-6")	SHSS-12 (0-6")
	DATE	03/29/2000	03/31/2000	03/29/2000	04/03/2000	03/29/2000	03/30/2000
	DEPTH (ft)	0.00	0.00	0.00	0.00	0.00	0.00
Total Phenol	(mg/kg)	12 U	11 U	12 U	12 U	12 U	12 U

mg/kg= milligram/kilogram

Data qualifiers defined in Glossary.

---=Not Analyzed
(1): Surface soil samples collected Beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-3
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SURFACE SOIL(1) SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/29/2000 thru 04/03/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT		
	SITE	SHSS-13
	SAMPLE ID	SHSS-13 (0-6")
	DATE	03/31/2000
	DEPTH (ft)	0.00
Total Phenol	(mg/kg)	11 U

mg/kg= milligram/kilogram

Data qualifiers defined in Glossary.

---=Not Analyzed
(1): Surface soil samples collected Beneath the 6" to 8" of crushed stone which covers the entire site.

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-01 SHSB-01(5-7) 03/20/2000 5.00	SHSB-01 SHSB-01(26-28) 03/20/2000 26.00	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(6-7) 03/20/2000 6.00
Benzene	(mg/kg)	0.06	0.006 U	[6.5]	0.001	0.006 U	[140]
Toluene	(mg/kg)	1.5	0.006 U	[2.5]	0.001 U	0.006 U	[370]
Ethyl benzene	(mg/kg)	5.5	0.006 U	[47]	0.001	0.006 U	[380]
Xylene (total)	(mg/kg)	1.2	0.006 U	[70]	0.002	0.006 U	[500]
Total BTEX	(mg/kg)		0.00	126.00	0.004	0.00	1390.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-02 SHSB-2(16-18) 03/20/2000 16.00	SHSB-02 SHSB-02 (52-54) 03/22/2000 52.00	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00	SHSB-03 SHSB-03 (10-12) 03/20/2000 10.00	SHSB-03 SHSB-03 (34-36) 03/20/2000 34.00
Benzene	(mg/kg)	0.06	[92]	0.001 U	0.002 J	0.15 U	0.001
Toluene	(mg/kg)	1.5	[270]	0.001	0.006	0.15 U	0.003
Ethyl benzene	(mg/kg)	5.5	[240]	0.003	0.006 U	4.8	0.004
Xylene (total)	(mg/kg)	1.2	[380]	0.005	0.006 U	[5.2]	0.005
Total BTEX	(mg/kg)		982.00	0.009	0.008	10.00	0.013

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-04 SHSB-04 (.5-.7) 03/13/2000 0.50	SHSB-04 SHSB-04 (4-8) 03/13/2000 4.00	SHSB-04 SHSB-04 (24-26) 03/15/2000 24.00	SHSB-05 SHSB-05 (.5-.7) 03/13/2000 0.50	SHSB-05 SHSB-05 (4-8) 03/13/2000 4.00
Benzene	(mg/kg)	0.06	0.001 U	[0.39]	0.001 U	0.001 U	0.05 U
Toluene	(mg/kg)	1.5	0.001 U	0.66	0.001 U	0.001 U	0.05 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	[15]	0.001 U	0.001 U	0.28
Xylene (total)	(mg/kg)	1.2	0.001 U	[19]	0.001 U	0.001 U	0.62
Total BTEX	(mg/kg)		0.00	35.05	0.00	0.00	0.90

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-05 SHSB-05 (22-24) 03/13/2000 22.00	SHSB-05 SHSB-05(88-90)* 05/22/2000 88.00	SHSB-06 SHSB-06(.5-1.5) 03/13/2000 0.50	SHSB-06 SHSB-06 (6-8) 03/13/2000 6.00	SHSB-06 SHSB-06 (50-52) 03/13/2000 50.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.001 U	0.05 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.001 U	0.05 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	0.001 U	0.23	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	0.001 U	0.42	0.001 U
Total BTEX	(mg/kg)		0.00	0.00	0.00	0.65	0.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-07 SHSB-07 (0.5-1) 03/17/2000 0.50	SHSB-07 SHSB-07 (26-28) 03/17/2000 26.00	SHSB-07 SHSB-7(8-10') 03/17/2000 8.00	SHSB-08 SHSB-08 (2-4) 03/20/2000 2.00	SHSB-08 SHSB-08 (5-7) 03/20/2000 5.00
Benzene	(mg/kg)	0.06	0.001 U	0.001	[6.2]	[1.9]	[26]
Toluene	(mg/kg)	1.5	0.001 U	0.001 U	0.1 U	1 U	0.5 U
Ethyl benzene	(mg/kg)	5.5	0.003	0.001 U	5.4	[21]	[34]
Xylene (total)	(mg/kg)	1.2	0.01	0.002	[3.8]	[24]	[39]
Total BTEX	(mg/kg)		0.013	0.003	15.40	46.90	99.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-08 SHSB-08(50-52') 03/20/2000 50.00	SHSB-09 SHSB-09(1-3) 03/22/2000 1.00	SHSB-09 SHSB-09(6-8) 03/22/2000 8.00	SHSB-09 SHSB-09(26-28) 03/23/2000 26.00	SHSB-10 SHSB-10 (2-4) 03/16/2000 2.00
Benzene	(mg/kg)	0.06	0.001 U	0.056 U	[0.39]	0.001 U	[11]
Toluene	(mg/kg)	1.5	0.001 U	0.056	0.065 U	0.001	[18]
Ethyl benzene	(mg/kg)	5.5	0.001 U	1.4	1	0.001 U	[63]
Xylene (total)	(mg/kg)	1.2	0.001 U	[2.9]	[1.2]	0.001	[85]
Total BTEX	(mg/kg)		0.00	4.356	2.59	0.002	177.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-10 SHSB-10 (24-26) 03/16/2000 24.00	SHSB-11 SHSB-11(1.8-3.5 03/23/2000 1.80	SHSB-11 SHSB-11(8-10) 03/23/2000 8.00	SHSB-11 SHSB-11(6-8) 03/23/2000 6.00	SHSB-11 SHSB-11(30-32) 03/23/2000 30.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	[44]	0.063 U	0.002
Toluene	(mg/kg)	1.5	0.001 U	0.003	[10]	0.063 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.002	0.005	[160]	0.22	0.018
Xylene (total)	(mg/kg)	1.2	0.002	0.005	[150]	0.22	0.011
Total BTEX	(mg/kg)		0.004	0.013	364.00	0.44	0.031

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-12 SHSB-12 (1-3) 03/24/2000 1.00	SHSB-12 SHSB-12 (6-8) 03/24/2000 6.00	SHSB-12 SHSB-12 (34-36) 03/24/2000 34.00	SHSB-13 SHSB-13 (2-4) 03/27/2000 2.00	SHSB-13 SHSB-13 (10-12) 03/27/2000 10.00
Benzene	(mg/kg)	0.06	0.064 U	0.003	0.001 U	0.013	[7.8]
Toluene	(mg/kg)	1.5	0.064 U	0.001 U	0.001 U	0.004	[10]
Ethyl benzene	(mg/kg)	5.5	0.86	0.031	0.001 U	0.007	[59]
Xylene (total)	(mg/kg)	1.2	[1.3]	0.024	0.001 U	0.021	[66]
Total BTEX	(mg/kg)		2.16	0.058	0.00	0.045	142.80

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-13 SHSB-13 (18-20) 03/27/2000 18.00	SHSB-13 SHSB-13 (34-36) 03/27/2000 34.00	SHSB-14 SHSB-14 (5-7) 03/06/2000 5.00	SHSB-14 SHSB-14 (48-52) 03/06/2000 48.00	SHSB-15 SHSB-15 (5-7) 03/06/2000 5.00
Benzene	(mg/kg)	0.06	0.005 U	0.001 U	3.1 U	0.001 U	1.2 U
Toluene	(mg/kg)	1.5	0.022	0.002	3.1 U	0.001 U	1.2 U
Ethyl benzene	(mg/kg)	5.5	0.11	0.002	[22]	0.001 U	[12]
Xylene (total)	(mg/kg)	1.2	0.14	0.002	[42]	0.001 U	[9.4]
Total BTEX	(mg/kg)		0.272	0.006	64.00	0.00	21.40

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-15 SHSB-15 (16-18) 03/06/2000 16.00	SHSB-15 SHSB-15 (26-28) 03/06/2000 26.00	SHSB-15 SHSB-15 (48-50) 03/07/2000 48.00	SHSB-16 SHSB-16 (6-8) 03/07/2000 6.00	SHSB-16 SHSB-16 (50-52) 03/08/2000 50.00
Benzene	(mg/kg)	0.06	0.001 U	0.012 U	0.001 U	1.2 U	0.001 U
Toluene	(mg/kg)	1.5	0.001 U	0.012 U	0.001 U	1.2 U	0.001 U
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.086	0.001 U	[17]	0.001 U
Xylene (total)	(mg/kg)	1.2	0.001 U	0.1	0.001 U	[8.6]	0.001 U
Total BTEX	(mg/kg)		0.00	0.186	0.00	25.60	0.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-17 SHSB-17 (14-16) 03/08/2000 14.00	SHSB-18 SHSB-18 (1-3) 03/27/2000 1.00	SHSB-18 SHSB-18 (6-8) 03/27/2000 6.00	SHSB-18 SHSB-18 (30-32) 03/27/2000 30.00	SHSB-19 SHSB-19 (2-4) 03/20/2000 2.00
Benzene	(mg/kg)	0.06	0.001 U	0.001 U	0.62 U	0.001 U	0.002 J
Toluene	(mg/kg)	1.5	0.001 U	0.003	0.62 U	0.001 U	0.011
Ethyl benzene	(mg/kg)	5.5	0.001 U	0.001 U	[29]	0.001 U	0.016
Xylene (total)	(mg/kg)	1.2	0.001 U	0.001 U	[34]	0.001 U	0.018
Total BTEX	(mg/kg)		0.00	0.003	63.00	0.00	0.047

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-4
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-19 SHSB-19 (5-7) 03/20/2000 5.00	SHSB-19 SHSB-19 (50-52) 03/20/2000 50.00
Benzene	(mg/kg)	0.06	[0.24]	0.001
Toluene	(mg/kg)	1.5	0.065 U	0.002
Ethyl benzene	(mg/kg)	5.5	2.6	0.001 U
Xylene (total)	(mg/kg)	1.2	[2.6]	0.002
Total BTEX	(mg/kg)		5.44	0.005

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-01 SHSB-01(5-7) 03/20/2000 5.00	SHSB-01 SHSB-01(26-28) 03/20/2000 26.00	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(6-7) 03/20/2000 6.00
Naphthalene	(mg/kg)	13	5.1 J	[580]	0.38 U	1 J	[1600] D
2-Methylnaphthalene	(mg/kg)	36.4	2.4 J	[280]	0.38 U	0.76 J	[540]
Acenaphthylene	(mg/kg)	41	19 J	25 J	0.38 U	4.6	[73]
Acenaphthene	(mg/kg)	50	19 U	[270]	0.38 U	1.9 U	[370]
Dibenzofuran	(mg/kg)	6.2	19 U	51 U	0.38 U	1.9 U	[6.8] J
Fluorene	(mg/kg)	50	19 U	[110]	0.38 U	1.9 U	[160]
Phenanthrene	(mg/kg)	50	12 J	[460]	0.38 U	0.84 J	[720]
Anthracene	(mg/kg)	50	8.6 J	[130]	0.38 U	1.5 J	[170]
Fluoranthene	(mg/kg)	50	[81]	[160]	0.38 U	1.6 J	[220]
Pyrene	(mg/kg)	50	[180]	[330]	0.38 U	4	[310]
Benz(a)anthracene	(mg/kg)	0.224	[68]	[93]	0.38 U	[1.7] J	[98]
Chrysene	(mg/kg)	0.4	[74]	[89]	0.38 U	[2.4]	[86]
Benzo(b)fluoranthene	(mg/kg)	1.1	[77]	[57]	0.38 U	[5]	[59] J
Benzo(k)fluoranthene	(mg/kg)	1.1	[22]	[22] J	0.38 U	[1.2] J	[17] J
Benzo(a)pyrene	(mg/kg)	0.061	[70]	[69]	0.38 U	[6.1]	[79]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[51]	51 U	0.38 U	[5.8]	[32] J
Dibenz(a,h)anthracene	(mg/kg)	0.014	[11] J	51 U	0.38 U	[1.2] J	[8.8] J
Benzo(g,h,i)perylene	(mg/kg)	50	[62]	25 J	0.38 U	10	42 J
Total CAPAHs	(mg/kg)	10	[373.00]	[330.00]	0.00	[23.40]	[379.80]
Total PAHs	(mg/kg)	500	[743.10]	[2700.00]	0.00	47.70	[4591.6]

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-02 SHSB-2(16-18) 03/20/2000 16.00	SHSB-02 SHSB-02 (52-54) 03/22/2000 52.00	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00	SHSB-03 SHSB-03 (10-12) 03/20/2000 10.00	SHSB-03 SHSB-03 (34-36) 03/20/2000 34.00
Naphthalene	(mg/kg)	13	[270]	0.31 J	0.19 J	[160]	0.045 J
2-Methylnaphthalene	(mg/kg)	36.4	[120]	0.27 J	1.8 U	32	0.41 U
Acenaphthylene	(mg/kg)	41	[54]	0.21 J	1.3 J	1 J	0.41 U
Acenaphthene	(mg/kg)	50	38	0.12 J	1.8 U	16	0.41 U
Dibenzofuran	(mg/kg)	6.2	29 U	0.39 U	1.8 U	10 U	0.41 U
Fluorene	(mg/kg)	50	29 U	0.18 J	1.8 U	4.2 J	0.41 U
Phenanthrene	(mg/kg)	50	[160]	0.83	0.44 J	13	0.094 J
Anthracene	(mg/kg)	50	31	0.21 J	0.53 J	3 J	0.41 U
Fluoranthene	(mg/kg)	50	36	0.3 J	1.8	2.8 J	0.41 U
Pyrene	(mg/kg)	50	49	0.42	3.1	4.3 J	0.056 J
Benz(a)anthracene	(mg/kg)	0.224	[16] J	0.15 J	[1.8]	[1.3] J	0.41 U
Chrysene	(mg/kg)	0.4	[14] J	0.14 J	[2]	[1] J	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[9.4] J	0.11 J	[3.3]	10 U	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	[4] J	0.39 U	0.9 J	10 U	0.41 U
Benzo(a)pyrene	(mg/kg)	0.061	[12] J	[0.13] J	[3.1]	[1] J	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[5] J	0.053 J	2.8	10 U	0.41 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	29 U	0.39 U	[0.32] J	10 U	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	6.3 J	0.064 J	4	10 U	0.41 U
Total CAPAHs	(mg/kg)	10	[60.40]	0.583	[14.22]	3.30	0.00
Total PAHs	(mg/kg)	500	[824.7]	3.497	25.58	239.6	0.195 J

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-04 SHSB-04 (.5-.7) 03/13/2000 0.50	SHSB-04 SHSB-04 (4-8) 03/13/2000 4.00	SHSB-04 SHSB-04 (24-26) 03/15/2000 24.00	SHSB-05 SHSB-05 (.5-.7) 03/13/2000 0.50	SHSB-05 SHSB-05 (4-8) 03/13/2000 4.00
Naphthalene	(mg/kg)	13	[14]	[29]	0.4 U	4.2	[790]
2-Methylnaphthalene	(mg/kg)	36.4	3.6 J	21	0.4 U	1.9 J	[470]
Acenaphthylene	(mg/kg)	41	36	2.9 J	0.4 U	39	[54] J
Acenaphthene	(mg/kg)	50	4.4 U	27	0.4 U	3.4 U	[520]
Dibenzofuran	(mg/kg)	6.2	4.4 U	0.66 J	0.4 U	3.4 U	[20] J
Fluorene	(mg/kg)	50	4.4 U	13	0.4 U	3.4 U	[270]
Phenanthrene	(mg/kg)	50	5.1	[50]	0.064 J	23	[960]
Anthracene	(mg/kg)	50	19	17	0.4 U	22	[260]
Fluoranthene	(mg/kg)	50	28	23	0.4 U	[73] D	[380]
Pyrene	(mg/kg)	50	[60]	28	0.4 U	[130] D	[490]
Benz(a)anthracene	(mg/kg)	0.224	[35]	[11]	0.4 U	[56] D	[180]
Chrysene	(mg/kg)	0.4	[42]	[8.9]	0.4 U	[59] D	[160]
Benzo(b)fluoranthene	(mg/kg)	1.1	[62]	[6.4]	0.4 U	[78] D	[110]
Benzo(k)fluoranthene	(mg/kg)	1.1	[18]	[1.9] J	0.4 U	[23]	[32] J
Benzo(a)pyrene	(mg/kg)	0.061	[56]	[7.5]	0.4 U	[82] D	[130]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	[56]	3.1 J	0.4 U	[58] D	[53] J
Dibenz(a,h)anthracene	(mg/kg)	0.014	[12]	[0.7] J	0.4 U	[14]	[14] J
Benzo(g,h,i)perylene	(mg/kg)	50	[71] E	3.5 J	0.4 U	[76] D	[63] J
Total CAPAHs	(mg/kg)	10	[281.00]	[39.50]	0.00	[370.00]	[679.00]
Total PAHs	(mg/kg)	500	[517.70]	254.56	0.064	[739.10]	[4956.00]

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-05 SHSB-05 (22-24) 03/13/2000 22.00	SHSB-05 SHSB-05(88-90)* 05/22/2000 88.00	SHSB-06 SHSB-06(.5-1.5) 03/13/2000 0.50	SHSB-06 SHSB-06 (6-8) 03/13/2000 6.00	SHSB-06 SHSB-06 (50-52) 03/13/2000 50.00
Naphthalene	(mg/kg)	13	0.38 U	0.38 U	1.9 J	[35]	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U	0.38 U	0.92 J	16	0.39 U
Acenaphthylene	(mg/kg)	41	0.38 U	0.081 J	25	1.8 J	0.39 U
Acenaphthene	(mg/kg)	50	0.38 U	0.38 U	3.9 U	16	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.38 U	0.38 U	3.9 U	0.51 J	0.39 U
Fluorene	(mg/kg)	50	0.38 U	0.084 J	3.9 U	7.4	0.39 U
Phenanthrene	(mg/kg)	50	0.072 J	0.51	8.4	28	0.39 U
Anthracene	(mg/kg)	50	0.38 U	0.12 J	15	7.9	0.39 U
Fluoranthene	(mg/kg)	50	0.38 U	0.2 J	[54]	10	0.39 U
Pyrene	(mg/kg)	50	0.38 U	0.29 J	[100] D	16	0.39 U
Benz(a)anthracene	(mg/kg)	0.224	0.38 U	0.1 J	[51]	[5.2]	0.39 U
Chrysene	(mg/kg)	0.4	0.38 U	0.11 J	[56]	[4.4]	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.38 U	0.06 J	[59]	[3.2] J	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38 U	0.38 U	[20]	[1.1] J	0.39 U
Benzo(a)pyrene	(mg/kg)	0.061	0.38 U	[0.076] J	[58]	[4.2]	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.38 U	0.38 U	[39]	1.5 J	0.39 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.38 U	0.38 U	[8.1]	[0.43] J	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.38 U	0.38 U	47	1.8 J	0.39 U
Total CAPAHs	(mg/kg)	10	0.00	0.346	[291.10]	[20.03]	0.00
Total PAHs	(mg/kg)	500	0.072	1.631	[543.32]	160.44	0.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-07 SHSB-07 (0.5-1) 03/17/2000 0.50	SHSB-07 SHSB-07 (26-28) 03/17/2000 26.00	SHSB-07 SHSB-07 (8-10) 03/17/2000 8.00	SHSB-08 SHSB-08 (2-4) 03/20/2000 2.00	SHSB-08 SHSB-08 (5-7) 03/20/2000 5.00
Naphthalene	(mg/kg)	13	0.05 J	0.4 U	4.8	[170] D	[480]
2-Methylnaphthalene	(mg/kg)	36.4	0.39 U	0.4 U	2.4 U	[56] D	[170]
Acenaphthylene	(mg/kg)	41	0.26 J	0.4 U	2.4 U	11	11 J
Acenaphthene	(mg/kg)	50	0.39 U	0.4 U	2.4 U	[66] D	[170]
Dibenzofuran	(mg/kg)	6.2	0.39 U	0.4 U	2.4 U	1.6	42 U
Fluorene	(mg/kg)	50	0.39 U	0.4 U	2.4 U	36 D	[65]
Phenanthrene	(mg/kg)	50	0.26 J	0.4 U	2.4 U	[120] D	[280]
Anthracene	(mg/kg)	50	0.097 J	0.4 U	2.4 U	44 D	[78]
Fluoranthene	(mg/kg)	50	0.63	0.4 U	2.4 U	[88] D	[98]
Pyrene	(mg/kg)	50	1.4	0.4 U	2.4 U	[190] D	[210]
Benz(a)anthracene	(mg/kg)	0.224	[0.62]	0.4 U	2.4 U	[49] D	[52]
Chrysene	(mg/kg)	0.4	[0.82]	0.4 U	2.4 U	[59] D	[47]
Benzo(b)fluoranthene	(mg/kg)	1.1	1	0.4 U	2.4 U	[37] D	[27] J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.3 J	0.4 U	2.4 U	[10]	[10] J
Benzo(a)pyrene	(mg/kg)	0.061	[0.72]	0.4 U	2.4 U	[36] D	[32] J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.72	0.4 U	2.4 U	[14] DJ	42 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.39 U	0.4 U	2.4 U	[4.1]	42 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.86	0.4 U	2.4 U	16 DJ	42 U
Total CAPAHs	(mg/kg)	10	4.18	0.00	0.00	[209.10]	[168.00]
Total PAHs	(mg/kg)	500	7.737	0.00	4.80	[1007.70]	[1730.00]

