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FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

02-8810-73-SI
REV. NO. 1

FINAL DRAFT SCREENING SITE INSPECTION
SAG HARBOR - BRIDGE STREET
SAG HARBOR, NEW YORK
VOLUME I

PREPARED UNDER
TECHNICAL DIRECTIVE DOCUMENT NO. 02-8810-73
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

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NUS CORPORATION
SUPERFUND DIVISION

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SCREENING SITE INSPECTION
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1.0 INTRODUCTION/BACKGROUND

The U.S. Environmental Protection Agency (EPA) Region II assigned the NUS Region 2 Field Investigation Team (FIT) the task of performing a screening site inspection (SSI) at the Sag Harbor-Bridge Street Site in Sag Harbor, New York. This inspection was performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The performance of this SSI was authorized under the Technical Directive Document (TDD) 02-8810-73 issued under EPA Contract 68-01-7346.

1.1 SITE DESCRIPTION

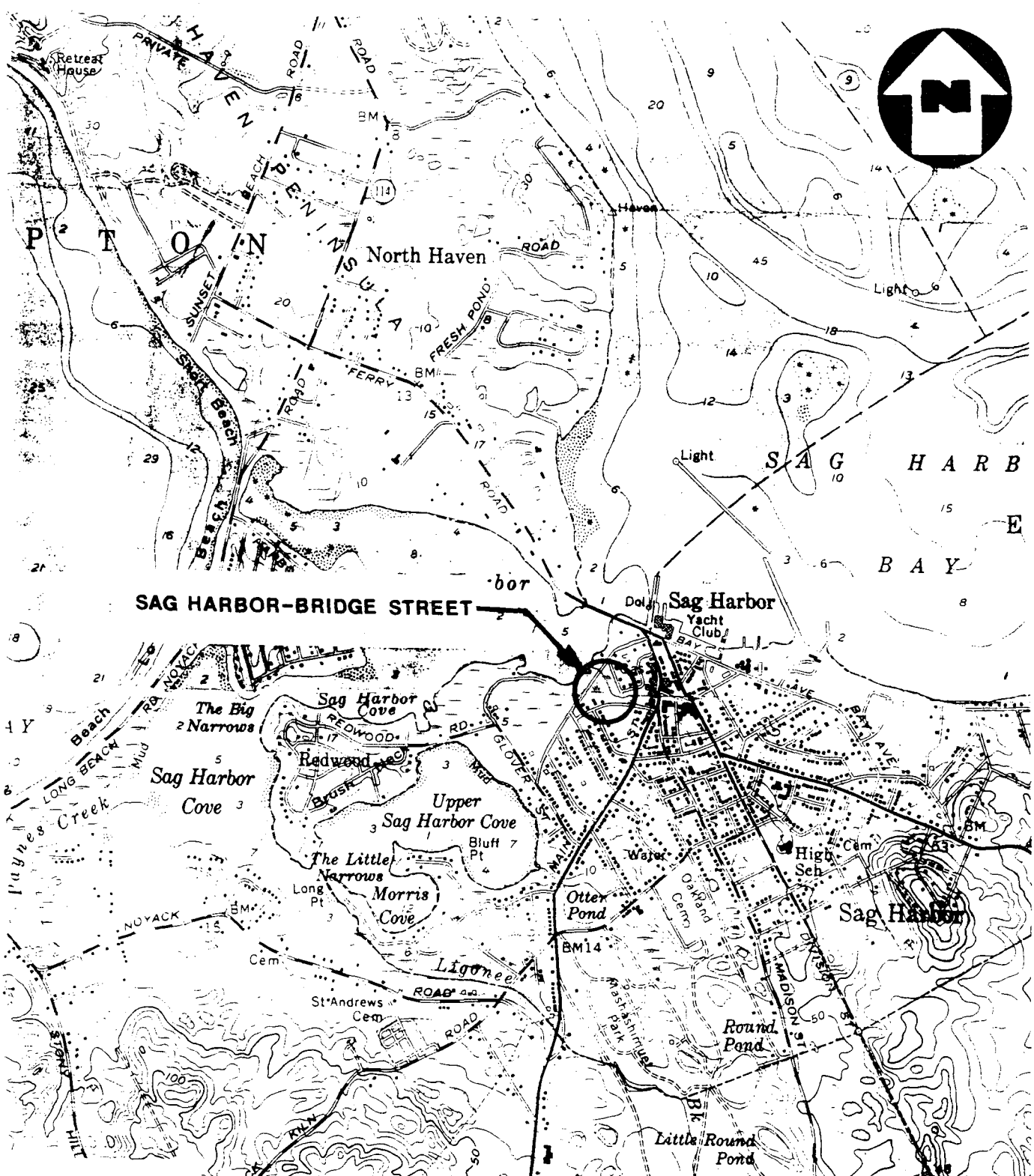
The Sag Harbor - Bridge Street Site is located on Bridge Street between Long Island Avenue and Rose Street and is in a residential/commercial area near the lower downtown area of Sag Harbor. The exact boundaries of the site are not defined. However, located on Bridge Street are a Long Island Lighting Company (LILCO) gas storage area, the Long Island Fisherman building, which was a former printing facility, and several private residences. Figure 1 is a site location map, and Figures 2 through 4 are site maps.