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-08 SHSB-08(50-52') 03/20/2000 50.00	SHSB-09 SHSB-09(1-3) 03/22/2000 1.00	SHSB-09 SHSB-09(6-8) 03/22/2000 8.00	SHSB-09 SHSB-09(26-28) 03/23/2000 26.00	SHSB-10 SHSB-10 (2-4) 03/16/2000 2.00
Naphthalene	(mg/kg)	13	0.38 U	[180]	9.1	0.4 U	[1300]
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U	[110]	4.9	0.4 U	[600]
Acenaphthylene	(mg/kg)	41	0.38 U	11 J	0.66 J	0.4 U	[71] J
Acenaphthene	(mg/kg)	50	0.38 U	[110]	6.2	0.4 U	[500]
Dibenzofuran	(mg/kg)	6.2	0.38 U	4 J	0.21 J	0.4 U	[24] J
Fluorene	(mg/kg)	50	0.38 U	49	2.8	0.4 U	[250]
Phenanthrene	(mg/kg)	50	0.38 U	[170]	11	0.4 U	[900]
Anthracene	(mg/kg)	50	0.38 U	[56]	3.4	0.4 U	[270]
Fluoranthene	(mg/kg)	50	0.38 U	[63]	4.2	0.4 U	[350]
Pyrene	(mg/kg)	50	0.38 U	[84]	5.9	0.4 U	[450]
Benz(a)anthracene	(mg/kg)	0.224	0.38 U	[31]	[1.9]	0.4 U	[160]
Chrysene	(mg/kg)	0.4	0.38 U	[27]	[1.7]	0.4 U	[140]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.38 U	[15] J	[1.1] J	0.4 U	[88] J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38 U	[5.2] J	0.44 J	0.4 U	[29] J
Benzo(a)pyrene	(mg/kg)	0.061	0.38 U	[19] J	[1.4] J	0.4 U	[110]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.38 U	[7.3] J	0.61 J	0.4 U	[47] J
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.38 U	22 U	1.7 U	0.4 U	94 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.38 U	8.3 J	0.7 J	0.4 U	[58] J
Total CAPAHs	(mg/kg)	10	0.00	[104.50]	7.15	0.00	[574.00]
Total PAHs	(mg/kg)	500	0.00	[949.80]	56.22	0.00	[5347.00]

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-10 SHSB-10 (24-26) 03/16/2000 24.00	SHSB-11 SHSB-11(1.8-3.5 03/23/2000 1.80	SHSB-11 SHSB-11(8-10) 03/23/2000 8.00	SHSB-11 SHSB-11(6-8) 03/23/2000 6.00	SHSB-11 SHSB-11(30-32) 03/23/2000 30.00
Naphthalene	(mg/kg)	13	0.41 U	0.38 U	[130] D	[170]	5.7
2-Methylnaphthalene	(mg/kg)	36.4	0.41 U	0.38 U	17	[48]	2.4
Acenaphthylene	(mg/kg)	41	0.41 U	0.38 U	2.1	4 J	0.41
Acenaphthene	(mg/kg)	50	0.41 U	0.38 U	16	39	2.6
Dibenzofuran	(mg/kg)	6.2	0.41 U	0.38 U	0.26 J	16 U	0.046 J
Fluorene	(mg/kg)	50	0.41 U	0.38 U	7.1	16 J	1.3
Phenanthrene	(mg/kg)	50	0.049 J	0.38 U	34 D	[61]	5.7
Anthracene	(mg/kg)	50	0.41 U	0.38 U	6.6	19	1.3
Fluoranthene	(mg/kg)	50	0.41 U	0.046 J	14	25	2.6
Pyrene	(mg/kg)	50	0.41 U	0.083 J	18	33	3.5
Benz(a)anthracene	(mg/kg)	0.224	0.41 U	0.042 J	[6.5]	[13] J	[1.2]
Chrysene	(mg/kg)	0.4	0.41 U	0.048 J	[4.7]	[11] J	[1]
Benzo(b)fluoranthene	(mg/kg)	1.1	0.41 U	0.085 J	[4.2]	[7] J	0.84
Benzo(k)fluoranthene	(mg/kg)	1.1	0.41 U	0.38 U	[1.3] J	[2.8] J	0.26 J
Benzo(a)pyrene	(mg/kg)	0.061	0.41 U	[0.071] J	[5.3]	[9.3] J	[1.1]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.41 U	0.069 J	2.4	[3.7] J	0.52
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.41 U	0.38 U	[0.53] J	16 U	[0.1] J
Benzo(g,h,i)perylene	(mg/kg)	50	0.41 U	0.1 J	2.8	2.4 J	0.66
Total CAPAHs	(mg/kg)	10	0.00	0.315	[24.93]	[46.80]	5.02
Total PAHs	(mg/kg)	500	0.049	0.544	272.79	464.20	31.236

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-12 SHSB-12 (1-3) 03/24/2000 1.00	SHSB-12 SHSB-12 (6-8) 03/24/2000 6.00	SHSB-12 SHSB-12 (34-36) 03/24/2000 34.00	SHSB-13 SHSB-13 (2-4) 03/27/2000 2.00	SHSB-13 SHSB-13 (10-12) 03/27/2000 10.00
Naphthalene	(mg/kg)	13	[32]	[13] J	0.4 U	0.21 J	[150]
2-Methylnaphthalene	(mg/kg)	36.4	11	10 J	0.4 U	0.5 J	4.9 J
Acenaphthylene	(mg/kg)	41	2.1 U	24 J	0.4 U	5.9	19 U
Acenaphthene	(mg/kg)	50	11	21 J	0.4 U	1 U	19 U
Dibenzofuran	(mg/kg)	6.2	0.27 J	34 U	0.4 U	1 U	19 U
Fluorene	(mg/kg)	50	2.8	20 J	0.4 U	1 U	19 U
Phenanthrene	(mg/kg)	50	5.9	[110]	0.4 U	0.38 J	2.1 J
Anthracene	(mg/kg)	50	1 J	[55]	0.4 U	2.7	19 U
Fluoranthene	(mg/kg)	50	0.63 J	[140]	0.4 U	1.8	19 U
Pyrene	(mg/kg)	50	1.3 J	[280]	0.4 U	3.2	19 U
Benz(a)anthracene	(mg/kg)	0.224	2.1 U	[96]	0.4 U	[2.8]	19 U
Chrysene	(mg/kg)	0.4	2.1 U	[98]	0.4 U	[3.3]	19 U
Benzo(b)fluoranthene	(mg/kg)	1.1	2.1 U	[84]	0.4 U	[4.8]	19 U
Benzo(k)fluoranthene	(mg/kg)	1.1	2.1 U	[31] J	0.4 U	[1.3]	19 U
Benzo(a)pyrene	(mg/kg)	0.061	2.1 U	[100]	0.4 U	[4.1]	19 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	2.1 U	[42]	0.4 U	[5.7]	19 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	2.1 U	34 U	0.4 U	[0.91] J	19 U
Benzo(g,h,i)perylene	(mg/kg)	50	2.1 U	48	0.4 U	11	19 U
Total CAPAHs	(mg/kg)	10	0.00	[451.00]	0.00	[22.91]	0.00
Total PAHs	(mg/kg)	500	65.90	[1172.00]	0.00	48.60	157.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-13 SHSB-13 (18-20) 03/27/2000 18.00	SHSB-13 SHSB-13 (34-36) 03/27/2000 34.00	SHSB-14 SHSB-14 (5-7) 03/06/2000 5.00	SHSB-14 SHSB-14 (48-52) 03/06/2000 48.00	SHSB-15 SHSB-15 (5-7) 03/06/2000 5.00
Naphthalene	(mg/kg)	13	5.9	0.4 U	[100] D	0.39 U	1.8
2-Methylnaphthalene	(mg/kg)	36.4	3.3	0.4 U	[77] D	0.39 U	3.9
Acenaphthylene	(mg/kg)	41	3.4	0.4 U	9.1	0.39 U	0.4 U
Acenaphthene	(mg/kg)	50	0.39 U	0.4 U	[89] D	0.39 U	3.2
Dibenzofuran	(mg/kg)	6.2	0.1 J	0.4 U	2.6	0.39 U	0.4 U
Fluorene	(mg/kg)	50	2.2	0.4 U	43 D	0.39 U	1.3
Phenanthrene	(mg/kg)	50	10 D	0.1 J	[130] D	0.39 U	5.6
Anthracene	(mg/kg)	50	2.6	0.4 U	44 D	0.39 U	1.6
Fluoranthene	(mg/kg)	50	4.2	0.058 J	[57] D	0.39 U	2
Pyrene	(mg/kg)	50	5.4	0.079 J	[75] D	0.39 U	3.5
Benz(a)anthracene	(mg/kg)	0.224	[2]	0.4 U	[29]	0.39 U	[1]
Chrysene	(mg/kg)	0.4	[1.6]	0.4 U	[26]	0.39 U	[0.98]
Benzo(b)fluoranthene	(mg/kg)	1.1	[1.2]	0.4 U	[15]	0.39 U	0.69
Benzo(k)fluoranthene	(mg/kg)	1.1	0.42	0.4 U	[5.3]	0.39 U	0.17 J
Benzo(a)pyrene	(mg/kg)	0.061	[1.6]	0.4 U	[19]	0.39 U	[0.87]
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.66	0.4 U	[7.3]	0.39 U	0.33 J
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.14] J	0.4 U	[2] J	0.39 U	[0.11] J
Benzo(g,h,i)perylene	(mg/kg)	50	0.79	0.4 U	8.4	0.39 U	0.45
Total CAPAHs	(mg/kg)	10	7.62	0.00	[103.60]	0.00	4.15
Total PAHs	(mg/kg)	500	45.51	0.237	[738.70]	0.00	27.50

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-15 SHSB-15 (16-18) 03/06/2000 16.00	SHSB-15 SHSB-15 (26-28) 03/06/2000 26.00	SHSB-15 SHSB-15 (48-50) 03/07/2000 48.00	SHSB-16 SHSB-16 (6-8) 03/07/2000 6.00	SHSB-16 SHSB-16 (50-52) 03/08/2000 50.00
Naphthalene	(mg/kg)	13	0.22 J	[22]	0.39 U	[83] D	0.41 U
2-Methylnaphthalene	(mg/kg)	36.4	0.38 U	14	0.39 U	17	0.41 U
Acenaphthylene	(mg/kg)	41	0.38 U	13	0.39 U	1.2 J	0.41 U
Acenaphthene	(mg/kg)	50	0.38 U	1.8	0.39 U	19	0.41 U
Dibenzofuran	(mg/kg)	6.2	0.38 U	0.71 J	0.39 U	0.53 J	0.41 U
Fluorene	(mg/kg)	50	0.38 U	7.2	0.39 U	5.7	0.41 U
Phenanthrene	(mg/kg)	50	0.38 U	23	0.08 J	23 D	0.41 U
Anthracene	(mg/kg)	50	0.38 U	7.5	0.39 U	5.9	0.41 U
Fluoranthene	(mg/kg)	50	0.38 U	10	0.39 U	10	0.41 U
Pyrene	(mg/kg)	50	0.38 U	14	0.052 J	14	0.41 U
Benz(a)anthracene	(mg/kg)	0.224	0.38 U	[5]	0.39 U	[5]	0.41 U
Chrysene	(mg/kg)	0.4	0.38 U	[4.5]	0.39 U	[4.6]	0.41 U
Benzo(b)fluoranthene	(mg/kg)	1.1	0.38 U	[3.1]	0.39 U	[3]	0.41 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.38 U	0.92 J	0.39 U	0.98 J	0.41 U
Benzo(a)pyrene	(mg/kg)	0.061	0.38 U	[3.8]	0.39 U	[3.8]	0.41 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.38 U	1.5 J	0.39 U	1.4	0.41 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.38 U	[0.36] J	0.39 U	[0.41] J	0.41 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.38 U	1.7	0.39 U	1.6	0.41 U
Total CAPAHs	(mg/kg)	10	0.00	[19.18]	0.00	[19.19]	0.00
Total PAHs	(mg/kg)	500	0.22	134.09	0.132	200.12	0.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-17 SHSB-17 (14-16) 03/08/2000 14.00	SHSB-18 SHSB-18 (1-3) 03/27/2000 1.00	SHSB-18 SHSB-18 (6-8) 03/27/2000 6.00	SHSB-18 SHSB-18 (30-32) 03/27/2000 30.00	SHSB-19 SHSB-19 (2-4) 03/20/2000 2.00
Naphthalene	(mg/kg)	13	0.37 U	1.8 U	[430]	0.39 U	0.092 J
2-Methylnaphthalene	(mg/kg)	36.4	0.37 U	1.8 U	[200]	0.39 U	0.051 J
Acenaphthylene	(mg/kg)	41	0.37 U	1.7 J	25 J	0.39 U	0.057 J
Acenaphthene	(mg/kg)	50	0.37 U	1.8 U	[220]	0.39 U	0.34 J
Dibenzofuran	(mg/kg)	6.2	0.37 U	1.8 U	5.8 J	0.39 U	0.4 U
Fluorene	(mg/kg)	50	0.37 U	0.2 J	[100]	0.39 U	0.2 J
Phenanthrene	(mg/kg)	50	0.37 U	1.7 J	[410]	0.39 U	0.89
Anthracene	(mg/kg)	50	0.37 U	0.85 J	[110]	0.39 U	0.21 J
Fluoranthene	(mg/kg)	50	0.37 U	5.7	[160]	0.39 U	0.39 J
Pyrene	(mg/kg)	50	0.37 U	9.1	[200]	0.39 U	0.48
Benz(a)anthracene	(mg/kg)	0.224	0.37 U	[3.3]	[78]	0.39 U	0.2 J
Chrysene	(mg/kg)	0.4	0.37 U	[4.2]	[67]	0.39 U	0.16 J
Benzo(b)fluoranthene	(mg/kg)	1.1	0.37 U	[4.3]	[42]	0.39 U	0.07 J
Benzo(k)fluoranthene	(mg/kg)	1.1	0.37 U	[1.5] J	[12] J	0.39 U	0.4 U
Benzo(a)pyrene	(mg/kg)	0.061	0.37 U	[3.1]	[50]	0.39 U	[0.13] J
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	0.37 U	2.7	[21] J	0.39 U	0.056 J
Dibenz(a,h)anthracene	(mg/kg)	0.014	0.37 U	[0.48] J	40 U	0.39 U	0.4 U
Benzo(g,h,i)perylene	(mg/kg)	50	0.37 U	3.3	25 J	0.39 U	0.073 J
Total CAPAHs	(mg/kg)	10	0.00	[19.58]	[270.00]	0.00	0.616
Total PAHs	(mg/kg)	500	0.00	42.13	[2155.80]	0.00	3.399

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-5
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-19 SHSB-19 (5-7) 03/20/2000 5.00	SHSB-19 SHSB-19 (50-52) 03/20/2000 50.00
Naphthalene	(mg/kg)	13	[24] D	0.39 U
2-Methylnaphthalene	(mg/kg)	36.4	11 D	0.39 U
Acenaphthylene	(mg/kg)	41	1.2	0.39 U
Acenaphthene	(mg/kg)	50	18 D	0.39 U
Dibenzofuran	(mg/kg)	6.2	0.43	0.39 U
Fluorene	(mg/kg)	50	8.8 D	0.39 U
Phenanthrene	(mg/kg)	50	32 D	0.39 U
Anthracene	(mg/kg)	50	6.5	0.39 U
Fluoranthene	(mg/kg)	50	12 D	0.39 U
Pyrene	(mg/kg)	50	14 D	0.39 U
Benz(a)anthracene	(mg/kg)	0.224	[4.6]	0.39 U
Chrysene	(mg/kg)	0.4	[3.9]	0.39 U
Benzo(b)fluoranthene	(mg/kg)	1.1	[2.4]	0.39 U
Benzo(k)fluoranthene	(mg/kg)	1.1	0.85	0.39 U
Benzo(a)pyrene	(mg/kg)	0.061	[3]	0.39 U
Indeno(1,2,3-cd)pyrene	(mg/kg)	3.2	1.2	0.39 U
Dibenz(a,h)anthracene	(mg/kg)	0.014	[0.31] J	0.39 U
Benzo(g,h,i)perylene	(mg/kg)	50	1.3	0.39 U
Total CAPAHs	(mg/kg)	10	[16.26]	0.00
Total PAHs	(mg/kg)	500	145.49	0.00

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-1(0.5-1.5) 03/20/2000 0.50	SHSB-01 SHSB-01(5-7) 03/20/2000 5.00	SHSB-01 SHSB-01(26-28) 03/20/2000 26.00	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(6-7) 03/20/2000 6.00
Arsenic	(mg/kg)	7.5	6.1	2.2	0.4 U	[7.7]	0.35 B
Barium	(mg/kg)	300	61.6	13.8 B	3.8 B	33.8	2.2 B
Cadmium	(mg/kg)	10	0.7	0.067 B	0.04 U	0.69	0.038 B
Chromium	(mg/kg)	50	7.1	2.9	2	5.5	1.3 B
Lead	(mg/kg)	500	292	76.1	0.62 B	227	1.5
Mercury	(mg/kg)	0.10	[0.18]	0.016 U	0.17 U	[1.4]	0.02 U
Selenium	(mg/kg)	2	1.3 B	0.85 B	0.4 U	[2.8]	0.4 B
Silver	(mg/kg)		0.23 U	0.16 U	0.2 U	1.4 B	0.17 U
Cyanide	(mg/kg)		0.21 U	0.25 U	0.15 U	0.25 B	0.12 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-02 SHSB-2(16-18) 03/20/2000 16.00	SHSB-02 SHSB-02 (52-54) 03/22/2000 52.00	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00	SHSB-03 SHSB-03 (10-12) 03/20/2000 10.00	SHSB-03 SHSB-03 (34-36) 03/20/2000 34.00
Arsenic	(mg/kg)	7.5	0.35 U	0.45 U	[13.6]	0.49 U	0.35 U
Barium	(mg/kg)	300	4 B	3.1 B	180	2.7 B	2 B
Cadmium	(mg/kg)	10	0.05 B	0.045 U	0.8	0.049 U	0.049 B
Chromium	(mg/kg)	50	3.2	1.8 B	9.1	1.7 B	1.5 B
Lead	(mg/kg)	500	1.6	0.67 B	331	1.8	0.2 U
Mercury	(mg/kg)	0.10	0.02 U	0.02 U	0.071	0.02 U	0.02 U
Selenium	(mg/kg)	2	0.35 U	0.45 U	[2.2]	0.49 U	0.58 B
Silver	(mg/kg)		0.17 U	0.22 U	0.87 B	0.25 U	0.21 B
Cyanide	(mg/kg)		0.2 U	0.16 U	1.4	0.2 U	0.14 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-04 SHSB-04 (.5-.7) 03/13/2000 0.50	SHSB-04 SHSB-04 (4-8) 03/13/2000 4.00	SHSB-04 SHSB-04 (24-26) 03/15/2000 24.00	SHSB-05 SHSB-05 (.5-.7) 03/13/2000 0.50	SHSB-05 SHSB-05 (4-8) 03/13/2000 4.00
Arsenic	(mg/kg)	7.5	[9.6]	0.29 U	0.35 B	5.7	0.75 B
Barium	(mg/kg)	300	104	1.7 B	2.2 B	43.3	8.8 B
Cadmium	(mg/kg)	10	1	0.029 U	(0.077) B	0.63	(0.043) B
Chromium	(mg/kg)	50	5.3	0.86 B	1.6 B	41.9	1.9 B
Lead	(mg/kg)	500	187	2.3	0.45 B	433	33.1
Mercury	(mg/kg)	0.10	[0.12]	0.019 U	0.018 U	[1.2]	0.017 U
Selenium	(mg/kg)	2	0.81 B	0.29 U	0.33 U	[2.4]	0.39 U
Silver	(mg/kg)		0.35 B	0.15 U	0.16 U	0.32 B	0.19 U
Cyanide	(mg/kg)		1.1 B	0.21 U	0.16 U	0.45 B	0.33 B