Due to soil, groundwater, and surface water contamination noted on Bridge Street in 1987, the mayor of Sag Harbor requested that a Superfund investigation be conducted in this vicinity. The responsible parties and sources of the areal contamination are unknown. Potential sources have been identified as an old town gas plant that existed at what is now the LILCO property, and the Long Island Fisherman Printing Facility. There may be other possible unknown sources.

Ref. Nos. 1, 2, 3, 4, 5, 6, 11, 12, 13

1.2 SITE HISTORY

Prior to 1929, a town gas plant was located on Bridge Street. Fuel gas was manufactured from either coal or rosin until LILCO purchased the property that year, installed a pressurized gas holder, and discontinued the gas plant operations. A map depicting approximate locations of the coal gas facilities is presented in Figure 5. Now the LILCO property is used to store and regulate gas supplies A gas storage container and three tanks are located on the property.



(QUAD) SAG HARBOR/GREENPORT, N.Y.

FIGURE 1

SITE LOCATION MAP

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

SCALE: 1"= 2000'

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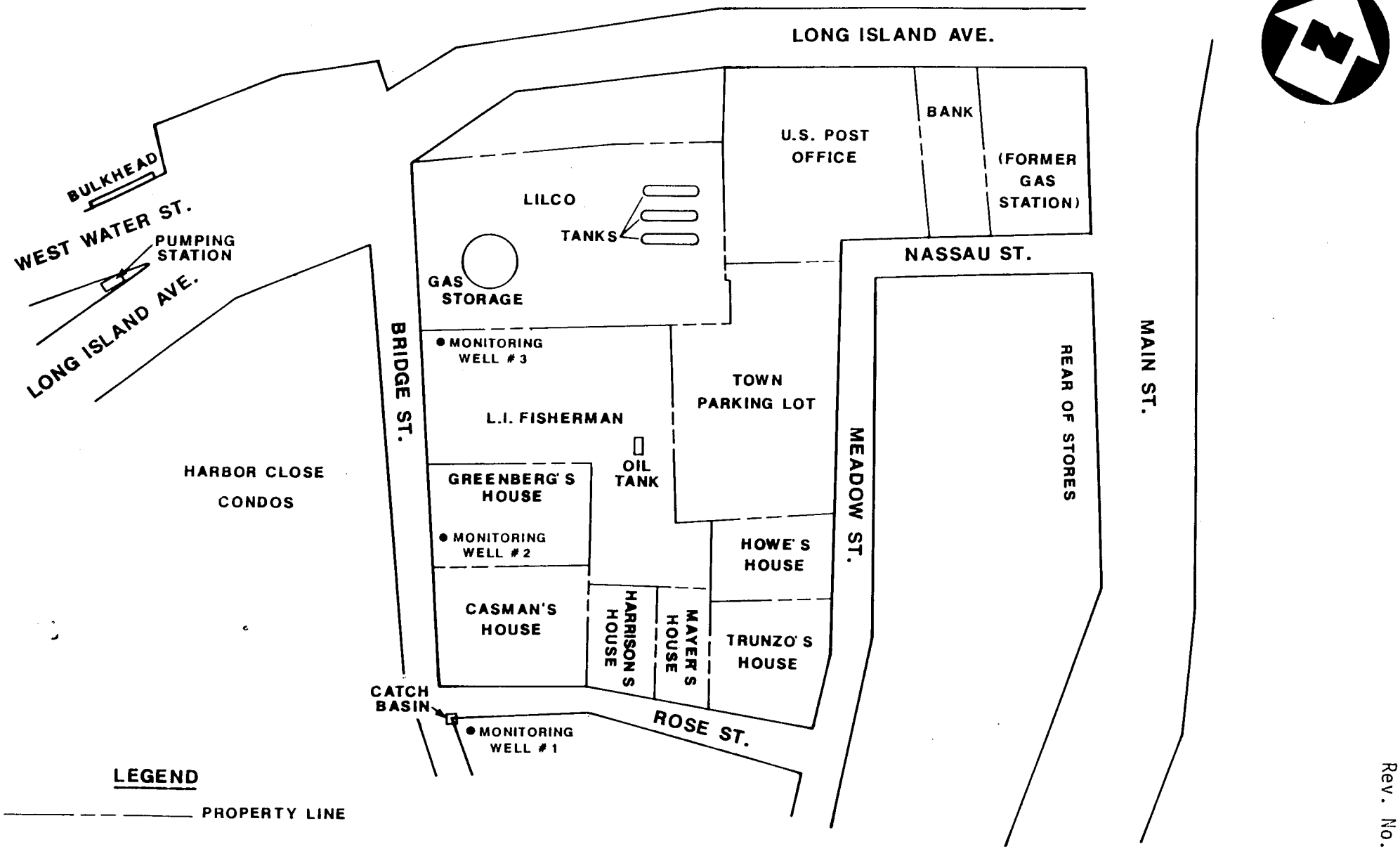