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-05 SHSB-05 (22-24) 03/13/2000 22.00	SHSB-05 SHSB-05(88-90)* 05/22/2000 88.00	SHSB-06 SHSB-06(.5-1.5) 03/13/2000 0.50	SHSB-06 SHSB-06 (6-8) 03/13/2000 6.00	SHSB-06 SHSB-06 (50-52) 03/13/2000 50.00
Arsenic	(mg/kg)	7.5	0.28 U	0.34 B	6.8	0.34 U	0.36 U
Barium	(mg/kg)	300	1.8 B	4.6 BE	88.9	4.5 B	1.9 B
Cadmium	(mg/kg)	10	0.028 U	0.099 B	0.92	0.034 U	0.036 U
Chromium	(mg/kg)	50	1.5	3.2	6	1.2 B	(1.2) B
Lead	(mg/kg)	500	0.78	0.67 B	485	1.6	(0.38) B
Mercury	(mg/kg)	0.10	0.017 U	0.018 U	[4.9]	0.018 U	0.019 U
Selenium	(mg/kg)	2	0.28 U	0.33 U	0.69 B	0.34 U	0.36 U
Silver	(mg/kg)		0.14 U	0.37 B	0.83 B	0.17 U	0.18 U
Cyanide	(mg/kg)		0.17 U	0.21 U	0.46 B	0.23 U	0.2 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-07 SHSB-07 (0.5-1) 03/17/2000 0.50	SHSB-07 SHSB-07 (26-28) 03/17/2000 26.00	SHSB-07 SHSB-07 (8-10) 03/17/2000 8.00	SHSB-08 SHSB-08 (2-4) 03/20/2000 2.00	SHSB-08 SHSB-08 (5-7) 03/20/2000 5.00
Arsenic	(mg/kg)	7.5	[10.4]	0.3 U	1.8 B	0.41 B	0.53 U
Barium	(mg/kg)	300	23.3	3.3 B	10.1 B	15.1 B	8.4 B
Cadmium	(mg/kg)	10	0.36 B	0.03 U	0.5 B	0.037 U	0.53 U
Chromium	(mg/kg)	50	4	0.98 B	10.7	3.2	4.5
Lead	(mg/kg)	500	68.2	0.2 B	5.5	21.7	1.8
Mercury	(mg/kg)	0.10	[0.34]	0.019 U	0.059 U	0.19 U	0.03 U
Selenium	(mg/kg)	2	0.64 B	0.3 U	1.1 U	0.52 B	0.53 U
Silver	(mg/kg)		0.2 U	0.15 U	0.53 U	0.19 U	0.26 U
Cyanide	(mg/kg)		0.18 U	0.17 U	0.73 U	0.13 B	0.29 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-08 SHSB-08(50-52') 03/20/2000 50.00	SHSB-09 SHSB-09(1-3) 03/22/2000 1.00	SHSB-09 SHSB-09(6-8) 03/22/2000 8.00	SHSB-09 SHSB-09(26-28) 03/23/2000 26.00	SHSB-10 SHSB-10 (2-4) 03/16/2000 2.00
Arsenic	(mg/kg)	7.5	0.37 U	0.43 U	0.45 U	0.41 U	0.88
Barium	(mg/kg)	300	4.2 B	11.5 B	3 B	8.7 B	5.7 B
Cadmium	(mg/kg)	10	0.037 U	(0.07) B	0.045 U	0.041 U	(0.056) B
Chromium	(mg/kg)	50	1.7 B	4	2 B	3.9	1.9
Lead	(mg/kg)	500	0.21 U	6.2	2.8	(1.6)	4.7
Mercury	(mg/kg)	0.10	0.017 U	0.017 U	0.02 U	0.02 U	0.018 U
Selenium	(mg/kg)	2	0.37 U	(0.53) B	0.45 U	0.41 U	(0.38) B
Silver	(mg/kg)		0.19 U	0.22 U	0.23 U	0.21 U	0.15 U
Cyanide	(mg/kg)		0.17 U	0.13 U	0.16 U	0.14 U	4.8

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-10 SHSB-10 (24-26) 03/16/2000 24.00	SHSB-11 SHSB-11(1.8-3.5 03/23/2000 1.80	SHSB-11 SHSB-11(8-10) 03/23/2000 8.00	SHSB-11 SHSB-11(6-8) 03/23/2000 6.00	SHSB-11 SHSB-11(30-32) 03/23/2000 30.00
Arsenic	(mg/kg)	7.5	0.34 U	0.48 U	1.8 U	4.4	0.39 U
Barium	(mg/kg)	300	7.6 B	9 B	4.3 B	18.5 B	2.9 B
Cadmium	(mg/kg)	10	0.27 B	0.048 U	0.18 U	(0.075) B	0.039 U
Chromium	(mg/kg)	50	3.5	(1.8) B	2.8 B	3.5	9.9
Lead	(mg/kg)	500	1.4	22.6	(1.4) B	52.5	2.4
Mercury	(mg/kg)	0.10	0.018 U	(0.027) B	0.086 U	(0.022) B	(0.021) B
Selenium	(mg/kg)	2	0.34 U	0.48 U	1.8 U	0.52 U	0.39 U
Silver	(mg/kg)		0.17 U	0.24 U	0.91 U	(0.48) B	0.2 U
Cyanide	(mg/kg)		0.16 U	0.16 U	0.71 U	0.17 U	0.16 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-12 SHSB-12 (1-3) 03/24/2000 1.00	SHSB-12 SHSB-12 (6-8) 03/24/2000 6.00	SHSB-12 SHSB-12 (34-36) 03/24/2000 34.00	SHSB-13 SHSB-13 (2-4) 03/27/2000 2.00	SHSB-13 SHSB-13 (10-12) 03/27/2000 10.00
Arsenic	(mg/kg)	7.5	5.2	1.3 B	0.73 B	3.9	0.55 U
Barium	(mg/kg)	300	55.6	7.5 B	16.1 B	75 E	2.7 BE
Cadmium	(mg/kg)	10	0.58 B	0.24 B	0.19 B	1.4	0.055 U
Chromium	(mg/kg)	50	7.4	2.9	5.5	9.1 E	1.3 BE
Lead	(mg/kg)	500	167	1.7	0.85 B	124	1.1 B
Mercury	(mg/kg)	0.10	[0.18]	0.02 U	0.02 U	[0.64]	0.025 U
Selenium	(mg/kg)	2	[2.6] B	1.6 B	0.91 B	[6.4]	0.67 B
Silver	(mg/kg)		0.94 B	0.58 B	0.33 B	0.18 U	0.27 U
Cyanide	(mg/kg)		0.27 U	0.2 U	0.23 U	(0.38) B	0.22 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-13 SHSB-13 (18-20) 03/27/2000 18.00	SHSB-13 SHSB-13 (34-36) 03/27/2000 34.00	SHSB-14 SHSB-14 (5-7) 03/06/2000 5.00	SHSB-14 SHSB-14 (48-52) 03/06/2000 48.00	SHSB-15 SHSB-15 (5-7) 03/06/2000 5.00
Arsenic	(mg/kg)	7.5	0.5 B	0.41 U	0.67 B	0.37 U	(0.38) B
Barium	(mg/kg)	300	4.3 BE	5.1 BE	4.4 B	3.8 B	3.1 B
Cadmium	(mg/kg)	10	0.16 B	0.12 B	0.29 B	0.088 B	0.069 B
Chromium	(mg/kg)	50	2.4 E	2.2 E	2.2 B	2.5	0.88 B
Lead	(mg/kg)	500	0.83 B	0.59 B	6.2	0.63 B	0.43 B
Mercury	(mg/kg)	0.10	0.018 U	0.018 U	[0.11]	0.018 U	0.018 U
Selenium	(mg/kg)	2	1.1 B	0.47 B	0.45 U	0.37 U	0.34 U
Silver	(mg/kg)		0.2 U	0.21 U	0.58 B	0.18 U	(0.18) B
Cyanide	(mg/kg)		0.15 U	0.15 U	0.17 U	0.15 U	0.13 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-15 SHSB-15 (16-18) 03/06/2000 16.00	SHSB-15 SHSB-15 (26-28) 03/06/2000 26.00	SHSB-15 SHSB-15 (48-50) 03/07/2000 48.00	SHSB-16 SHSB-16 (6-8) 03/07/2000 6.00	SHSB-16 SHSB-16 (50-52) 03/08/2000 50.00
Arsenic	(mg/kg)	7.5	0.38 U	(0.36) B	0.39 U	1 B	0.8 B
Barium	(mg/kg)	300	3.6 B	1.9 B	2.5 B	9.4 B	27.3
Cadmium	(mg/kg)	10	0.094 B	0.073 B	0.055 B	0.074 B	0.19 B
Chromium	(mg/kg)	50	2.4	1.4 B	1.2 B	4.7	8.1
Lead	(mg/kg)	500	1.5	0.56 B	0.64 B	14.9	3.5
Mercury	(mg/kg)	0.10	0.017 U	0.018 U	0.018 U	0.021 U	0.02 U
Selenium	(mg/kg)	2	0.38 U	0.34 U	0.39 U	0.48 U	0.7 B
Silver	(mg/kg)		0.19 U	0.17 U	0.19 U	0.24 U	0.24 U
Cyanide	(mg/kg)		0.14 U	0.13 U	0.13 U	0.18 U	0.14 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-17 SHSB-17 (14-16) 03/08/2000 14.00	SHSB-18 SHSB-18 (1-3) 03/27/2000 1.00	SHSB-18 SHSB-18 (6-8) 03/27/2000 6.00	SHSB-18 SHSB-18 (30-32) 03/27/2000 30.00	SHSB-19 SHSB-19 (2-4) 03/20/2000 2.00
Arsenic	(mg/kg)	7.5	0.37 U	4.3	0.69 B	(0.37) B	2
Barium	(mg/kg)	300	1.7 B	44.8 E	1.8 BE	3 BE	13.3 B
Cadmium	(mg/kg)	10	0.037 U	1.3	0.28 B	0.098 B	0.18 B
Chromium	(mg/kg)	50	3.2	5.8 E	0.92 BE	1.6 BE	2.6
Lead	(mg/kg)	500	2.1	333	0.22 U	0.42 B	65.8
Mercury	(mg/kg)	0.10	0.02 U	[0.2]	0.021 U	0.019 U	0.052 B
Selenium	(mg/kg)	2	0.37 U	[4.1]	1.6 B	0.87 B	1 B
Silver	(mg/kg)		0.18 U	0.21 U	0.19 U	0.18 U	0.37 B
Cyanide	(mg/kg)		0.15 U	(0.14) B	0.17 U	(0.16) B	0.18 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-6
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
RCRA METALS AND CYANIDE

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-19 SHSB-19 (5-7) 03/20/2000 5.00	SHSB-19 SHSB-19 (50-52) 03/20/2000 50.00
Arsenic	(mg/kg)	7.5	1.2 B	0.64 B
Barium	(mg/kg)	300	12.5 B	6.8 B
Cadmium	(mg/kg)	10	0.24 B	0.14 B
Chromium	(mg/kg)	50	8.6	2.8
Lead	(mg/kg)	500	2.5	0.21 U
Mercury	(mg/kg)	0.10	0.038 U	0.02 U
Selenium	(mg/kg)	2	0.95 B	0.54 B
Silver	(mg/kg)		0.36 U	0.27 B
Cyanide	(mg/kg)		0.56 B	0.13 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	SHSB-01	SHSB-01	SHSB-01	SHSB-02	SHSB-02	SHSB-02
	SAMPLE ID	SHSB-01(.5-1.5)	SHSB-01(5-7)	SHSB-01(26-28)	SHSB-2(0.5-1.5)	SHSB-2(6-7)	SHSB-2(16-18)
	DATE	03/20/2000	03/20/2000	03/20/2000	03/20/2000	03/20/2000	03/20/2000
	DEPTH (ft)	0.50	5.00	26.00	0.50	6.00	16.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSB-02 SHSB-02 (52-54) 03/22/2000 52.00	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00	SHSB-03 SHSB-03 (10-12) 03/20/2000 10.00	SHSB-03 SHSB-03 (34-36) 03/20/2000 34.00	SHSB-04 SHSB-04 (.5-.7) 03/13/2000 0.50	SHSB-04 SHSB-04 (4-8) 03/13/2000 4.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	13 U	13 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSB-04 SHSB-04 (24-26) 03/15/2000 24.00	SHSB-05 SHSB-05 (.5-.7) 03/13/2000 0.50	SHSB-05 SHSB-05 (4-8) 03/13/2000 4.00	SHSB-05 SHSB-05 (22-24) 03/13/2000 22.00	SHSB-05 SHSB-05(88-90)* 05/22/2000 88.00	SHSB-06 SHSB-06(.5-1.5) 03/13/2000 0.50
Total Phenol	(mg/kg)	12 U	13 U	13 U	13 U	12 U	13 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSB-06 SHSB-06 (6-8) 03/13/2000 6.00	SHSB-06 SHSB-06 (50-52) 03/13/2000 50.00	SHSB-07 SHSB-07 (0.5-1) 03/17/2000 0.50	SHSB-07 SHSB-07 (26-28) 03/17/2000 26.00	SHSB-07 SHSB-07 (8-10) 03/17/2000 8.00	SHSB-08 SHSB-08 (2-4) 03/20/2000 2.00
Total Phenol	(mg/kg)	13 U	13 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	SHSB-08	SHSB-08	SHSB-09	SHSB-09	SHSB-09	SHSB-10
	SAMPLE ID	SHSB-08 (5-7)	SHSB-08(50-52')	SHSB-09(1-3)	SHSB-09(6-8)	SHSB-09(26-28)	SHSB-10 (2-4)
	DATE	03/20/2000	03/20/2000	03/22/2000	03/22/2000	03/23/2000	03/16/2000
	DEPTH (ft)	5.00	50.00	1.00	8.00	26.00	2.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

Date: 02/07/2001

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	SHSB-10	SHSB-11	SHSB-11	SHSB-11	SHSB-11	SHSB-12
	SAMPLE ID	SHSB-10 (24-26)	SHSB-11(1.8-3.5	SHSB-11(8-10)	SHSB-11(6-8)	SHSB-11(30-32)	SHSB-12 (1-3)
	DATE	03/16/2000	03/23/2000	03/23/2000	03/23/2000	03/23/2000	03/24/2000
	DEPTH (ft)	24.00	1.80	8.00	6.00	30.00	1.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	12 U	15 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSB-12 SHSB-12 (6-8) 03/24/2000 6.00	SHSB-12 SHSB-12 (34-36) 03/24/2000 34.00	SHSB-13 SHSB-13 (2-4) 03/27/2000 2.00	SHSB-13 SHSB-13 (10-12) 03/27/2000 10.00	SHSB-13 SHSB-13 (18-20) 03/27/2000 18.00	SHSB-13 SHSB-13 (34-36) 03/27/2000 34.00
Total Phenol	(mg/kg)	15 U	15 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	SHSB-14	SHSB-14	SHSB-15	SHSB-15	SHSB-15	SHSB-15
	SAMPLE ID	SHSB-14 (5-7)	SHSB-14 (48-52)	SHSB-15 (5-7)	SHSB-15 (16-18)	SHSB-15 (26-28)	SHSB-15 (48-50)
	DATE	03/06/2000	03/06/2000	03/06/2000	03/06/2000	03/06/2000	03/07/2000
	DEPTH (ft)	5.00	48.00	5.00	16.00	26.00	48.00
Total Phenol	(mg/kg)	12 U	12 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT							
	SITE	SHSB-16	SHSB-16	SHSB-17	SHSB-18	SHSB-18	SHSB-18
	SAMPLE ID	SHSB-16 (6-8)	SHSB-16 (50-52)	SHSB-17(14-16)D	SHSB-18 (1-3)	SHSB-18 (6-8)	SHSB-18 (30-32)
	DATE	03/07/2000	03/08/2000	03/08/2000	03/27/2000	03/27/2000	03/27/2000
	DEPTH (ft)	6.00	50.00	14.00	1.00	6.00	30.00
Total Phenol	(mg/kg)	14 U	14 U	12 U	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-7
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TOTAL PHENOLS

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSB-19 SHSB-19 (2-4) 03/20/2000 2.00	SHSB-19 SHSB-19 (5-7) 03/20/2000 5.00	SHSB-19 SHSB-19 (50-52) 03/20/2000 50.00
Total Phenol	(mg/kg)	12 U	12 U	12 U

mg/kg- milligram/kilogram

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-8
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
Chloromethane	(mg/kg)		0.006 U	0.006 U	0.006 U
Bromomethane	(mg/kg)		0.006 U	0.006 U	0.006 U
Vinyl chloride	(mg/kg)	0.2	0.006 U	0.006 U	0.006 U
Chloroethane	(mg/kg)	1.9	0.006 U	0.006 U	0.006 U
Methylene chloride	(mg/kg)	0.1	0.006 U	0.006 U	[0.13]
Acetone	(mg/kg)	0.2	0.008 B	0.006 U	0.07 B
Carbon disulfide	(mg/kg)	2.7	0.006 U	0.006 U	0.006 U
1,1-Dichloroethene	(mg/kg)	0.4	0.006 U	0.006 U	0.006 U
1,1-Dichloroethane	(mg/kg)	0.2	0.006 U	0.006 U	0.006 U
Chloroform	(mg/kg)	0.3	0.006 U	0.006 U	0.006 U
1,2-Dichloroethane	(mg/kg)	0.1	0.006 U	0.006 U	0.006 U
2-Butanone	(mg/kg)	0.3	0.006 U	0.006 U	0.006 U
1,1,1-Trichloroethane	(mg/kg)	0.8	0.006 U	0.006 U	0.006 U
Carbon tetrachloride	(mg/kg)	0.6	0.006 U	0.006 U	0.006 U
Vinyl Acetate	(mg/kg)		0.006 U	0.006 U	0.006 U
Bromodichloromethane	(mg/kg)		0.006 U	0.006 U	0.006 U
1,2-Dichloropropane	(mg/kg)		0.006 U	0.006 U	0.006 U
cis-1,3-Dichloropropene	(mg/kg)		0.006 U	0.006 U	0.006 U
Trichloroethene	(mg/kg)	0.7	0.006 U	0.006 U	0.006 U
Dibromochloromethane	(mg/kg)		0.006 U	0.006 U	0.006 U
1,1,2-Trichloroethane	(mg/kg)		0.006 U	0.006 U	0.006 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

* BTEX are excluded (see BTEX data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-8
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
trans-1,3-Dichloropropene	(mg/kg)		0.006 U	0.006 U	0.006 U
Bromoform	(mg/kg)		0.006 U	0.006 U	0.006 U
2-Hexanone	(mg/kg)		0.006 U	0.006 U	0.006 U
4-Methyl-2-pentanone	(mg/kg)	1	0.006 U	0.006 U	0.006 U
Tetrachloroethene	(mg/kg)	1.4	0.006 U	0.006 U	0.006 U
1,1,2,2-Tetrachloroethane	(mg/kg)	0.6	0.006 U	0.006 U	0.006 U
Chlorobenzene	(mg/kg)	1.7	0.006 U	0.006 U	0.006 U
Styrene	(mg/kg)		0.006 U	0.006 U	0.006 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

* BTEX are excluded (see BTEX data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-9
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
Bis(2-chloroethyl)ether	(mg/kg)		19 U	1.9 U	1.8 U
2-Chlorophenol	(mg/kg)	0.8	19 U	1.9 U	1.8 U
1,3-Dichlorobenzene	(mg/kg)	1.6	19 U	1.9 U	1.8 U
1,4-Dichlorobenzene	(mg/kg)	8.5	19 U	1.9 U	1.8 U
1,2-Dichlorobenzene	(mg/kg)	7.9	19 U	1.9 U	1.8 U
2-Methylphenol	(mg/kg)	0.1	19 U	1.9 U	1.8 U
4-Methylphenol	(mg/kg)	0.9	19 U	1.9 U	1.8 U
N-Nitroso-di-n-propylamine	(mg/kg)		19 U	1.9 U	1.8 U
Hexachloroethane	(mg/kg)		19 U	1.9 U	1.8 U
Nitrobenzene	(mg/kg)	0.2	19 U	1.9 U	1.8 U
Isophorone	(mg/kg)	4.4	19 U	1.9 U	1.8 U
2-Nitrophenol	(mg/kg)	0.33	19 U	1.9 U	1.8 U
2,4-Dimethylphenol	(mg/kg)		19 U	1.9 U	1.8 U
Bis(2-chloroethoxy)methane	(mg/kg)		19 U	1.9 U	1.8 U
2,4-Dichlorophenol	(mg/kg)	0.4	19 U	1.9 U	1.8 U
1,2,4-Trichlorobenzene	(mg/kg)	3.4	19 U	1.9 U	1.8 U
4-Chloroaniline	(mg/kg)	0.22	19 U	1.9 U	1.8 U
Hexachlorobutadiene	(mg/kg)		19 U	1.9 U	1.8 U
4-Chloro-3-methylphenol	(mg/kg)	0.24	19 U	1.9 U	1.8 U
Hexachlorocyclopentadiene	(mg/kg)		19 U	1.9 U	1.8 U
2,4,6-Trichlorophenol	(mg/kg)		19 U	1.9 U	1.8 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

* PAHs are excluded (see PAH data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-9
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
2,4,5-Trichlorophenol	(mg/kg)	0.1	39 U	3.9 U	3.6 U
2-Chloronaphthalene	(mg/kg)		19 U	1.9 U	1.8 U
2-Nitroaniline	(mg/kg)	0.43	39 U	3.9 U	3.6 U
Dimethyl phthalate	(mg/kg)	2	19 U	1.9 U	1.8 U
2,6-Dinitrotoluene	(mg/kg)	1	19 U	1.9 U	1.8 U
3-Nitroaniline	(mg/kg)	0.5	39 U	3.9 U	3.6 U
2,4-Dinitrophenol	(mg/kg)	0.2	39 U	3.9 U	3.6 U
4-Nitrophenol	(mg/kg)	0.1	39 U	3.9 U	3.6 U
2,4-Dinitrotoluene	(mg/kg)		19 U	1.9 U	1.8 U
Diethylphthalate	(mg/kg)	7.1	19 U	1.9 U	1.8 U
4-Chlorophenyl phenylether	(mg/kg)		19 U	1.9 U	1.8 U
4-Nitroaniline	(mg/kg)		39 U	3.9 U	3.6 U
4,6-Dinitro,2-methylphenol	(mg/kg)		39 U	3.9 U	3.6 U
N-Nitrosodiphenylamine (1)	(mg/kg)		19 U	1.9 U	1.8 U
Hexachlorobenzene	(mg/kg)	0.41	19 U	1.9 U	1.8 U
Pentachlorophenol	(mg/kg)	1	39 U	3.9 U	3.6 U
Di-n-butylphthalate	(mg/kg)	8.1	19 U	1.9 U	1.8 U
Butylbenzylphthalate	(mg/kg)	50	19 U	1.9 U	1.8 U
3,3'-Dichlorobenzidine	(mg/kg)		19 U	1.9 U	1.8 U
Bis(2-ethylhexyl)phthalate	(mg/kg)	50	19 U	1.9 U	1.8 U
Di-n-octyl phthalate	(mg/kg)	50	19 U	1.9 U	1.8 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

* PAHs are excluded (see PAH data table)

TABLE E-9
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
Carbazole	(mg/kg)		19 U	1.9 U	1.8 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

* PAHs are excluded (see PAH data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-10
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
TARGET ANALYTE LIST (TAL) METALS*

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-1(0.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
Aluminum	(mg/kg)		2330	2420	2700
Antimony	(mg/kg)		0.72 B	0.39 B	0.32 U
Beryllium	(mg/kg)	0.16	[0.23] B	[0.22] B	[0.31] B
Calcium	(mg/kg)		1760	8680	18700
Cobalt	(mg/kg)	30	2 B	2.2 B	2.7 B
Copper	(mg/kg)	25	[40.7]	[29.1]	[62.1]
Iron	(mg/kg)	2000	[12600]	[6410]	[12400]
Magnesium	(mg/kg)		1070	2320	2290
Manganese	(mg/kg)		46.4	97.3	87.8
Nickel	(mg/kg)	13	10.8	5.8	8.8
Potassium	(mg/kg)		317	208 B	363
Sodium	(mg/kg)		434	175	456
Thallium	(mg/kg)		0.34 U	0.32 U	0.32 U
Vanadium	(mg/kg)	150	9.9	11.4	14.3
Zinc	(mg/kg)	20	[182]	[142]	[352]

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

* RCRA Metals and Cyanide excluded (see RCRA Metals table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-11
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDE/PCBs

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
alpha-BHC	(mg/kg)	0.11	0.041 U	0.002 U	0.0019 U
beta-BHC	(mg/kg)	0.2	0.041 U	0.002 U	0.0019 U
delta-BHC	(mg/kg)	0.3	0.041 U	0.002 U	0.0019 U
gamma-BHC (Lindane)	(mg/kg)	0.06	0.041 U	0.002 U	0.0019 U
Heptachlor	(mg/kg)	0.1	0.041 U	0.002 U	0.0019 U
Aldrin	(mg/kg)	0.041	0.041 U	0.002 U	0.0019 U
Heptachlor epoxide	(mg/kg)	0.02	0.041 U	0.002 U	0.0019 U
Endosulfan I	(mg/kg)	0.9	0.041 U	0.002 U	0.0019 U
Dieldrin	(mg/kg)	0.044	[0.83] P	0.02 P	0.028 P
4,4-DDE	(mg/kg)	2.1	0.08 U	0.0038 U	0.0037 U
Endrin	(mg/kg)	0.1	0.08 U	0.0038 U	0.0037 U
Endosulfan II	(mg/kg)	0.9	0.72	0.0038 U	0.024 P
4,4-DDD	(mg/kg)	2.9	0.33	0.0041 P	0.0061 P
Endosulfan sulfate	(mg/kg)	1	0.08 U	0.01	0.0037 U
4,4-DDT	(mg/kg)	2.1	0.35	0.0038 U	0.0037 U
Methoxychlor	(mg/kg)		0.41 U	0.02 U	0.029 P
Endrin ketone	(mg/kg)		0.52 P	0.0082 P	0.05
alpha-Chlordane	(mg/kg)	0.54	0.041 U	0.002 U	0.0019 U
gamma-Chlordane	(mg/kg)	0.54	0.041 U	0.002 U	0.0019 U
Toxaphene	(mg/kg)		4.1 U	0.2 U	0.19 U
Aroclor-1016	(mg/kg)	10	0.08 U	0.038 U	0.037 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-11
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SUBSURFACE SOIL SAMPLE RESULTS
PESTICIDE/PCBs

PERIOD: From 03/06/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	NYSDEC SCG	SHSB-01 SHSB-01(.5-1.5) 03/20/2000 0.50	SHSB-02 SHSB-2(0.5-1.5) 03/20/2000 0.50	SHSB-03 SHSB-03 (1-3) 03/20/2000 1.00
Aroclor-1221	(mg/kg)	10	0.08 U	0.038 U	0.037 U
Aroclor-1232	(mg/kg)	10	0.08 U	0.038 U	0.037 U
Aroclor-1242	(mg/kg)	10	0.08 U	0.038 U	0.037 U
Aroclor-1248	(mg/kg)	10	0.08 U	0.038 U	0.037 U
Aroclor-1254	(mg/kg)	10	0.08 U	0.038 U	0.037 U
Aroclor-1260	(mg/kg)	10	0.08 U	0.15	0.97
Endrin aldehyde	(mg/kg)		0.13	0.0038 U	0.0037 U

mg/kg= milligram/kilogram
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/17/2000	MW-01 MW-01 04/19/2000	MW-02 MW-02 03/17/2000	MW-02 MW-02 04/19/2000	MW-03 MW-03 03/17/2000
Benzene	(ug/l)	1.0	1 U	[20]	[920]	[1400]	[68]
Ethylbenzene	(ug/l)	5	[5]	[16]	[4700]	[3000]	[290]
Toluene	(ug/l)	5	1 U	4 J	[120]	[140]	[10]
Xylene (total)	(ug/l)	5	[5]	[28]	[3100]	[3400]	[300]
Total BTEX	(ug/l)		10.00	68.00	8840.00	7940.00	668.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-03 MW-03 04/20/2000	MW-04 MW-04 03/17/2000	MW-05 MW-05 03/17/2000	MW-05 MW-05 04/20/2000	MW-06 MW-6 03/17/2000
Benzene	(ug/l)	1.0	[660]	[8]	[36]	1 U	[3]
Ethylbenzene	(ug/l)	5	[300]	[16]	[43]	1	[19]
Toluene	(ug/l)	5	[43]	1	[17]	1 U	1
Xylene (total)	(ug/l)	5	[550]	[10]	[74]	4	[24]
Total BTEX	(ug/l)		1553.00	35.00	170.00	5.00	47.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 04/20/2000	SHMW-01I SHMW-01I 04/26/2000	SHMW-01S SHMW-01S 04/26/2000	SHMW-02D SHMW-02D 04/24/2000	SHMW-02I SHMW-02I 04/24/2000
Benzene	(ug/l)	1.0	[2]	[1]	[510]	[1]	[8]
Ethylbenzene	(ug/l)	5	[8]	2	[360]	1 U	1 U
Toluene	(ug/l)	5	1	1 U	[63]	1 U	1 U
Xylene (total)	(ug/l)	5	[19]	2	[480]	4	[18]
Total BTEX	(ug/l)		30.00	5.00	1413.00	5.00	26.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 04/20/2000	SHMW-03S SHMW-03S 04/20/2000	SHMW-04I SHMW-04I 04/20/2000	SHMW-04S SHMW-04S 04/20/2000	SHMW-05I SHMW-05I 04/20/2000
Benzene	(ug/l)	1.0	1 U	[5]	[2]	[5300]	1 U
Ethylbenzene	(ug/l)	5	1 U	[25]	1	[890]	1 U
Toluene	(ug/l)	5	1 U	1 U	1 U	10 U	1 U
Xylene (total)	(ug/l)	5	1 U	[33]	2	[1300]	1 U
Total BTEX	(ug/l)		0.00	63.00	5.00	7490.00	0.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 04/20/2000	SHMW-06I SHMW-06I 04/19/2000	SHMW-06S SHMW-06S 04/19/2000	SHMW-07I SHMW-07I 04/19/2000	SHMW-07S SHMW-07S 04/19/2000
Benzene	(ug/l)	1.0	[28]	1 U	[1100]	1 U	[740]
Ethylbenzene	(ug/l)	5	1 U	1 U	[450]	1 U	[480]
Toluene	(ug/l)	5	2	1 U	[92]	1 U	[31]
Xylene (total)	(ug/l)	5	[7]	1 U	[750]	1 U	[760]
Total BTEX	(ug/l)		37.00	0.00	2392.00	0.00	2011.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-12
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 04/19/2000	SHMW-08S SHMW-08S 04/19/2000	SHMW-09I SHMW-09I 04/18/2000	SHMW-09S SHMW-09S 04/18/2000
Benzene	(ug/l)	1.0	1 U	[5]	1 U	[390]
Ethylbenzene	(ug/l)	5	1 U	1 U	1 U	[420]
Toluene	(ug/l)	5	1 U	1 U	1 U	[14]
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	[200]
Total BTEX	(ug/l)		0.00	5.00	0.00	1024.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/17/2000	MW-01 MW-01 04/19/2000	MW-02 MW-02 03/17/2000	MW-02 MW-02 04/19/2000	MW-03 MW-03 03/17/2000
Naphthalene	(ug/l)	10	2 J	[160]	[3700]	[4800] D	[1100]
2-Methylnaphthalene	(ug/l)		4 J	44	530	220 DJ	350
Acenaphthylene	(ug/l)		36	20	250 U	10 U	34 J
Acenaphthene	(ug/l)	20	[190] D	[24]	[300]	[84]	[320]
Dibenzofuran	(ug/l)		7 J	10 U	250 U	10 U	12 J
Fluorene	(ug/l)	50	[90]	6 J	[100] J	9 J	[120]
Phenanthrene	(ug/l)	50	[310] D	2 J	[310]	1 J	[360]
Anthracene	(ug/l)	50	[100]	10 U	[90] J	10 U	[93] J
Fluoranthene	(ug/l)	50	[150]	10 U	[120] J	10 U	[160]
Pyrene	(ug/l)	50	[260] D	1 J	[160] J	10 U	[210]
Benz(a)anthracene	(ug/l)	0.002	[83]	10 U	[65] J	10 U	[65] J
Chrysene	(ug/l)	0.002	[76]	10 U	[52] J	10 U	[60] J
Benzo(b)fluoranthene	(ug/l)	0.002	[60]	10 U	[37] J	10 U	[49] J
Benzo(k)fluoranthene	(ug/l)	0.002	[18]	10 U	250 U	10 U	[16] J
Benzo(a)pyrene	(ug/l)	0	[74]	[10] U	[47] J	[10] U	[56] J
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	[35]	10 U	250 U	10 U	[27] J
Dibenz(a,h)anthracene	(ug/l)		8 J	10 U	250 U	10 U	100 U
Benzo(g,h,i)perylene	(ug/l)		45	10 U	250 U	10 U	33 J
Total CAPAHs	(ug/l)		354.00	0.00	201.00	0.00	273.00
Total PAHs	(ug/l)		1548.00	257.00	5511.00	5114.00	3065.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-03 MW-03 04/20/2000	MW-04 MW-04 03/17/2000	MW-05 MW-05 03/17/2000	MW-05 MW-05 04/20/2000	MW-06 MW-6 03/17/2000
Naphthalene	(ug/l)	10	[2900] D	[16]	[140]	[56]	[150]
2-Methylnaphthalene	(ug/l)		300 DJ	2 J	26	10	62
Acenaphthylene	(ug/l)		4 J	2 J	36	2 J	19
Acenaphthene	(ug/l)	20	[170] DJ	10	[46]	12	[140]
Dibenzofuran	(ug/l)		5 J	10 U	10 U	10 U	6 J
Fluorene	(ug/l)	50	36	4 J	16	4 J	[61]
Phenanthrene	(ug/l)	50	15	9 J	15	4 J	[120]
Anthracene	(ug/l)	50	2 J	4 J	30	2 J	43
Fluoranthene	(ug/l)	50	10 U	6 J	[89]	3 J	[50]
Pyrene	(ug/l)	50	1 J	7 J	[130]	6 J	[68]
Benz(a)anthracene	(ug/l)	0.002	10 U	[3] J	[47]	[1] J	[26]
Chrysene	(ug/l)	0.002	10 U	[2] J	[45]	[1] J	[26]
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	[3] J	[39]	10 U	[28]
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	[1] J	[10]	10 U	[8] J
Benzo(a)pyrene	(ug/l)	0	[10] U	[4] J	[51]	[10] U	[36]
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[23]	10 U	[20]
Dibenz(a,h)anthracene	(ug/l)		10 U	10 U	7 J	10 U	4 J
Benzo(g,h,i)perylene	(ug/l)		10 U	2 J	29	10 U	27
Total CAPAHs	(ug/l)		0.00	13.00	222.00	2.00	148.00
Total PAHs	(ug/l)		3433.00	75.00	779.00	101.00	894.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 04/20/2000	SHMW-01I SHMW-01I 04/26/2000	SHMW-01S SHMW-01S 04/26/2000	SHMW-02D SHMW-02D 04/24/2000	SHMW-02I SHMW-02I 04/24/2000
Naphthalene	(ug/l)	10	[490] D	[15]	[2900] D	10 U	9 J
2-Methylnaphthalene	(ug/l)		54	4 J	380 D	10 U	33
Acenaphthylene	(ug/l)		2 J	10 U	15	8 J	52
Acenaphthene	(ug/l)	20	[82]	4 J	[260] DJ	[80]	[33]
Dibenzofuran	(ug/l)		2 J	10 U	6 J	3 J	3 J
Fluorene	(ug/l)	50	18	2 J	[83]	42	36
Phenanthrene	(ug/l)	50	5 J	5 J	[220] DJ	[75]	[70]
Anthracene	(ug/l)	50	10 U	10 U	48	18	13
Fluoranthene	(ug/l)	50	10 U	1 J	[55]	19	8 J
Pyrene	(ug/l)	50	10 U	1 J	[74]	26	9 J
Benz(a)anthracene	(ug/l)	0.002	10 U	10 U	[25]	[7] J	10 U
Chrysene	(ug/l)	0.002	10 U	10 U	[27]	[7] J	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	[15]	[7] J	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	[6] J	[2] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[10] U	[17]	[5] J	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	[7] J	[4] J	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	9 J	5 J	10 U
Total CAPAHs	(ug/l)		0.00	0.00	97.00	32.00	0.00
Total PAHs	(ug/l)		653.00	32.00	4147.00	308.00	266.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 04/20/2000	SHMW-03S SHMW-03S 04/20/2000	SHMW-04I SHMW-04I 04/20/2000	SHMW-04S SHMW-04S 04/20/2000	SHMW-05I SHMW-05I 04/20/2000
Naphthalene	(ug/l)	10	10 U	[230] D	10 U	[2700] D	10 U
2-Methylnaphthalene	(ug/l)		10 U	61	10 U	460 D	10 U
Acenaphthylene	(ug/l)		10 U	2 J	10 U	16	10 U
Acenaphthene	(ug/l)	20	2 J	[46]	6 J	[330] D	10 U
Dibenzofuran	(ug/l)		10 U	1 J	10 U	7 J	10 U
Fluorene	(ug/l)	50	10 U	16	10 U	[100]	10 U
Phenanthrene	(ug/l)	50	10 U	34	10 U	[300] D	10 U
Anthracene	(ug/l)	50	10 U	8 J	10 U	[61]	10 U
Fluoranthene	(ug/l)	50	10 U	7 J	2 J	[65]	10 U
Pyrene	(ug/l)	50	10 U	9 J	8 J	[100]	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	[3] J	[1] J	[35]	10 U
Chrysene	(ug/l)	0.002	10 U	[3] J	[1] J	[38]	10 U
Benzo(b)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	[21]	10 U
Benzo(k)fluoranthene	(ug/l)	0.002	10 U	10 U	10 U	[7] J	10 U
Benzo(a)pyrene	(ug/l)	0	[10] U	[2] J	[10] U	[25]	[10] U
Indeno(1,2,3-cd)pyrene	(ug/l)	0.002	10 U	10 U	10 U	[10]	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	8.00	2.00	136.00	0.00
Total PAHs	(ug/l)		2.00	422.00	18.00	4275.00	0.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 04/20/2000	SHMW-06I SHMW-06I 04/20/2000	SHMW-06S SHMW-06S 04/19/2000	SHMW-07I SHMW-07I 04/19/2000	SHMW-07S SHMW-07S 04/19/2000
Naphthalene	(ug/l)	10	10 U	10 U	[3700] D	10 U	[5700] D
2-Methylnaphthalene	(ug/l)		10 U	10 U	260 DJ	10 U	660 DJ
Acenaphthylene	(ug/l)		10 U	10 U	79	10 U	11
Acenaphthene	(ug/l)	20	13	1 J	[63]	10 U	[300] DJ
Dibenzofuran	(ug/l)		10 U	10 U	2 J	10 U	12
Fluorene	(ug/l)	50	10 U	10 U	18	10 U	[98]
Phenanthrene	(ug/l)	50	10 U	10 U	5 J	10 U	[180] DJ
Anthracene	(ug/l)	50	10 U	10 U	1 J	10 U	[53]
Fluoranthene	(ug/l)	50	10 U	10 U	1 J	10 U	44
Pyrene	(ug/l)	50	10 U	1 J	1 J	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)		13.00	2.00	4130.00	0.00	7211.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-13
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 04/19/2000	SHMW-08S SHMW-08S 04/20/2000	SHMW-09I SHMW-09I 04/18/2000	SHMW-09S SHMW-09S 04/18/2000
Naphthalene	(ug/l)	10	10 U	10 U	10 U	[1600] D
2-Methylnaphthalene	(ug/l)		10 U	10 U	10 U	79
Acenaphthylene	(ug/l)		1 J	13	10 U	10 U
Acenaphthene	(ug/l)	20	2 J	[40]	10 U	[79]
Dibenzofuran	(ug/l)		10 U	10 U	10 U	2 J
Fluorene	(ug/l)	50	2 J	15	10 U	15
Phenanthrene	(ug/l)	50	4 J	5 J	10 U	10
Anthracene	(ug/l)	50	10 U	5 J	10 U	2 J
Fluoranthene	(ug/l)	50	2 J	12	1 J	10 U
Pyrene	(ug/l)	50	2 J	14	2 J	10 U
Benz(a)anthracene	(ug/l)	0.002	10 U	[2] J	10 U	10 U
Chrysene	(ug/l)	0.002	10 U	[2] J	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	[2] J	[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	6.00	0.00	0.00
Total PAHs	(ug/l)		13.00	110.00	3.00	1787.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/17/2000	MW-01 MW-01 04/19/2000	MW-02 MW-02 03/17/2000	MW-02 MW-02 04/19/2000	MW-03 MW-03 03/17/2000
Arsenic	(ug/l)	25	---	4 U	---	4 U	---
Barium	(ug/l)	1000	---	37.6 B	---	483	---
Cadmium	(ug/l)	5	---	0.42 B	---	0.41 B	---
Chromium	(ug/l)	50	---	4.7 B	---	2 U	---
Iron	(ug/l)	300	---	---	---	---	---
Lead	(ug/l)	25	---	19.6	---	6.1 B	---
Manganese	(ug/l)	300	---	---	---	---	---
Mercury	(ug/l)	0.7	---	0.14 U	---	0.14 U	---
Selenium	(ug/l)	10	---	4 U	---	4 U	---
Silver	(ug/l)	50	---	2 U	---	2 U	---
Cyanide	(ug/l)	200	4 U	14.6 B	92.2	13.5 B	4 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-03 MW-03 04/20/2000	MW-04 MW-04 03/17/2000	MW-05 MW-05 03/17/2000	MW-05 MW-05 04/20/2000	MW-06 MW-6 03/17/2000
Arsenic	(ug/l)	25	4 U	---	---	4 U	---
Barium	(ug/l)	1000	115 B	---	---	123 B	---
Cadmium	(ug/l)	5	2.2 B	---	---	0.51 B	---
Chromium	(ug/l)	50	2 U	---	---	2 U	---
Iron	(ug/l)	300	---	---	---	---	---
Lead	(ug/l)	25	2.3 U	---	---	7.8 B	---
Manganese	(ug/l)	300	---	---	---	---	---
Mercury	(ug/l)	0.7	0.15 U	---	---	0.15 U	---
Selenium	(ug/l)	10	4 U	---	---	4 U	---
Silver	(ug/l)	50	2 U	---	---	2 U	---
Cyanide	(ug/l)	200	19.9 B	28.1	72	4 U	34.4