SITE MAP

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

NOT TO SCALE

FIGURE 2

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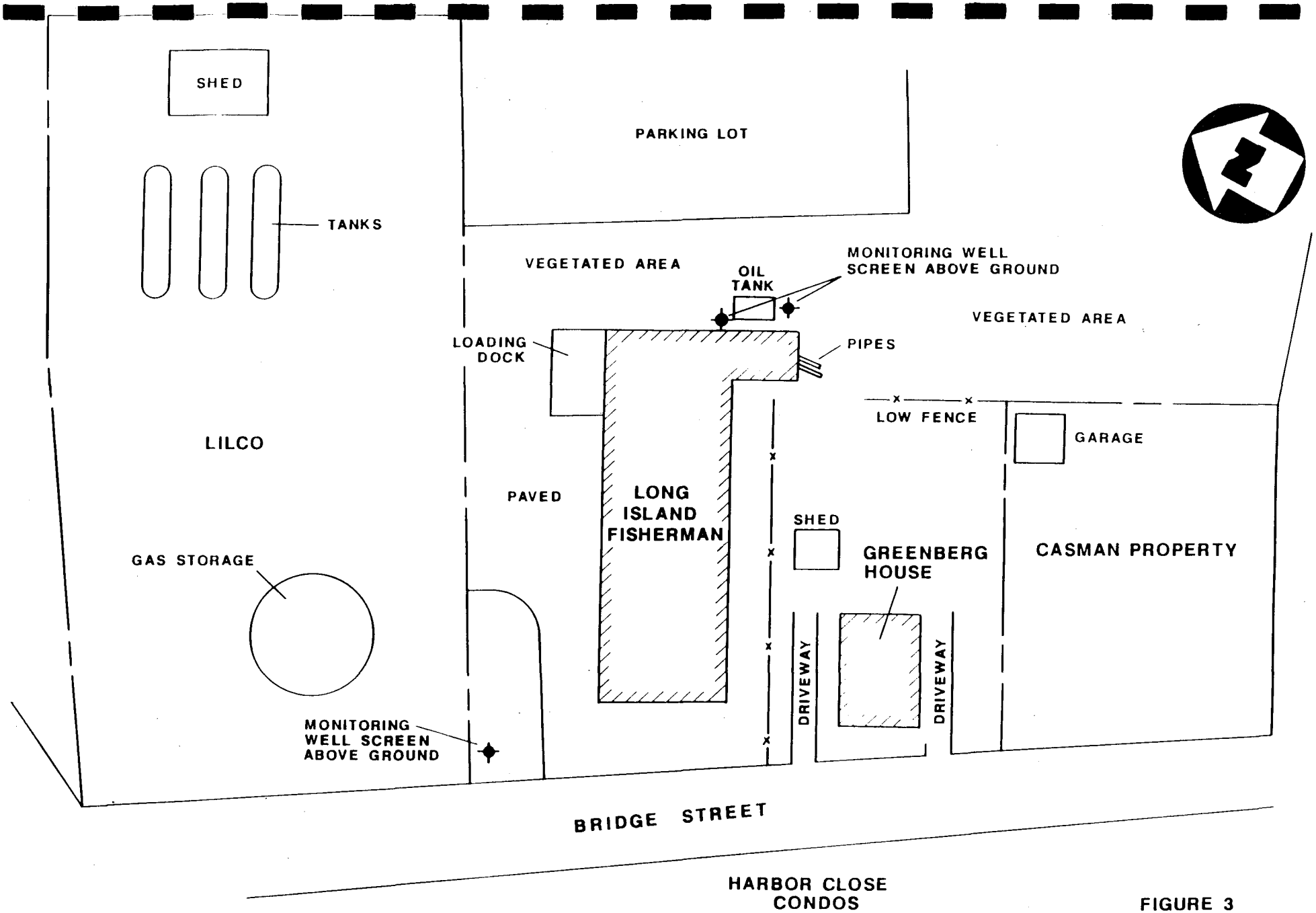