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 04/20/2000	SHMW-01I SHMW-01I 04/26/2000	SHMW-01S SHMW-01S 04/26/2000	SHMW-02D SHMW-02D 04/24/2000	SHMW-02I SHMW-02I 04/24/2000
Arsenic	(ug/l)	25	4 U	4 U	4 U	4 U	4 U
Barium	(ug/l)	1000	18.5 B	15.8 B	79 B	24.8 B	40.4 B
Cadmium	(ug/l)	5	0.4 U	0.4 B	0.4 U	0.56 B	0.4 U
Chromium	(ug/l)	50	2 U	3.4 B	2.1 B	2.1 B	2 U
Iron	(ug/l)	300	---	[1080]	[12800]	[1150]	226 B
Lead	(ug/l)	25	8.2 B	8.5 B	[62]	[98.2]	3 B
Manganese	(ug/l)	300	---	18.7 B	184	165	78.8
Mercury	(ug/l)	0.7	0.13 U	0.15 U	0.16 U	0.14 B	0.14 U
Selenium	(ug/l)	10	4 U	4 U	4 U	4 U	4 U
Silver	(ug/l)	50	2 U	2.1 B	2.1 B	2 U	2 U
Cyanide	(ug/l)	200	24.8	4 U	9.9 B	4 U	4 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 04/20/2000	SHMW-03S SHMW-03S 04/20/2000	SHMW-04I SHMW-04I 04/20/2000	SHMW-04S SHMW-04S 04/20/2000	SHMW-05I SHMW-05I 04/20/2000
Arsenic	(ug/l)	25	4 U	4 U	4.5 B	4 U	4 U
Barium	(ug/l)	1000	28.4 B	79 B	96.1 B	20.8 B	26.6 B
Cadmium	(ug/l)	5	0.4 U	0.4 U	1.2 B	0.4 U	1.4 B
Chromium	(ug/l)	50	3.4 B	2 U	25.6	2 U	5.4 B
Iron	(ug/l)	300	---	---	---	---	---
Lead	(ug/l)	25	21.3	4.2 B	[83]	3.5 B	13.1
Manganese	(ug/l)	300	---	---	---	---	---
Mercury	(ug/l)	0.7	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Selenium	(ug/l)	10	4 U	4 U	4 U	4 U	6.6 B
Silver	(ug/l)	50	2 U	2 U	2 U	2 U	2 U
Cyanide	(ug/l)	200	4 U	4 U	4 U	15.3 B	<4

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 04/20/2000	SHMW-06I SHMW-06I 04/19/2000	SHMW-06S SHMW-06S 04/19/2000	SHMW-07I SHMW-07I 04/19/2000	SHMW-07S SHMW-07S 04/19/2000
Arsenic	(ug/l)	25	4 U	4 U	4 U	4 U	4 U
Barium	(ug/l)	1000	16.8 B	34.1 B	63.4 B	22 B	100 B
Cadmium	(ug/l)	5	0.4 U	0.48 B	0.4 U	0.4 U	0.85 B
Chromium	(ug/l)	50	5.6 B	4.5 B	2 U	3.9 B	2 U
Iron	(ug/l)	300	---	---	---	---	---
Lead	(ug/l)	25	19.6	12.8	8.4 B	8.7 B	18.6
Manganese	(ug/l)	300	---	---	---	---	---
Mercury	(ug/l)	0.7	0.1 U	0.15 U	0.14 U	0.14 U	0.22 B
Selenium	(ug/l)	10	5.1 B	4 U	4 U	4 U	4 U
Silver	(ug/l)	50	2 U	2.7 B	2 U	2 U	2.6 B
Cyanide	(ug/l)	200	7.2 B	4 U	34.3	5 B	103

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-14
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
RCRA METALS, IRON, MANGANESE AND CYANIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 04/19/2000	SHMW-08S SHMW-08S 04/19/2000	SHMW-09I SHMW-09I 04/18/2000	SHMW-09S SHMW-09S 04/18/2000
Arsenic	(ug/l)	25	4 U	19.9 B	4 U	4 U
Barium	(ug/l)	1000	35.3 B	111 B	20.9 B	157 B
Cadmium	(ug/l)	5	0.4 U	0.56 B	0.45 B	0.53 B
Chromium	(ug/l)	50	2.9 B	2 U	4.9 B	3.6 B
Iron	(ug/l)	300	---	---	---	---
Lead	(ug/l)	25	5.3 B	15.3	17	21.3
Manganese	(ug/l)	300	---	---	---	---
Mercury	(ug/l)	0.7	0.14 U	0.14 U	0.15 U	0.16 U
Selenium	(ug/l)	10	4 U	4 U	4 U	4 U
Silver	(ug/l)	50	2 U	2 U	3.2 B	3.7 B
Cyanide	(ug/l)	200	4.6 B	23.8	4 U	15.8 B

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-01 MW-01 03/17/2000	MW-01 MW-01 04/19/2000	MW-02 MW-02 03/17/2000	MW-02 MW-02 04/19/2000	MW-03 MW-03 03/17/2000
Chloride	(ug/l)	250000	7000	12000	58000	77000	5000
Total Dissolved Solids	(ug/l)		89000	310000	300000	330000	78000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-03 MW-03 04/20/2000	MW-04 MW-04 03/17/2000	MW-05 MW-05 03/17/2000	MW-05 MW-05 04/20/2000	MW-06 MW-6 03/17/2000
Chloride	(ug/l)	250000	18000	21000	9000	11000	18000
Total Dissolved Solids	(ug/l)		290000	190000	170000	170000	180000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	MW-06 MW-06 04/20/2000	SHMW-01I SHMW-01I 04/26/2000	SHMW-01S SHMW-01S 04/26/2000	SHMW-02D SHMW-02D 04/24/2000	SHMW-02I SHMW-02I 04/24/2000
Chloride	(ug/l)	250000	16000	20000	10000	23000	32000
Total Dissolved Solids	(ug/l)		180000	190000	270000	150000	170000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-03I SHMW-03I 04/20/2000	SHMW-03S SHMW-03S 04/20/2000	SHMW-04I SHMW-04I 04/20/2000	SHMW-04S SHMW-04S 04/20/2000	SHMW-05I SHMW-05I 04/20/2000
Chloride	(ug/l)	250000	23000	80000	23000	37000	23000
Total Dissolved Solids	(ug/l)		140000	280000	130000	350000	130000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-05S SHMW-05S 04/20/2000	SHMW-06I SHMW-06I 04/19/2000	SHMW-06S SHMW-06S 04/19/2000	SHMW-07I SHMW-07I 04/19/2000	SHMW-07S SHMW-07S 04/19/2000
Chloride	(ug/l)	250000	15000	26000	45000	23000	120000
Total Dissolved Solids	(ug/l)		140000	150000	420000	150000	550000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-15
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
TOTAL DISSOLVED SOLIDS AND CHLORIDE

PERIOD: From 03/17/2000 thru 04/26/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHMW-08I SHMW-08I 04/19/2000	SHMW-08S SHMW-08S 04/19/2000	SHMW-09I SHMW-09I 04/18/2000	SHMW-09S SHMW-09S 04/18/2000
Chloride	(ug/l)	250000	31000	110000	24000	[500000]
Total Dissolved Solids	(ug/l)		150000	490000	170000	900000

ug/l: micrograms per liter
Data qualifiers defined in Glossary

---=Not Analyzed

TABLE E-16
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/18/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-03I SHMW-03I 04/20/2000	SHMW-03S SHMW-03S 04/20/2000	SHMW-04I SHMW-04I 04/20/2000	SHMW-04S SHMW-04S 04/20/2000	SHMW-05I SHMW-05I 04/20/2000	SHMW-05S SHMW-05S 04/20/2000
Free Cyanide (Dissolved)	(ug/l)	4 U	4 U	4 U	5 B	4 U	4 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

--= Not Analyzed

TABLE E-16
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/18/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-06I SHMW-06I 04/19/2000	SHMW-06S SHMW-06S 04/19/2000	SHMW-07I SHMW-07I 04/19/2000	SHMW-07S SHMW-07S 04/19/2000	SHMW-08I SHMW-08I 04/19/2000	SHMW-08S SHMW-08S 04/19/2000
Free Cyanide (Dissolved)	(ug/l)	5.8 B	4.9 B	4.7 B	6 B	4.1 B	4.3 B

ug/l: micrograms per liter
Data qualifiers defined in Glossary

--= Not Analyzed

Date: 06/26/2001

TABLE E-16
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
MONITORING WELL SAMPLE RESULTS
FREE CYANIDE

PERIOD: From 04/18/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHMW-09I SHMW-09I 04/18/2000	SHMW-09S SHMW-09S 04/18/2000
Free Cyanide (Dissolved)	(ug/l)	5.7 B	4.4 B

ug/l: micrograms per liter
Data qualifiers defined in Glossary

--= Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-01 SHGP-01 (1-5) 03/14/2000	SHGP-01 SHGP-01 (32-34) 03/14/2000	SHGP-02 SHGP-02 (1-5) 03/14/2000	SHGP-02 SHGP-02 (32-34) 03/14/2000	SHGP-02 SHGP-02 (48-52) 04/20/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-02 SHGP-02 (58-62) 04/20/2000	SHGP-03 SHGP-03 (2-6) 03/14/2000	SHGP-03 SHGP-03 (33-35) 03/14/2000	SHGP-04 SHGP-04 (30-32) 03/15/2000	SHGP-04 SHGP-04 (0-4) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-05 SHGP-05 (0-4) 03/15/2000	SHGP-05 SHGP-05 (30-32) 03/15/2000	SHGP-05 SHGP-05 (48-50) 03/22/2000	SHGP-05 SHGP-05 (60-62) 03/22/2000	SHGP-06 SHGP-06(.5-4.5) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-06 SHGP-06(31-33) 03/15/2000	SHGP-07 SHGP-07 (0-4) 03/15/2000	SHGP-07 SHGP-07 (30-32) 03/15/2000	SHGP-08 SHGP-08 (0-4) 03/14/2000	SHGP-08 SHGP-08 (30-32) 03/14/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-09 SHGP-09 (0-4) 03/14/2000	SHGP-09 SHGP-09 (30-32) 03/14/2000	SHGP-10 SHGP-10 (0-4) 03/14/2000	SHGP-10 SHGP-10 (30-32) 03/14/2000	SHGP-10 SHGP-10(48-52) 04/20/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-10 SHGP-10(58-62) 04/20/2000	SHGP-11 SHGP-11 (0-4) 03/15/2000	SHGP-11 SHGP-11 (30-32) 03/15/2000	SHGP-12 SHGP-12 (0-4) 03/15/2000	SHGP-12 SHGP-12 (30-32) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-13 SHGP-13 (0-4) 03/15/2000	SHGP-13 SHGP-13 (30-32) 03/15/2000	SHGP-14 SHGP-14 (3-7) 03/10/2000	SHGP-14 SHGP-14 (33-35) 03/10/2000	SHGP-15 SHGP-15 (3-7) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-15 SHGP-15 (26-28) 03/09/2000	SHGP-15 SHGP-15 (33-35) 03/09/2000	SHGP-16 SHGP-16 (3-7) 03/09/2000	SHGP-16 SHGP-16 (26-28) 03/09/2000	SHGP-16 SHGP-16 (33-35) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-17 SHGP-17 (3-7) 03/10/2000	SHGP-17 SHGP-17 (33-35) 03/10/2000	SHGP-18 SHGP-18 (3-7) 03/07/2000	SHGP-18 SHGP-18 (30-32) 03/07/2000	SHGP-19 SHGP-19 (3-7) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-19 SHGP-19 (33-35) 03/09/2000	SHGP-20 SHGP-20 (2-6) 03/07/2000	SHGP-20 SHGP-20 (33-35) 03/08/2000	SHGP-21 SHGP-21 (2-6) 03/10/2000	SHGP-21 SHGP-21 (31-33) 03/10/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-22 SHGP-22 (1-5) 03/10/2000	SHGP-22 SHGP-22 (30-32) 03/10/2000	SHGP-23 SHGP-23 (2-6) 03/08/2000	SHGP-23 SHGP-23 (32-34) 03/08/2000	SHGP-24 SHGP-24 (33-35) 03/08/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-24 SHGP-24 (1-5) 03/09/2000	SHGP-25 SHGP-25 (2-6) 03/16/2000	SHGP-25 SHGP-25 (32-34) 03/16/2000	SHGP-26 SHGP-26 (0-4) 03/16/2000	SHGP-26 SHSB-26 (30-32) 03/16/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-27 SHGP-27 (0-4) 03/24/2000	SHGP-27 SHGP-27 (30-32) 03/24/2000	SHGP-28 SHGP-28 (4-8) 05/22/2000	SHGP-28 SHGP-28 (34-38) 05/22/2000	SHGP-29 SHGP-29 (30-34) 04/10/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-17
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
BTEX COMPOUNDS

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-29 SHGP-29 (7-11) 04/10/2000	SHGP-30 SHGP-30(46-50) 04/23/2001	SHGP-30 SHGP-30(30-34) 04/23/2001	SHGP-30 SHGP-30(6-10) 04/23/2001
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	1 U	1 U	1 U	1 U
Xylene (total)	(ug/l)	5	1 U	1 U	1 U	1 U
Total BTEX	(ug/l)		0.00	0.00	0.00	0.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-01 SHGP-01 (1-5) 03/14/2000	SHGP-01 SHGP-01 (32-34) 03/14/2000	SHGP-02 SHGP-02 (1-5) 03/14/2000	SHGP-02 SHGP-02 (32-34) 03/14/2000	SHGP-02 SHGP-02 (48-52) 04/20/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-02 SHGP-02 (58-62) 04/20/2000	SHGP-03 SHGP-03 (2-6) 03/14/2000	SHGP-03 SHGP-03 (33-35) 03/20/2000	SHGP-04 SHGP-04 (30-32) 03/15/2000	SHGP-04 SHGP-04 (0-4) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-05 SHGP-05 (0-4) 03/15/2000	SHGP-05 SHGP-05 (30-32) 03/15/2000	SHGP-05 SHGP-05 (48-50) 03/22/2000	SHGP-05 SHGP-05 (60-62) 03/22/2000	SHGP-06 SHGP-06(.5-4.5) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-06 SHGP-06(31-33) 03/15/2000	SHGP-07 SHGP-07 (0-4) 03/15/2000	SHGP-07 SHGP-07 (30-32) 03/15/2000	SHGP-08 SHGP-08 (0-4) 03/14/2000	SHGP-08 SHGP-08 (30-32) 03/14/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-09 SHGP-09 (0-4) 03/14/2000	SHGP-09 SHGP-09 (30-32) 03/14/2000	SHGP-10 SHGP-10 (0-4) 03/14/2000	SHGP-10 SHGP-10 (30-32) 03/14/2000	SHGP-10 SHGP-10(48-52) 04/20/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-10 SHGP-10(58-62) 04/20/2000	SHGP-11 SHGP-11 (0-4) 03/15/2000	SHGP-11 SHGP-11 (30-32) 03/15/2000	SHGP-12 SHGP-12 (0-4) 03/15/2000	SHGP-12 SHGP-12 (30-32) 03/15/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Date: 03/12/2002

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-13 SHGP-13 (0-4) 03/15/2000	SHGP-13 SHGP-13 (30-32) 03/15/2000	SHGP-14 SHGP-14 (3-7) 03/10/2000	SHGP-14 SHGP-14 (33-35) 03/10/2000	SHGP-15 SHGP-15 (3-7) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Date: 03/12/2002

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-15 SHGP-15 (26-28) 03/09/2000	SHGP-15 SHGP-15 (33-35) 03/09/2000	SHGP-16 SHGP-16 (3-7) 03/09/2000	SHGP-16 SHGP-16 (26-28) 03/09/2000	SHGP-16 SHGP-16 (33-35) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-17 SHGP-17 (3-7) 03/10/2000	SHGP-17 SHGP-17 (33-35) 03/10/2000	SHGP-18 SHGP-18 (3-7) 03/07/2000	SHGP-18 SHGP-18 (30-32) 03/07/2000	SHGP-19 SHGP-19 (3-7) 03/09/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-19 SHGP-19 (33-35) 03/09/2000	SHGP-20 SHGP-20 (2-6) 03/07/2000	SHGP-20 SHGP-20 (33-35) 03/08/2000	SHGP-21 SHGP-21 (2-6) 03/10/2000	SHGP-21 SHGP-21 (31-33) 03/10/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-22 SHGP-22 (1-5) 03/10/2000	SHGP-22 SHGP-22 (30-32) 03/10/2000	SHGP-23 SHGP-23 (2-6) 03/08/2000	SHGP-23 SHGP-23 (32-34) 03/08/2000	SHGP-24 SHGP-24 (33-35) 03/08/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-24 SHGP-24 (1-5) 03/09/2000	SHGP-25 SHGP-25 (2-6) 03/16/2000	SHGP-25 SHGP-25 (32-34) 03/16/2000	SHGP-26 SHGP-26 (0-4) 03/20/2000	SHGP-26 SHGP-26 (30-32) 03/20/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-27 SHGP-27 (0-4) 03/24/2000	SHGP-27 SHGP-27 (30-32) 03/24/2000	SHGP-28 SHGP-28 (4-8) 05/22/2000	SHGP-28 SHGP-28 (34-38) 05/22/2000	SHGP-29 SHGP-29 (30-34) 04/10/2000
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 per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-18
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-29 SHGP-29 (7-11) 04/10/2000	SHGP-30 SHGP-30(46-50) 04/23/2001	SHGP-30 SHGP-30(30-34) 04/23/2001	SHGP-30 SHGP-30(6-10) 04/23/2001
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	2 J	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	2.00	0.00

ug/l: micrograms per liter
Data qualifiers defined in Glossary

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-19
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-12 SHGP-12 (0-4) 03/15/2000	SHGP-12 SHGP-12 (30-32) 03/15/2000	SHGP-23 SHGP-23 (2-6) 03/08/2000	SHGP-23 SHGP-23 (32-34) 03/08/2000	SHGP-24 SHGP-24 (33-35) 03/08/2000
Chloromethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Bromomethane	(ug/l)	5	120 U	5 U	---	---	---
Vinyl chloride	(ug/l)	2	120 U	5 U	5 U	5 U	5 U
Chloroethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Methylene chloride	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Acetone	(ug/l)	50	120 U	5 U	---	---	---
Carbon disulfide	(ug/l)	50	120 U	5 U	---	---	---
1,1-Dichloroethene	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	120 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	120 U	5 U	5 U	5 U	5 U
2-Butanone	(ug/l)	50	120 U	5 U	---	---	---
1,1,1-Trichloroethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	120 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	120 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	120 U	5 U	5 U	5 U	5 U
Trichloroethene	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	120 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	120 U	5 U	5 U	5 U	5 U

ug/l: micrograms per liter
Data qualifiers defined in Glossary

* BTEX are excluded (see BTEX data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-19
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
GROUNDWATER PROBE SAMPLE RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)*

PERIOD: From 03/07/2000 thru 04/23/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC SCG	SHGP-12 SHGP-12 (0-4) 03/15/2000	SHGP-12 SHGP-12 (30-32) 03/15/2000	SHGP-23 SHGP-23 (2-6) 03/08/2000	SHGP-23 SHGP-23 (32-34) 03/08/2000	SHGP-24 SHGP-24 (33-35) 03/08/2000
Bromoform	(ug/l)	50	120 U	5 U	---	---	---
4-Methyl-2-pentanone	(ug/l)	5	120 U	5 U	---	---	---
2-Hexanone	(ug/l)	50	120 U	5 U	---	---	---
Tetrachloroethene	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Chlorobenzene	(ug/l)	5	120 U	5 U	5 U	5 U	5 U
Styrene	(ug/l)	5	120 U	5 U	---	---	---
Vinyl Acetate	(ug/l)		120 U	5 U	---	---	---

ug/l: micrograms per liter
Data qualifiers defined in Glossary

* BTEX are excluded (see BTEX data table)

[ ]: Exceeds SCG
---=Not Analyzed

TABLE E-20
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
AMBIENT AIR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 03/17/2000 thru 05/22/2000 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	SHAA-01 SHAA-01 04/03/2000	SHAA-02 SHAA-02 04/03/2000
Benzene	(ppbv)	0.68 U	0.70 U
Ethylbenzene	(ppbv)	0.68 U	0.70 U
m/p-xylene	(ppbv)	0.68 U	0.70 U
o-Xylene	(ppbv)	0.68 U	0.70 U
Toluene	(ppbv)	0.80	0.91
Naphthalene	(ppbv)	14 U	14 U

ppbv= parts per billion by volume

Data qualifiers defined in Glossary.

---=Not Analyzed

Date: 02/06/2001

TABLE E-21
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 04/10/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSV-06 SHSV-06 04/10/2000 0.00	SHSV-07 SHSV-07 04/10/2000 0.00	SHSV-08 SHSV-08 04/10/2000 0.00	SHSV-09 SHSV-09 04/10/2000 0.00	SHSV-10 SHSV-10 04/10/2000 0.00	SHSV-11 SHSV-11 04/10/2000 0.00
Benzene	(ppbv)	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.70
Ethylbenzene	(ppbv)	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U
m/p-xylene	(ppbv)	0.65 U	0.65 U	0.65 U	0.70	1.3	1.8
o-Xylene	(ppbv)	0.65 U	0.65 U	0.65 U	0.65 U	0.67	0.65 U
Toluene	(ppbv)	1.1	1.5	1.3	0.98	3.3	3.4
Naphthalene	(ppbv)	13 U	13 U	13 U	13 U	13 U	13 U

ppbv= parts per billion by volume

---=Not Analyzed

Data qualifiers defined in Glossary.

TABLE E-21
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 04/10/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSV-12 SHSV-12 04/18/2000 0.00	SHSV-13 SHSV-13 04/18/2000 0.00	SHSV-14 SHSV-14 04/20/2000 0.00	SHSV-15 SHSV-15 04/20/2000 0.00	SHSV-16 SHSV-16 04/18/2000 0.00	SHSV-17 SHSV-17 04/18/2000 0.00
Benzene	(ppbv)	3.7	16	1.8	1.4	0.64 U	1.7
Ethylbenzene	(ppbv)	0.64 U	8.8	2.1	1.4	1.3	1.5
m/p-xylene	(ppbv)	1.9	30	8.8	6.4	5.1	6.2
o-Xylene	(ppbv)	0.64 U	8.9	2.5	1.7	1.3	1.7
Toluene	(ppbv)	2.9	91	12	7.5	5.1	5.8
Naphthalene	(ppbv)	13 U	13 U	13 U	13 U	13 U	13 U

ppbv= parts per billion by volume

---=Not Analyzed

Data qualifiers defined in Glossary.

Date: 02/06/2001

TABLE E-21
SAG HARBOR FORMER MGP SITE REMEDIAL INVESTIGATION
SOIL VAPOR SAMPLE RESULTS
BTEX COMPOUNDS AND NAPHTHALENE

PERIOD: From 04/10/2000 thru 04/20/2000 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	SHSV-18 SHSV-18 04/18/2000 0.00
Benzene	(ppbv)	1.1
Ethylbenzene	(ppbv)	0.86
m/p-xylene	(ppbv)	3
o-Xylene	(ppbv)	0.64 U
Toluene	(ppbv)	3.8
Naphthalene	(ppbv)	13 U

ppbv= parts per billion by volume ---=Not Analyzed

Data qualifiers defined in Glossary.

GLOSSARY

ORGANIC DATA QUALIFIERS

B - Indicates that the compound was also detected in the laboratory blank.

C - Applies to pesticide results where the identification has been confirmed by GC/MS.

D - Reported result taken from diluted sample analysis.

E - Reported value is estimated due to quantitation above the calibration range.

J – Reported concentration is less than the Contract Required Detection Limit (CRDL) and is an estimated quantity.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between two GC columns. The lower of the two values is reported.

U - Indicates that the compound was analyzed for but not detected at or above the Contract Required Qualification Limit (CRQL), or the compound is not detected due to qualification through the method or field blank.

INORGANIC DATA QUALIFIERS

B - Indicates analyte result is between Instrument Detection Limit (IDL) and CRDL.

E - Reported value is estimated because of the presence of interference.

J - Reported value is estimated due to variance from quality control limits.

U - Indicates analyte was not detected at or below the CRDL, or the compound is not detected due to qualification through the method or field blank.

* - Duplicate analysis is not within control limits.

APPENDIX F

TABLES SUMMARIZING CHEMICAL CONSTITUENTS TYPICALLY ASSOCIATED WITH FORMER MGP SITES AND NYSDEC SCGS

Table F-1
Sag Harbor Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs

On-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SCGs (PPM)	LOCATION OF MAXIMUM CONCENTRATION
Surface Soil	PAHs	Benzo(a)pyrene *	0.13 to 100	13 of 13	0.061	SHSS-12 (0-6")
		Dibenzo(a,h)anthracene *	ND to 15	11 of 13	0.014	SHSS-12 (0-6")
		Benzo(a)anthracene *	0.09 to 82	11 of 13	0.224	SHSS-12 (0-6")
		Indeno(1,2,3-cd)pyrene *	0.14 to 97	11 of 13	3.2	SHSS-12 (0-6")
		Benzo(b)fluoranthene *	0.18 to 97	11 of 13	1.1	SHSS-12 (0-6")
		Benzo(k)fluoranthene *	0.082 to 50	11 of 13	1.1	SHSS-12 (0-6")
		Chrysene *	0.11 to 75	11 of 13	0.4	SHSS-12 (0-6")
		Naphthalene	ND to 8	0 of 13	13	SHSS-12 (0-6")
		2-Methylnaphthalene	ND to 3.2	0 of 13	36.4	SHSS-12 (0-6")
		Acenapthylene	ND to 21	0 of 13	41	SHSS-10 (0-6")
		Acenapthene	ND to 4.2	0 of 13	50	SHSS-12 (0-6")
		Dibenzofuran	ND to 0.42	0 of 13	6.2	SHSS-03 (0-6")
		Fluorene	ND to 3.1	0 of 13	50	SHSS-12 (0-6")
		Phenanthrene	0.044 to 15	0 of 13	50	SHSS-03 (0-6")
		Anthracene	ND to 12	0 of 13	50	SHSS-12 (0-6")
		Fluoranthene	0.14 to 120	2 of 13	50	SHSS-12 (0-6")
		Pyrene	0.25 to 140	4 of 13	50	SHSS-12 (0-6")
		Benzo(ghi)perylene	0.15 to 110	2 of 13	50	SHSS-12 (0-6")
		Total CaPAHs	0.732 to 516	11 of 13	10	SHSS-12 (0-6")
		Total PAHs	1.393 to 950.79	2 of 13	500 [1]	SHSS-12 (0-6")
	Metals	Arsenic	ND to 9.8	5 of 13	7.5	SHSS-10 (0-6")
		Barium	7.9 to 675	1 of 13	300	SHSS-07 (0-6")
		Cadmium	0.074 to 7.2	0 of 13	10 [2]	SHSS-07 (0-6")
		Chromium	1.9 to 62.3	1 of 13	50 [2]	SHSS-07 (0-6")
		Lead	4 to 3390	4 of 13	500	SHSS-07 (0-6")
		Mercury	ND to 6.3	11 of 13	0.1	SHSS-12 (0-6")
		Selenium	ND to 2.6	2 of 13	2	SHSS-07 (0-6")
		Silver	ND to 1.4	NA	SB	SHSS-01 and 07 (0-6")
		Cyanide	ND to 12.6	NA	NA	SHSS-07 (0-6")
Subsurface Soil	VOCs	Benzene	ND to 140	12 of 48	0.06	SHSB-02 (6'-7')
		Toluene	ND to 370	6 of 48	1.5	SHSB-02 (6'-7')
		Ethylbenzene	ND to 380	10 of 48	5.5	SHSB-02 (6'-7')
		Total Xylenes	ND to 500	15 of 48	1.2	SHSB-02 (6'-7')
	PAHs	Benzo(a)pyrene *	ND to 130	32 of 48	0.061	SHSB-05 (4'-8')
		Dibenzo(a,h)anthracene *	ND to 14	18 of 48	0.014	SHSB-05 (0.5'-0.7' and 4'-8')
		Benzo(a)anthracene *	ND to 180	28 of 48	0.224	SHSB-05 (4'-8')
		Indeno(1,2,3-cd)pyrene *	ND to 58	15 of 48	3.2	SHSB-05 (0.5'-0.7')
		Benzo(b)fluoranthene *	ND to 110	24 of 48	1.1	SHSB-05 (4'-8')
		Benzo(k)fluoranthene *	ND to 32	20 of 48	1.1	SHSB-05 (4'-8')
		Chrysene *	ND to 160	28 of 48	0.4	SHSB-05 (4'-8')
		Naphthalene	ND to 1600	19 of 48	13	SHSB-02 (6'-7')
		2-Methylnaphthalene	ND to 600	10 of 48	36.4	SHSB-10 (2'-4')
		Acenapthylene	ND to 73	4 of 48	41	SHSB-02 (6'-7')
		Acenapthene	ND to 520	8 of 48	50	SHSB-05 (4'-8')
		Dibenzofuran	ND to 24	3 of 48	6.2	SHSB-10 (2'-4')
		Fluorene	ND to 270	6 of 48	50	SHSB-05 (4'-8')
		Phenanthrene	ND to 960	11 of 48	50	SHSB-05 (4'-8')
		Anthracene	ND to 270	8 of 48	50	SHSB-10 (2'-4')
		Fluoranthene	ND to 380	12 of 48	50	SHSB-05 (4'-8')
		Pyrene	ND to 490	13 of 48	50	SHSB-05 (4'-8')
		Benzo(ghi)perylene	ND to 76	5 of 48	50	SHSB-05 (0.5'-0.7')
		Total CaPAHs	0.00 to 679	23 of 48	10	SHSB-05 (4'-8')
		Total PAHs	0.00 to 5347	14 of 48	500 [1]	SHSB-10 (2'-4')

Table F-1
Sag Harbor Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs

On-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SCGs (PPM)	LOCATION OF MAXIMUM CONCENTRATION
Subsurface Soil (cont.)	Metals	Arsenic	ND to 13.6	4 of 48	7.5	SHSB-03 (1'-3')
		Barium	1.7 to 180	0 of 48	300	SHSB-03 (1'-3')
		Cadmium	ND to 1.4	0 of 48	10 [2]	SHSB-13 (2'-4')
		Chromium	0.86 to 41.9	0 of 48	50 [2]	SHSB-05 (0.5'-1.5')
		Lead	ND to 485	0 of 48	500	SHSB-06 (0.5'-1.5')
		Mercury	ND to 4.9	9 of 48	0.1	SHSB-06 (0.5'-1.5')
		Selenium	ND to 6.4	6 of 48	2	SHSB-13 (2'-4')
		Silver	ND to 1.4	NA	SB	SHSB-02 (0.5'-1.5')
		Cyanide	ND to 4.8	NA	NA	SHSB-10 (2'-4')

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

Table F- 2
Sag Harbor Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs

On-Site Groundwater

MEDIA	CLASS	CHEMICAL CONSTITUENT	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SCGs (PPB)	LOCATION OF MAXIMUM CONCENTRATION
Groundwater	VOCs	Benzene	ND to 8700	38 of 51	1	SHGP-02 (32-34)
		Toluene	ND to 7900	17 of 51	5	SHGP-02 (32-34)
		Ethylbenzene	ND to 4700	31 of 51	5	MW-02 (3/17/00)
		Total Xylenes	ND to 4600	35 of 51	5	SHGP-06 (0.5-4.5)
	PAHs	Benzo(a)pyrene *	ND to 56000	33 of 51	ND	SHGP-05 (30-32)
		Dibenzo(a,h)anthracene *	ND to 65	NA	NA	SHGP-05 (0-4)
		Benzo(a)anthracene *	ND to 72000	37 of 51	0.002	SHGP-05 (30-32)
		Indeno(1,2,3-cd)pyrene *	ND to 23000	25 of 51	0.002	SHGP-05 (30-32)
		Benzo(b)fluoranthene *	ND to 44000	34 of 51	0.002	SHGP-05 (30-32)
		Benzo(k)fluoranthene *	ND to 14000	24 of 51	0.002	SHGP-05 (30-32)
		Chrysene *	ND to 63000	38 of 51	0.002	SHGP-05 (30-32)
		Naphthalene	ND to 790000	45 of 51	10	SHGP-05 (30-32)
		2-Methylnaphthalene	ND to 270000	NA	NA	SHGP-05 (30-32)
		Acenapthylene	ND to 220000	NA	NA	SHGP-05 (30-32)
		Acenapthene	ND to 3300	32 of 51	20	SHGP-04 (0-4)
		Dibenzofuran	ND to 11000	NA	NA	SHGP-05 (30-32)
		Fluorene	ND to 100000	20 of 51	50	SHGP-05 (30-32)
		Phenanthrene	ND to 38000	27 of 51	50	SHGP-05 (30-32)
		Anthracene	ND to 110000	18 of 51	50	SHGP-05 (30-32)
		Fluoranthene	ND to 140000	20 of 51	50	SHGP-05 (30-32)
		Pyrene	ND to 200000	22 of 51	50	SHGP-05 (30-32)
		Benzo(ghi)perylene	ND to 25000	NA	NA	SHGP-05 (30-32)
		Total CaPAHs	0.00 to 272000	NA	NA	SHGP-05 (30-32)
		Total PAHs	0.00 to 2518000	NA	NA	SHGP-05 (30-32)
	Metals	Arsenic	ND	NA	25	NA
		Barium	15.8 to 483	0 of 9	1,000	MW-02 (4/19/00)
		Cadmium	ND to 2.2	0 of 9	5	MW-03 (4/20/00)
		Chromium	ND to 4.7	0 of 9	50	MW-01 (4/19/00)
		Lead	ND to 98.2	2 of 9	25	SHMW-02I (4/24/00)
		Mercury	ND to 0.14	0 of 9	0.7	SHMW-02D (4/24/00)
		Selenium	ND	NA	10	NA
		Silver	ND to 2.1	0 of 9	50	SHMW-01S AND I (4/26/00)
		Cyanide	ND to 92.2	0 of 9	200	MW-02 (3/17/00)

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

Table F-3
Sag Harbor Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs

Off-Site Soil

MEDIA	CLASS	CHEMICAL CONSTITUENT	CONCENTRATION RANGE (PPM)	FREQUENCY OF EXCEEDING SCG	SCGs (PPM)	LOCATION OF MAXIMUM CONCENTRATION
Subsurface Soil	VOCs	Benzene	ND	0 of 9	0.06	NA
		Toluene	ND	0 of 9	1.5	NA
		Ethylbenzene	ND to 22	3 of 9	5.5	SHSB-14(5'-7')
		Total Xylenes	ND to 42	3 of 9	1.2	SHSB-14(5'-7')
	PAHs	Benzo(a)pyrene *	ND to 19	4 of 9	0.061	SHSB-14(5'-7')
		Dibenzo(a,h)anthracene *	ND to 2	4 of 9	0.014	SHSB-14(5'-7')
		Benzo(a)anthracene *	ND to 29	4 of 9	0.224	SHSB-14(5'-7')
		Indeno(1,2,3-cd)pyrene *	ND to 7.3	1 of 9	3.2	SHSB-14(5'-7')
		Benzo(b)fluoranthene *	ND to 15	3 of 9	1.1	SHSB-14(5'-7')
		Benzo(k)fluoranthene *	ND to 5.3	1 of 9	1.1	SHSB-14(5'-7')
		Chrysene *	ND to 26	4 of 9	0.4	SHSB-14(5'-7')
		Naphthalene	ND to 100	3 of 9	13	SHSB-14(5'-7')
		2-Methylnaphthalene	ND to 77	1 of 9	36.4	SHSB-14(5'-7')
		Acenapthylene	ND to 13	0 of 9	41	SHSB-15(26'-28')
		Acenapthene	ND to 89	1 of 9	50	SHSB-14(5'-7')
		Dibenzofuran	ND to 2.6	0 of 9	6.2	SHSB-14(5'-7')
		Fluorene	ND to 43	0 of 9	50	SHSB-14(5'-7')
		Phenanthrene	ND to 130	1 of 9	50	SHSB-14(5'-7')
		Anthracene	ND to 44	0 of 9	50	SHSB-14(5'-7')
		Fluoranthene	ND to 57	1 of 9	50	SHSB-14(5'-7')
		Pyrene	ND to 75	1 of 9	50	SHSB-14(5'-7')
		Benzo(ghi)perylene	ND to 8.4	0 of 9	50	SHSB-14(5'-7')
		Total CaPAHs	0.00 to 103.60	3 of 9	10	SHSB-14(5'-7')
		Total PAHs	0.00 to 738.70	1 of 9	500 [1]	SHSB-14(5'-7')
	Metals	Arsenic	ND to 1	0 of 9	7.5	SHSB-16 (6'-8')
		Barium	1.7 to 27.3	0 of 9	300	SHSB-16 (50'-52')
		Cadmium	ND to 0.29	0 of 9	10 [2]	SHSB-14 (5'-7')
		Chromium	0.88 to 8.1	0 of 9	50 [2]	SHSB-16 (50'-52')
		Lead	0.43 to 14.9	0 of 9	500	SHSB-16 (6'-8')
		Mercury	ND to 0.11	1 of 9	0.1	SHSB-14 (5'-7')
		Selenium	ND to 0.7	0 of 9	2	SHSB-16 (50'-52')
		Silver	ND to 0.58	NA	SB	SHSB-14 (5'-7')
		Cyanide	ND	NA	NA	NA

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

Table F- 4
Sag Harbor Former MGP Site
Summary of Chemical Constituents Typically Associated with Former MGP Sites and Comparison to NYSDEC SCGs