1-4

FIGURE 3

EAST SIDE OF BRIDGE STREET

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

NOT TO SCALE

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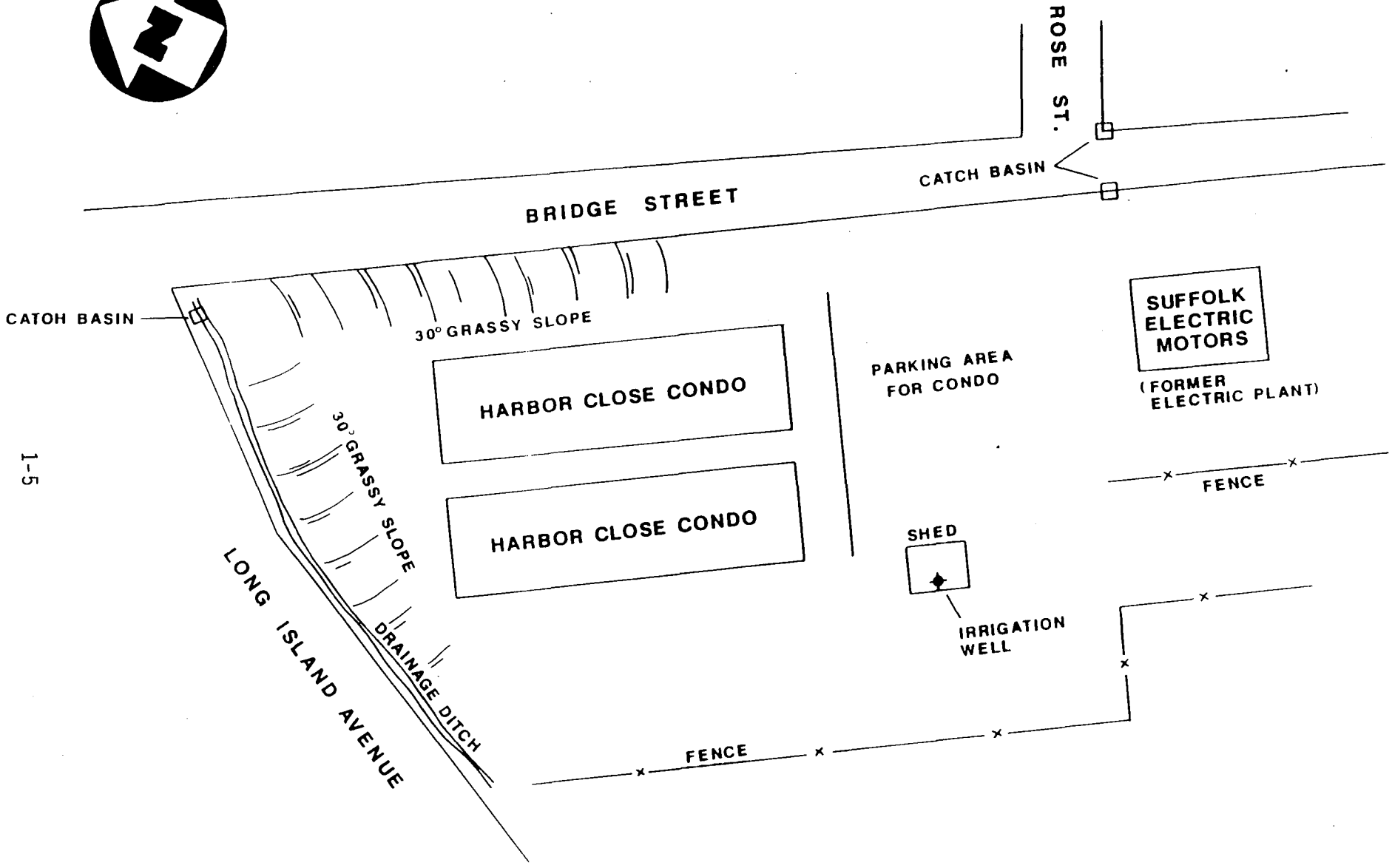