Off-Site Groundwater

MEDIA	CLASS	CHEMICAL CONSTITUENT	CONCENTRATION RANGE (PPB)	FREQUENCY OF EXCEEDING SCG	SCGs (PPB)	LOCATION OF MAXIMUM CONCENTRATION
Groundwater	VOCs	Benzene	ND to 5300	26 of 47	1	SHMW-04S (4/20/00)
		Toluene	ND to 92	7of 47	5	SHMW-06S (4/19/00)
		Ethylbenzene	ND to 890	21 of 47	5	SHMW-04S (4/20/00)
		Total Xylenes	ND to 1300	22 of 47	5	SHMW-04S (4/20/00)
	PAHs	Benzo(a)pyrene *	ND to 91	14 of 47	ND	SHGP-19 (3-7)
		Dibenzo(a,h)anthracene *	ND to 8	NA	NA	SHGP-14 (3-7)
		Benzo(a)anthracene *	ND to 130	15 of 47	0.002	SHGP-19 (3-7)
		Indeno(1,2,3-cd)pyrene *	ND to 31	9 of 47	0.002	SHGP-19 (3-7)
		Benzo(b)fluoranthene *	ND to 72	11 of 47	0.002	SHGP-19 (3-7)
		Benzo(k)fluoranthene *	ND to 21	7 of 47	0.002	SHGP-14 (3-7)
		Chrysene *	ND to 110	15 of 47	0.002	SHGP-19 (3-7)
		Naphthalene	ND to 5700	24 of 47	10	SHMW-07S (4/19/00)
		2-Methylnaphthalene	ND to 800	NA	NA	SHGP-14 (3-7)
		Acenapthylene	ND to 79	NA	NA	SHMW-06S (4/19/00)
		Acenapthene	ND to 580	22 of 47	20	SHGP-14 (3-7)
		Dibenzofuran	ND to 16	NA	NA	SHGP-14 (3-7)
		Fluorene	ND to 230	8 of 47	50	SHGP-19 (3-7)
		Phenanthrene	ND to 790	10 of 47	50	SHGP-19 (3-7)
		Anthracene	ND to 210	5 of 47	50	SHGP-19 (3-7)
		Fluoranthene	ND to 240	5 of 47	50	SHGP-19 (3-7)
		Pyrene	ND to 350	8 of 47	50	SHGP-19 (3-7)
		Benzo(ghi)perylene	ND to 44	NA	NA	SHGP-19 (3-7)
		Total CaPAHs	0.00 to 452	NA	NA	SHGP-19 (3-7)
		Total PAHs	0.00 to 7211	NA	NA	SHMW-07S (4/19/00)
	Metals	Arsenic	ND to 19.9	0 of 14	25	SHMW-08S (4/19/00)
		Barium	15.8 to 157	0 of 14	1,000	SHMW-09S (4/18/00)
		Cadmium	ND to 1.4	0 of 14	5	SHMW-05I (4/20/00)
		Chromium	ND to 25.6	0 of 14	50	SHMW-04I (4/20/00)
		Lead	ND to 83	1 of 14	25	SHMW-04I (4/20/00)
		Mercury	ND to 0.22	0 of 14	0.7	SHMW-07S (4/19/00)
		Selenium	ND to 6.6	0 of 14	10	SHMW-05I (4/20/00)
		Silver	ND to 3.7	0 of 14	50	SHMW-09S (4/18/00)
		Cyanide	ND to 103	0 of 14	200	SHMW-07S (4/19/00)

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

APPENDIX G

QUALITATIVE HUMAN EXPOSURE ASSESSMENT AND FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS

Qualitative Human Exposure Assessment and Fish and Wildlife Resources Impact Analysis

Sag Harbor Former Manufactured Gas Plant Site

Prepared for: **KeySpan Corporation**
One MetroTech Center
Brooklyn, New York 11201-3850

Prepared by: **VHB/Vanasse Hangen Brustlin, Inc.**
Environmental Risk Management
54 Tuttle Place
Middletown, Connecticut 06457

May 2002

Table of Contents

1.0 INTRODUCTION 1
1.1 SITE BACKGROUND AND SETTING 1
1.1.1 Site Location and Description 1
1.1.2 Site History 2
1.1.3 Land Use and Demographics 2
1.1.4 Climate 2
1.1.5 Topography 3
1.1.6 Site Hydrogeological Characteristics 3
2.0 QUALITATIVE HUMAN EXPOSURE ASSESSMENT 4
2.1 NATURE AND EXTENT OF CHEMICAL CONSTITUENT 4
2.2 CHEMICAL FATE AND TRANSPORT 4
2.3 SELECTION OF CHEMICALS OF POTENTIAL CONCERN 6
2.4 EXPOSURE SETTING AND IDENTIFICATION OF POTENTIALLY EXPOSED POPULATIONS 7
2.4.1 Current Scenarios 7
2.4.2 Future Scenarios 8
2.5 IDENTIFICATION OF EXPOSURE PATHWAYS 9
2.6 CONCLUSIONS 10
3.0 FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS 11
3.1 FISH AND WILDLIFE RESOURCES 11
3.1.1 Terrestrial Resources 11
3.1.1.1 Cover Type 1: Commercial Area 12
3.1.1.2 Cover Type 2: Residential Area 12
3.1.1.3 Cover Type 3: Successional Field 12
3.1.1.4 Cover Type 4: Emergent Wetland 13
3.1.2 Aquatic Resources 13
3.1.2.1 Peconic Estuary 13
3.1.3 Freshwater and Tidal Wetlands 14
3.1.4 Fish and Wildlife Resources 14
3.1.5 Observation of Stress 15
3.1.6 Value of Habitat to Associated Fauna 15
3.1.7 Value of Resources to Humans 16
3.2 EXPOSURE PATHWAYS ANALYSIS 16
3.2.1 Chemicals of Potential Ecological Concern 16
3.2.2 Exposure Pathways 17
3.3 CRITERIA-SPECIFIC TOXICITY ASSESSMENT 17
3.3.1 Soil 17
3.4 CONCLUSIONS 19
3.4.1 Habitat Characterization 19
3.4.2 Soil 20
4.0 REFERENCES 21

List of Tables

Qualitative Human Exposure Assessment

2-1 Human Health Chemicals of Potential Concern
2-2 Exposure Matrix for the Sag Harbor Former Manufactured Gas Plant Site

Fish and Wildlife Resources Impact Analysis

3-1 Fish and Wildlife Resources Impact Analysis Decision Key
3-2 Plant Species Identified During Field Reconnaissance
3-3 Endangered and Threatened Species in the Vicinity of the Sag Harbor Site
3-4 Fish Species That May Be Present in the Peconic Estuary
3-5 Herptile Species That May Be Present Based on Cover Types
3-6 Bird Species That May Be Present Based on Cover Types
3-7 Mammals That May Potentially Be Present Based on Cover Types
3-8 Comparison of Sag Harbor Surface Soil Data to Toxicological Benchmark Values
3-9 Parameters for Calculation of Toxicological Benchmarks
3-10 Derivation of Toxicological Benchmarks for Meadow Vole

List of Attachments

1-1A Conceptual Site Model – Current Site Plan
1-1B Conceptual Site Model – Historic Aerial Photo
1-1C Conceptual Site Model – Environmental Attributes and Sensitive Receptors
1-1D Conceptual Site Model – Land Cover / Land Use Map

1.0 Introduction

This qualitative exposure assessment is part of a Remedial Investigation conducted under an Order on Consent (Index No. D1-0002-98-11) between KeySpan Energy 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 identifies potential human exposures associated with chemical constituents detected in soil, groundwater, and ambient air at or near the Sag Harbor former MGP site (site). A screening-level ecological assessment, in the form of a fish and wildlife resources impact analysis (FWRIA), also is included.

This assessment considers exposure of humans and biota to chemicals at the site. The specific objectives of the assessment 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.

This assessment used data collected as a part of Dvirka and Bartilucci's (D&B's) Remedial Investigation report (Report) and considered data derived from previous site investigations (Fluor Daniel GTI 1997, Engineering-Science 1993). The ecological portion of the assessment is consistent with the NYSDEC's FWRIA guidance (NYSDEC transmittal to KeySpan).

1.1 Site Background and Setting

1.1.1 Site Location and Description

The Report 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. The site 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.

1.1.2 Site History

The site was used to manufacture gas, either intermittently or continuously, from approximately 1862 until 1931. The gas storage capacity of the facility was significantly increased, including the construction of the above ground high-pressure storage tanks, circa 1929. Structures which had been used for gas manufacture were later dismantled and removed from the site. A detailed site history and graphics depicting historical site structures are provided in section 1.4 of the Report.

1.1.3 Land Use and Demographics

Land use and demographics information is provided in section 1.5.1 of the Report.

1.1.4 Climate

A description of regional climatic conditions is provided in section 1.5.2 of the Report.

1.1.5 Topography

A description of site topography is provided in section 1.5.3 of the Report.

1.1.6 Site Hydrogeological Characteristics

A description of the site hydrogeological characteristics is provided in section 3.0 of the Report.

2.0 Qualitative Exposure Assessment

2.1 Nature and Extent of Chemical Constituents

BTEX (benzene, ethylbenzene, toluene, 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 Report provides a detailed description of the nature and extent of chemical constituents found on-site and at relevant off-site locations.

2.2 Chemical Fate and Transport

The fate and transport of chemicals in the environment are influenced by a variety of site- and chemical-specific factors. Environmental fate and transport processes for the COPCs at the Sag Harbor former MGP site are summarized briefly in this section and discussed in detail in section 5.0 of the Report.

The fate and transport of these chemicals in the environment depend on the properties of both the chemicals and the environmental media in which they occur. For organic constituents, physical and chemical properties such as water solubility, Henry's Law constant, octanol-water partition coefficient, and organic-carbon partition coefficient, affect the fate and transport in the environment.

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

BTEX compounds have high vapor pressures and, therefore, would be expected to volatilize readily from environmental media to the atmosphere. Once released to the atmosphere, these compounds are rapidly photodegraded (broken-down by light). These compounds have low octanol / water coefficients (log K_{ow}) and, therefore, do not adsorb well to soil or to sediment or particulate matter present in the water column.

Bioconcentration factors (BCFs), which relate the concentration of the chemical in an organism at equilibrium to the concentration of the chemical in water, are used to assess the potential for chemical bioconcentration. BCFs correlate with the octanol/water partition coefficient and solubility of a chemical. Since VOCs have low octanol/water coefficients and high water solubilities, these chemicals have a low potential to bioconcentrate in organisms (Howard 1990).

PAHs contain only carbon and hydrogen and consist of two or more fused benzene rings in linear, angular, or cluster arrangements. In general, most PAHs can be characterized as 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}). These properties indicate that PAHs remain bound to soil and sediment particles and do not freely enter the water column. The majority of the underlying soils at the site have a low organic content; however, a layer of peat (approximately two feet thick and underlying approximately 70% of the site) acts as a confining layer. High partition coefficients and low solubilities suggest that PAHs are likely to be adsorbed onto sediment particles. These properties indicate that most PAHs will not readily volatilize into the atmosphere.

Although PAHs are regarded as persistent in the environment, they are degradable by microorganisms. Environmental factors, microbial flora and physicochemical properties of the PAHs themselves influence degradation rates and degree of degradation. Important environmental factors influencing degradation include temperature, pH, redox potential (the tendency of a chemical to accept or donate electrons, or to become reduced or oxidized), and microbial species present. Physicochemical properties that influence degradation include chemical structure, concentration, and lipophilicity ("fat-loving" tendency).

The fate of adsorbed PAHs in water is influenced by a number of factors including duration of PAH exposure to sunlight which will largely determine the extent of photo-oxidation. In general, only small amounts of PAHs in aquatic systems will be found in solution and could be expected to accumulate in sediments. The ultimate fate of PAHs that accumulate in sediments is biodegradation and biotransformation by benthic (sediment-dwelling) organisms. However, biodegradation is slow in the absence of penetrating solar radiation and oxygen (Eisler 1987).

In general, PAHs show little tendency to biomagnify in food chains, despite their high lipid solubility, probably because most PAHs are rapidly metabolized by the organisms that are exposed to them (Eisler 1987).

Metals are most mobile under acid conditions. Increased pH usually reduces their bioavailability. Generally, metals do not exist in soluble forms for long and generally accumulate in bottom sediment. Once in the sediment, most metals sorb onto hydrous iron and manganese oxides, clayey minerals, and organic materials. Metal bioavailability from the sediment is enhanced under conditions of low pH, high dissolved oxygen, high temperature, and oxidation state. During these conditions, metals become soluble and freely move in the interstitial pore water and the water column (McIntosh 1992).

2.3 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. It should be noted that additional off-site investigation work to further define the limits of any off-site migration of BTEX and PAHs is being conducted at the site. Analytical results from this supplemental investigation may result in modifications to Table 2-1; however, it is anticipated that these changes will be relatively minor.

Defining the objectives of the qualitative human exposure assessment includes establishing the assessment endpoints based on the fate and transport of relevant chemical constituents and identification of potential exposure populations and pathways occurring at the site. This process results in the production of a Conceptual Site Model (CSM). The CSM graphically represents a site and its environment and presents information regarding potential exposure routes for humans, plants, or animals. Exposure routes represent the course that a chemical may take from a source to an individual receptor. The exposure route is defined by a source, which is described by the measurement of concentrations of chemicals in a given medium (*e.g.*, chemical concentrations in soil), a release mechanism (*e.g.*, leaching from soil to groundwater), and a point of exposure (*e.g.*, human skin). The CSM for the site is provided in Attachments 1-1A through 1-1D.

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.

2.4 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. Analytical results from the aforementioned supplemental investigation may result in refinement of potential exposure scenarios associated with off-site human populations.

2.4.1 Current Scenarios

Current human populations considered in this qualitative exposure assessment include on-site adolescent 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, 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; 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 underneath structures was assumed to 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.

A private well survey is planned in the vicinity of the Sag Harbor site. The survey area was identified by agreement between NYSDEC and KeySpan on April 3, 2002. Although it is unlikely that individuals utilizing a private well as a water supply will be identified, potential exposure to groundwater for domestic use is included here pending results of the survey. 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. The potential for this exposure will be refined upon receipt of analytical results associated with the supplemental investigation work.

2.4.2 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.

2.5 Identification of Exposure Pathways

Table 2-2 provides qualitative descriptions of the complete exposure pathways for potential current and future on-site and off-site human populations. As mentioned previously, analytical results from the supplemental investigation may result in refinement of potential exposure scenarios associated with the off-site human populations. Under current site use conditions, the on-site trespasser is assumed to 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 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).

Under future site use conditions, on-site construction workers are assumed to 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. Relevant 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); 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 exposures for off-site adult and child residents include inhalation of chemicals in indoor air.

As discussed previously, a private well survey is planned in the vicinity of the site. It is likely that private wells used for potable purposes will not be identified; however, potential exposure scenarios were included pending results of this survey. 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 is possible for off-site residents. 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.

Under future off-site conditions, off-site construction workers and nearby off-site utility workers, are assumed to 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.). Ambient air exposure was assumed to be the sum of soil particulate, soil vapor, and groundwater vapor exposures.

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: adolescent 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, and adult and child residents. 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.

The Remedial Investigation and qualitative human exposure assessment have indicated that there are pathways through which people on site and in the community could be exposed to potentially hazardous materials related to former MGP activities. KeySpan also is initiating additional site investigation work, with NYSDEC approval, to further define the limits of any off-site migration of BTEX and PAHs. It is anticipated that analytical results from the supplemental investigation may result in minor modifications to the list of COPCs as well as refinement of potential exposure scenarios associated with off-site human populations. These data will be evaluated to determine the need for remedial actions. Should remedial action be warranted, KeySpan will develop 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 and groundwater. This analysis contains:

- Site descriptions and a characterization of plant and animal resources and their value to humans.
- The identification of regulatory standards and criteria for fish and wildlife.
- 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 by cover type 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. 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 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) emergent wetland located west of the site. Reschke classifies this cover type as shallow emergent marsh. It is 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. Geoprobe sample numbers SHGP-29 and SHGP-30 collected near the Sag Harbor Bay were nondetect for all BTEX and PAH compounds except for the intermediate zone of SGHP-30 which contained 2 ppb of total PAHs. Based on these results, potentially site-related impacts on the Peconic Estuary are unlikely. Data collected under the additional site investigation will be evaluated to aid in determining if remedial activities specific to biota in the Peconic Estuary are warranted.

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 the lack of vegetation, which could provide food and cover, and constant human activity. 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. Ground water migrating from the site is flowing in this direction. Geoprobe SHGP-29 and SHGP-30 were collected in the vicinity of the vegetated area and were nondetect for all BTEX and PAH compounds except for the intermediate zone of SHGP-30 in which 2 ppb of total PAHs was detected. 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 28 samples (13 surface soil and 15 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. Geoprobe sample numbers SHGP-29 and SHGP-30 collected near the Sag Harbor Bay were nondetect for all BTEX and PAH compounds except for the intermediate zone of SHGP-30 which contained 2 ppb of total PAHs. Based on these results, the estuary and associated wetlands have not been impacted by the site. 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:

$$NOAEL_w = NOAEL_t \times \left({bw_t}/{bw_w} \right)^{1/4}$$

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.

3.4 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.

Groundwater at the site is flowing northwest toward Sag Harbor Bay which is part of the Peconic Estuary. Geoprobe sample numbers SHGP-29 and SHGP-30 collected near the Sag Harbor Bay were nondetect for all BTEX and PAH compounds except for the intermediate zone of SHGP-30 which contained 2 ppb of total PAHs. Based on these results, the Peconic Estuary is currently not impacted by site-related constituents.

A supplemental investigation is planned, with NYSDEC approval, to further define the limits of any off-site migration of site-related constituents. Data collected under this effort will be evaluated to identify any potential impacts to biota and will be incorporated into the final remedial investigation report.

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. However, data collected under the additional site investigation will be used to update this FWRIA and to aid in determining if remedial activities specific to wildlife exposures are warranted. If warranted, these actions will be addressed during the development of a Remedial Action Plan.

4.0 References

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.

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.

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, 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.

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 (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

Medium	Chemicals of Potential Concern		
	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	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, chromium (total), copper, lead, manganese, mercury (inorganic), nickel, silver, vanadium, zinc
Subsurface Soil			
On-Site	1,1,1-Trichloroethane, 2-butanone, acetone, benzene, ethylbenzene, methylene chloride, 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, 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	Ethylbenzene, xylene (total)	None	Arsenic, barium, cadmium, chromium (total), lead, mercury (inorganic), silver [2]
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), lead, mercury (inorganic), selenium, silver [2]
Indoor Air [3]			
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)	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 and Visitor)	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	Mercury
Off-Site (Condominium Resident)	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	None
Off-Site (Northern Resident)	benzene, ethylbenzene, 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	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

Note: Additional off-site investigation work is currently being conducted at the site. It is anticipated that analytical results from this supplemental investigation may result in minor modifications to the list of off-site COPCs.

[1] Off-site surface soil COPCs were selected based on data collected under previous investigations, independent of the Remedial Investigation.

[2] Analysis was for RCRA metals.

[3] Indoor air samples have not been collected from off-site areas. COPCs for this medium were selected based on chemicals detected in subsurface soil and groundwater with the potential to volatilize.

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	Adolescent Trespassers – C	√	√	√	Ø	Ø	Ø	Ø	Ø	Ø
	Adult KeySpan Workers – C [1]	√	√	√	√	√	Ø	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]	√	√	√	√	√	√	√	√	√
Off- Site	Adult Commercial Workers – C [2]	Ø	Ø	√ [5, 6]	Ø	Ø	√ [4]	√ [4]	√	Ø
	Adult & Child Visitors – C [2]	Ø	Ø	√ [5, 6]	Ø	Ø	√ [4]	√ [4]	√	Ø
	Adult & Child Residents – C [2]	√	√	√ [5, 6]	√	√	√ [4]	√ [4]	√	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.)

Note: Additional off-site investigation work is currently being conducted at the site. Analytical results from this supplemental investigation work may result in refinement of potential exposure scenarios associated with off-site human populations.

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 A private well survey is planned in the vicinity of the Sag Harbor site. Although it is unlikely that individuals utilizing a private well as a water supply will be identified, the potential for this exposure is included pending results of the survey. Also, 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. It is expected that the potential for exposure via this pathway will be refined upon receipt of analytical results associated with planned supplemental investigation work.
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.

√ = Potentially Complete Pathway/Route
Ø = Incomplete Pathway/Route
C = Current exposure
F = Future exposure

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	5/28	0.002-11
Ethylbenzene			**2003**	7/28	0.003-18
Toluene		200	208	8/28	0.003-63
Xylene (total)			2.5	8/28	0.005-85
Semivolatile Organic Compounds					
2-Methylnaphthalene			**18**	22/28	0.051-600
Acenaphthene		20	**1395**	7/28	0.3-500
Acenaphthylene			**1395**	25/28	0.047-71
Anthracene			**7971**	26/28	0.04-270
Benz(a)anthracene			**8**	27/28	0.042-160
Benzo(a)pyrene			8	27/28	0.071-110
Benzo(b)fluoranthene			**996**	27/28	0.07-97
Benzo(g,h,i)perylene			**598**	27/28	0.073-110
Benzo(k)fluoranthene			**996**	25/28	0.082-50
Chrysene			**8**	27/28	0.048-140
Dibenz(a,h)anthracene			**8**	20/28	0.32-15
Dibenzofuran			**8**	9/28	0.25-24
Fluoranthene			**996**	27/28	0.046-350
Fluorene	30		**996**	16/28	0.2-250
Indeno(1,2,3-cd)pyrene			**996**	27/28	0.056-97
Naphthalene			**1473**	24/28	0.05-1300
Phenanthrene			**20**	27/28	0.044-900
Pyrene			**598**	28/28	0.083-450
Inorganic Compounds					
Aluminum			15.433	3/3	2330-2700
Antimony		5	1.0	2/3	0.39-0.72
Arsenic	60	10	1.008	24/28	0.41-13.6
Barium		500	79.6	28/28	5.7-675
Beryllium		10	9.75	3/3	0.22-0.31
Cadmium	20	4	14.255	26/28	0.056-7.2
Chromium	0.4	1	40499	28/28	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	20/28	0.13-12.6
Lead	500	50	118.23	28/28	4-3390
Manganese		500	1301	3/3	1070-2320
Mercury	0.1	0.3	19.21	23/28	0.027-6.3
Nickel	200	30	591.15	3/3	5.8-10.8
Selenium	70	1	2.956	23/28	0.38-6.4
Silver		2	**1.68**	19/28	0.22-1.4
Vanadium		2	2.881	3/3	9.9-14.3
Zinc	200	50	2364.6	3/3	142-352
Pesticides/PCBs					
4,4-DDD			11.8	3/3	0.0041-0.33
4,4-DDT			11.8	2/3	0.0038-0.35
Aroclor-1260			**31.0**	2/3	0.15-0.97
Dieldrin			0.296	3/3	0.02-0.83
Endosulfan II			2.22	2/3	0.024-0.72
Endosulfan sulfate			**2.21**	1/3	0.01-0.01
Endrin aldehyde			**0.9**	1/3	0.13-0.13
Endrin ketone			**0.9**	3/3	0.0082-0.52
Methoxychlor			59.1	2/3	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:

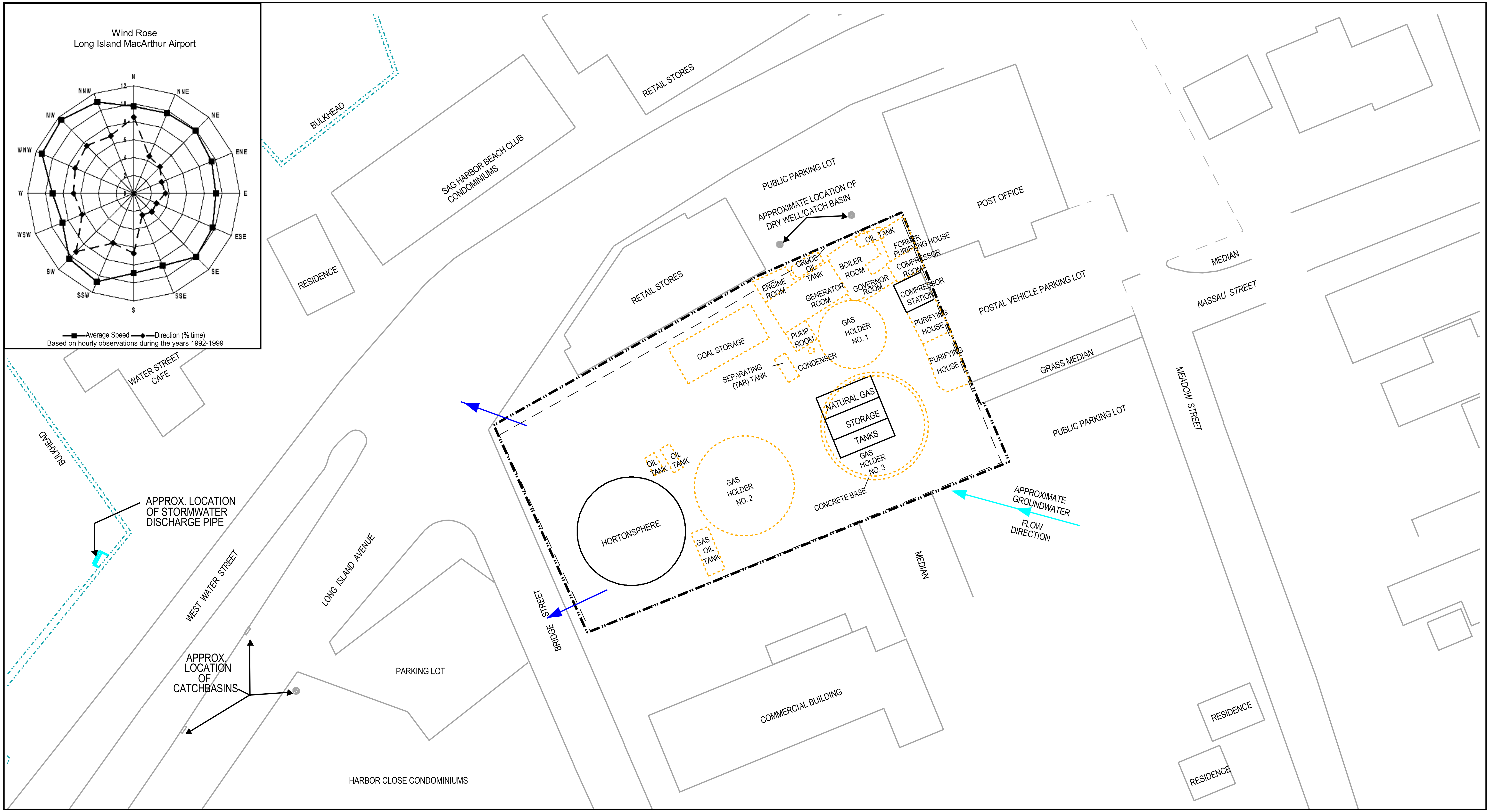
HEAST: USEPA, 1997.

NTP: National Toxicology Program's Chemical Health and Safety Data Website: http://ntp-server.niehs.nih.gov/Main_Pages/Chem-HS.html

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

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
Location of Existing Structure
Current Site Boundary
Fence
Surface Drainage
Approximate Groundwater Flow Direction
Shore Line

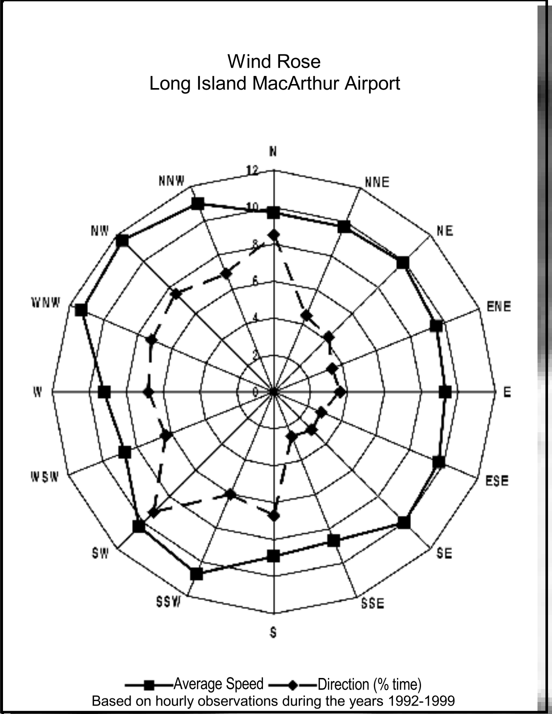
Map Compiled By:
VHB
Vanasse Hangen Brustlin, Inc.
May 2002

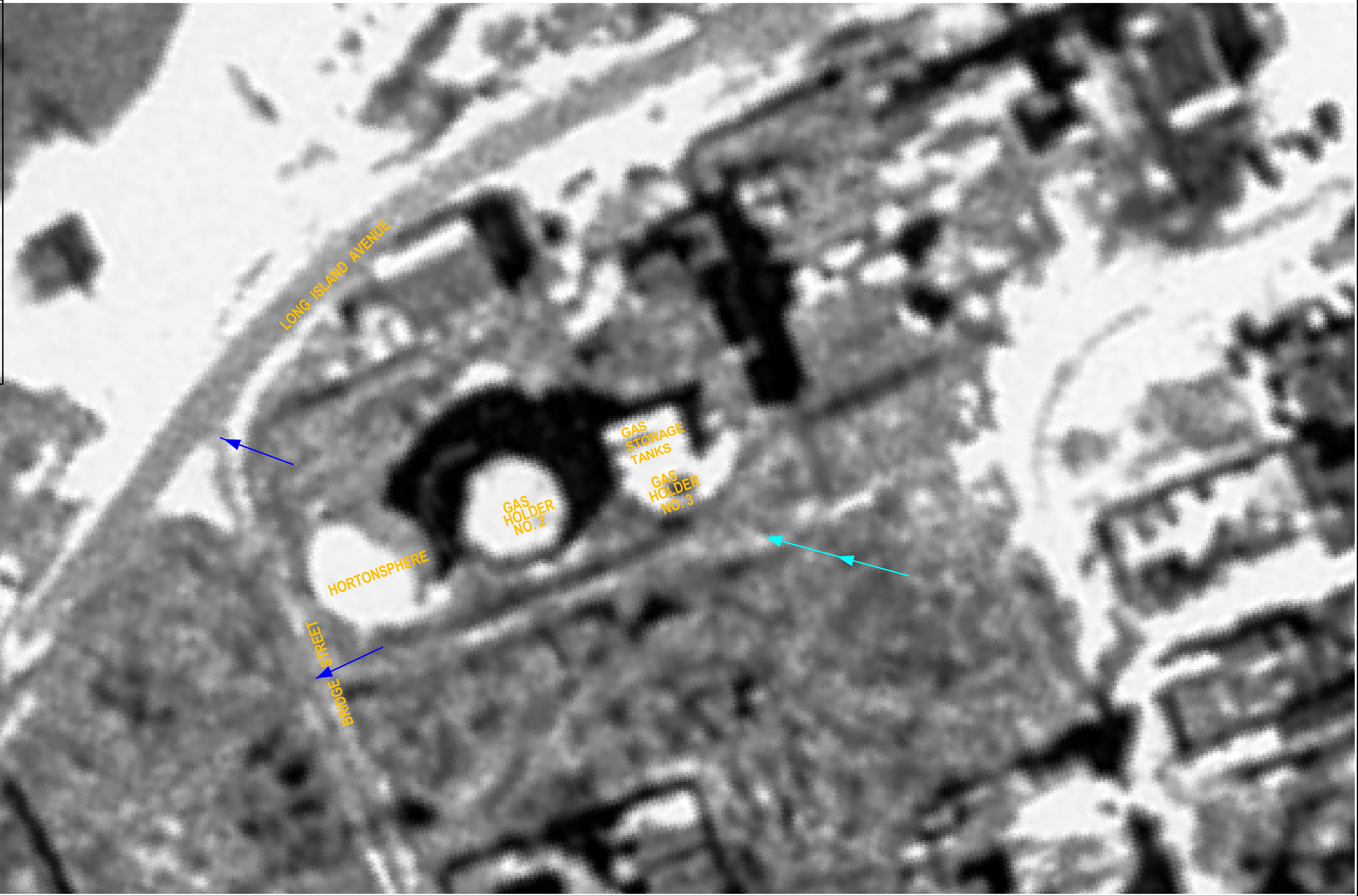
KEYSPAN ENERGY

Attachment 1-1A
Conceptual Site Model - Current Site Plan

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York

ctmiddat\06392\QRA\Sag Harbor\Final Submittal to D&B\Attachment1-1A.pdf





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

Map Compiled By:

VHB

Vanasse Hangen Brustlin, Inc.

May 2002

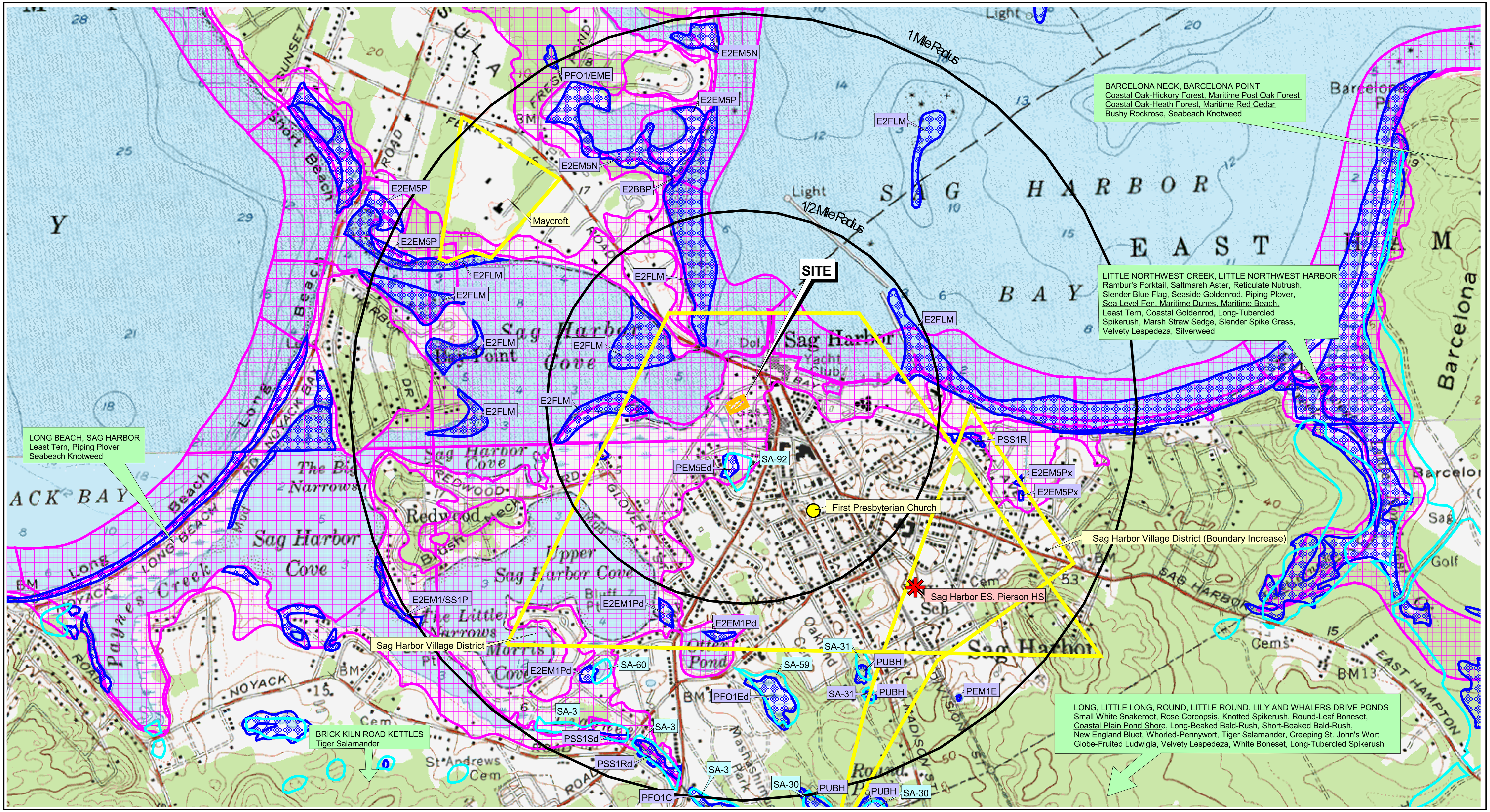
ctmiddat\06392\QRA\Sag Harbor\Final Submittal to D&B\Attachment1-1B.pdf

N

KEYSPAN ENERGY

Attachment 1-1B
Conceptual Site Model -
Historic Aerial Photo

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York



Map Key

500 0 500 1000 1500 2000 Feet

SOURCES:
Offsite Receptors, Historic Places - Environmental Data Resources, Inc.
USGS Topographic Maps, Sag Harbor, NY and Greenport, NY, 1956
US Fish and Wildlife National Wetlands Inventory
Fresh Water Wetlands - NYSDEC, 1998
Rare Species and Ecological Communities - NYSDEC
FEMA Q3 Floodplain Data, 1996

- Site
- National Wetlands Inventory
- Fresh Water Wetlands
- 100 Year Floodplain
- Offsite Receptors
- Historic Places
- Historic Districts
- Rare Species and Ecological Communities

N

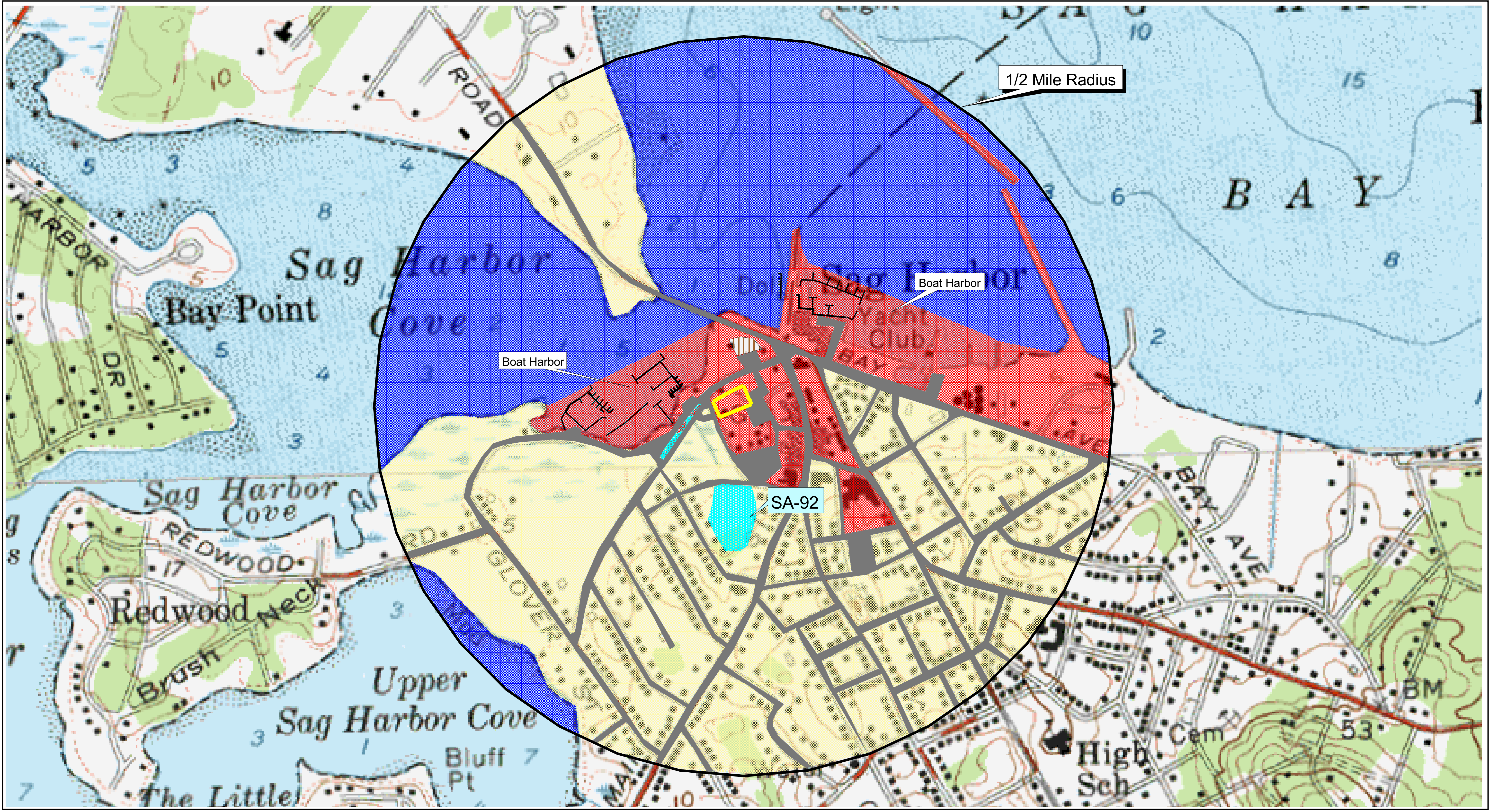
Map Compiled By:
VHB
Vanasse Hangen Brustlin, Inc.
May 2002

ctmiddat\06392\QRA\Sag Harbor\Final Submittal to D&B\Attachment1-1C.pdf

KEYSPAN ENERGY

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
Field Observations

Map Compiled By:
VHB
Vanasse Hangen Brustlin, Inc.
April 2002

N

Map Key

- Site
- Commercial
- Residential
- Paved
- Open Field
- Water
- Wetland

500 0 500 1000 Feet

KEYSPAN ENERGY

Attachment 1-1D
Land Cover/Land Use Map

Sag Harbor
Former Manufactured Gas Plant Site
Sag Harbor, New York

ctmiddat\06392\QRA\Sag Harbor\Final Submittal to D&B\Attachment1-1D.pdf