1-5

FIGURE 4

WEST SIDE OF BRIDGE STREET

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

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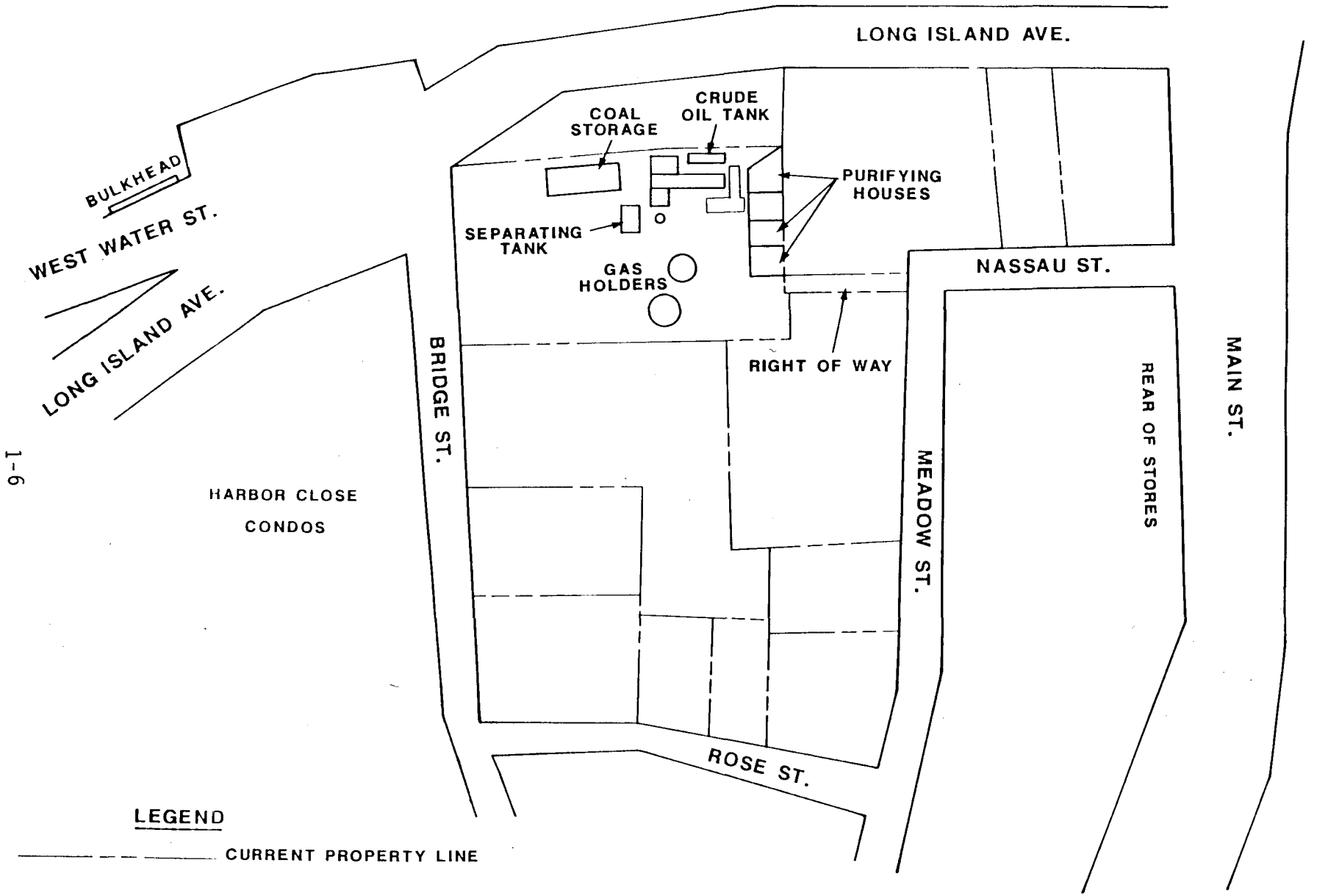

1-6

APPROXIMATE LOCATIONS OF COAL GAS FACILITIES IN 1915

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

NOT TO SCALE

FIGURE 5

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The Long Island Fisherman Printing Facility, which used to print magazines and newspapers, is located adjacent to the LILCO property. In October 1984, an aboveground fuel tank at the rear of the Long Island Fisherman building was found to be leaking Soil samples were subsequently collected from the Long Island Fisherman facility, and analysis showed the presence of No. 2 fuel and a nonfuel-type oil possibly containing PCBs. The spill was remediated by removal of approximately 35 cubic yards of contaminated soil. Monitoring wells were installed, and the case was closed as of April 1986. The building has been unoccupied since June 1988.

In April, May, and June 1987, Storch Associates conducted two environmental investigations for the Village of Sag Harbor along the route of a proposed drainage system. Those investigations were conducted in response to the complaints of Suffolk County Water Authority (SCWA) personnel and because contamination in the vicinity of Bridge Street was suspected due to the tank spill. Soil, groundwater, and surface water contamination was noted.

Ref. Nos. 1, 2, 3, 4, 6, 7, 8, 13, 14, 25, 26, 41

1.3 SUMMARY OF PRELIMINARY ASSESSMENT

The Preliminary Assessment (PA) of the Sag Harbor - Bridge Street Site was completed by FIT in November 1988. The PA encompassed a New York State Department of Environmental Conservation (NYSDEC) file search, background data collection, an off-site reconnaissance, and target identification. The PA report is included as an attachment to this report.

Source/Waste Types: The source and extent of the contamination were unidentified in the PA, but some potential sources were identified as an oil spill at the Long Island Fisherman Printing facility, electrical transformers on the LILCO property, and waste disposals of an old town gas plant (now the LILCO property). Other potential sources of contamination may have existed, as solvents, various volatile organics, and metals were detected in residential wells, soils, and storm drain runoff.

Ref. Nos. 3, 4, 7, 12, 13, 25, 26

Air Pathway: HNu readings above background were noted during the environmental investigations by Storch Associates. A large area of subsurface soil contamination is suspected, and some of the compounds detected in the soil and monitoring well samples have high gaseous mobility. Targets identified in the PA include wetlands within the 4-mile radius from Bridge Street, and the south end of Bridge Street, which is within the Sag Harbor Historic District.

Ref. Nos. 3, 4, 11, 19, 20, 21, 22, 24

Groundwater Pathway: General information about the hydrogeology in the vicinity of Bridge Street revealed that the aquifers of concern are the upper glacial aquifer and the Magothy aquifer. Both are sole source aquifers and are hydraulically connected. The water table is at or near the surface. A public well, serving most of Sag Harbor, is located 1 mile south of Bridge Street. Private well use within a quarter mile of Bridge Street was identified but not confirmed during the PA.

Ref. Nos. 3, 4, 11, 17, 15, 23

Surface Water Pathway: A catch basin on Bridge Street collects surface water runoff, and the water is pumped into Sag Harbor Cove, about 100 feet from the north end of Bridge Street. Sag Harbor Cove and Bay, Shelter Island Sound, Gardiners Bay, and Noyack Bay are all within 15 downstream miles of the site, and they are used for boating and commercial and recreational fishing. There are many nationally designated wetland areas within 15 downstream miles of Bridge Street. Also, Bridge Street is located in a 100-year flood zone.

Ref. Nos. 4, 7, 18, 35, 37

On-Site Pathway: The boundaries of the site were not defined, and therefore, the on-site population and barriers to access were not identified during the PA. The nearest residence to where contamination was noted by Storch Associates, is less than 100 feet, and residents in the vicinity of Bridge and Rose Streets were informed to take caution in the event of encountering any suspicious appearances or odors when doing any type of soil excavation.

Ref. Nos. 3, 4, 5, 11, 13

1.4 SUMMARY OF ON-SITE RECONNAISSANCE

On November 10, 1988, an on-site reconnaissance was conducted by FIT to identify sampling locations and to collect nonsampling data. The following personnel performed the recon:

Site Manager - Deborah Cohen
Site Safety Officer - Laura LaForge
Surveillance - Rich Pagano

The following observations were made:

Long Island Fisherman. The monitoring wells on the property were screened above the ground surface and left unlocked. The oil tank at the rear of the building appeared to have leaked, and the soil nearby looked stained. A window on the south side of the building was covered with a hardened gray substance that has the appearance of a sludgelike emission from that window. Pipes protruding from the building, also on the south side, appeared to be draining a liquid from their open ends. The standing water around the pipes was a rusty color.

LILCO. Storage of transformers was not observed, and the ones used on their utility poles were not PCB transformers.

Greenberg Property. This house, adjacent to Long Island Fisherman, has a backyard that is separated from the Long Island Fisherman property by a low, discontinuous fence. Two children under 7 years old and 3 adults live in the Greenberg house.

Harbor Close Condominiums. An irrigation well, used to water the lawn, was observed. Drinking water for the residents of the condominium is obtained from the public supply. There are approximately 64 adults and no children living in the complex. Adjacent to the condominiums, to the south, there was an electric company/plant, which may be another possible source of contamination. The sign on the building said Suffolk Electric Motors.

Other observations made during the reconnaissance pertained to the drainage problem on Bridge Street. The same rusty color that was observed at Long Island Fisherman was observed in the water on Bridge Street and in the water coming out of the weep holes on the curb on Rose Street. The water was draining towards the catch basin. In addition, local residents claimed that water is often seen draining south on the road surface toward the catch basins on the corner of Rose and Bridge Streets.

The wells at the Mayer, Howe, and Harrison residences are no longer in service, and the field team was not able to locate them. The nearest private well is on Meadowlark Lane. It was discovered that the homes on Meadowlark Lane are in the process of being hooked up to the public supply. One residence will retain its private well for drinking water.

No readings above background were detected on the OVA or HNu throughout the reconnaissance.

Ref. No. 6

1.5 OBJECTIVES OF THE SCREENING SITE INSPECTION

A screening site inspection (SSI) is designed to characterize and evaluate the potential risks associated with a hazardous waste control problem at a site. The major objectives of the SSI are to verify and substantiate data collected during the PA, and to characterize the site and its environs by collecting physical environmental samples for analysis to determine the presence of and to estimate the extent of hazardous substances. Through this process, sufficient information is developed to support a management decision as to whether a site should proceed to a listing site inspection (LSI), be referred to other appropriate authorities (e.g., Resource Conservation and Recovery Act (RCRA), States, Surface Coal Mining Reclamation Act (SCMRA), etc.), or be recommended for "No Further Remedial Action Planned".

The PA of Sag Harbor - Bridge Street determined that all pathways were of concern, with the onsite exposure being the most significant pathway. Nonsampling and sampling data were collected during the SSI to further determine possible sources of contamination, to identify specific areas of contamination, and to determine targets with emphasis on onsite resident population.

1.6 PROJECT MANAGEMENT/KEY PERSONNEL

The FIT Site Manager for this investigation is Deborah Cohen. The Site Manager's responsibilities include securing site access clearance, directing and overseeing all on-site and off-site activities, documenting and overseeing the management of all samples collected, and writing all deliverable reports.

The FIT Project Manager for this investigation is Charles LoBue. The Project Manager oversees the Site Manager and all aspects of the investigation, and functions as the FIT Point of Contact for the field test project committee.

The EPA Points-of-Contact Personnel for this investigation are Jeff Gaal and Sharon Steltz.

1.7 COMMUNITY RELATIONS/COMMUNITY CONCERN

Since contamination at this site involves multiple properties, 13 individual communications were required to gain access to the area estimated to have been affected by contamination. Permission for entry to the LILCO property was obtained through the assistance of the EPA Region 2 Office of Regional Counsel.

The FIT crew used the utmost discretion in conducting the SSI so that public concern was not heightened by the field work. Any public inquiries were referred to Jeff Gaal and Sharon Steltz.

2.0 DATA COLLECTION

During the SSI, nonsampling and limited sampling data were collected. Nonsampling data include site/environs data and desktop data. The overall purpose of the sampling data is to identify and characterize contamination at the site and at potential on-site targets.

2.1 NONSAMPLING DATA

Nonsampling data include desktop data and data collected during both the on-site reconnaissance and the sampling inspection. The nonsampling data requirements are summarized in Table 1.

2.2 SAMPLING DATA

Typically, environmental sampling data are used to identify and document contaminant releases to groundwater and surface water, to characterize waste source constituents, and to document actual contamination at target receptors.

Sag Harbor Bridge Street is a site of areal contamination from several possible sources. Sampling was conducted to identify constituents attributable to the Bridge Street site, to estimate a preliminary extent of the contamination, and to identify residential properties that may possibly be considered onsite targets.

Sampling to document observed release to groundwater was not conducted for the following reasons:

Monitoring wells existing on the Long Island Fisherman property were unuseable because they were left unlocked and were constructed in a manner that would allow surface contamination runoff to enter into them through holes in the casing.

Monitoring wells on Bridge Street were not sampled because sampling would require a subcontract for transport and disposal of the well evacuation water.

The private wells believed to be at homes on Rose and Meadow Street are no longer in service.

However, during subsurface soil sampling, samples were collected at or near the water table.

TABLE 1

NONSAMPLING DATA COLLECTION REQUIREMENTS

Data Requirements	Purpose	Collection Methods
Source/Waste Characteristics		
Determine whether PCB source is LILCO. Identify coal gas disposal area. Determine possible sources for other contaminants including volatile organic and inorganic contaminants.	Verify potential waste sources.	Interview property owners, local officials, and local historians.
Air Pathway		
Obtain population count within one-half mile of Bridge Street.	Verify target population for air pathway.	Drive-by survey.
Groundwater Pathway		
Obtain well logs for monitoring wells on Bridge Street and verify groundwater flow.	Identify local geology.	Contact NYSDEC, Storch Associates, and USGS.
Determine groundwater use within target distance of Bridge Street.	Verify target population for groundwater pathway.	Contact SCWA. Drive-by survey.
Surface Water Pathway		
Field check surface water use. Field check nearest wetlands.	Verify use of surface water and targets.	Visual Inspection.
Obtain more accurate drainage area estimate and evaluate drainage pathway.	Verify potential to release to surface water.	Visual inspection.
Onsite Pathway		
Determine population on Bridge Street.	Verify potential resident/ nearby population targets.	Contact property owners.

Sampling to document an oberved release to surface water was also not conducted for the following reasons:

It would be difficult to attribute contamination noted to the site. Surface water runoff from most of Bridge and Rose Streets drains into the catch basins on Bridge Street.

It is not known whether the drainage system is influenced by tidal movements of Sag Harbor Cove.

Documenting the potential to release to groundwater and surface water was considered to be more feasible in the SSI stage than documenting observed releases.

The sampling inspection was conducted on November 30, 1988 by the following FIT Personnel:

Site Manager - Deborah Cohen
Site Safety Officer - Laura LaForge
Sample Management Officer - Jane Bullis
Sampler - Rich Pagano
Sampler - Ken Roof
Sampler/Decon - John Bulich

Eleven soil samples were collected to characterize constituents of the waste source areas and identify contamination at possible on-site targets. The following three types of soil samples were collected: subsurface composite, surface composite, and surface grab. Table 2 describes the samples, and Figures 6 and 7 display the sampling locations. With the exception of NYFT-S6, all composite subsurface samples were collected at a depth of 2 to 3 feet and were collected to identify waste sources and waste characteristics. NYFT-S6 was a composite subsurface sample collected below the fill soil that was recently laid down on the property at a depth of 1.5 to 2 feet. This sample was collected to identify on-site population; i.e., if the area represented by the soil smple was found to be contaminated, the residents on the property could be counted as on-site population.

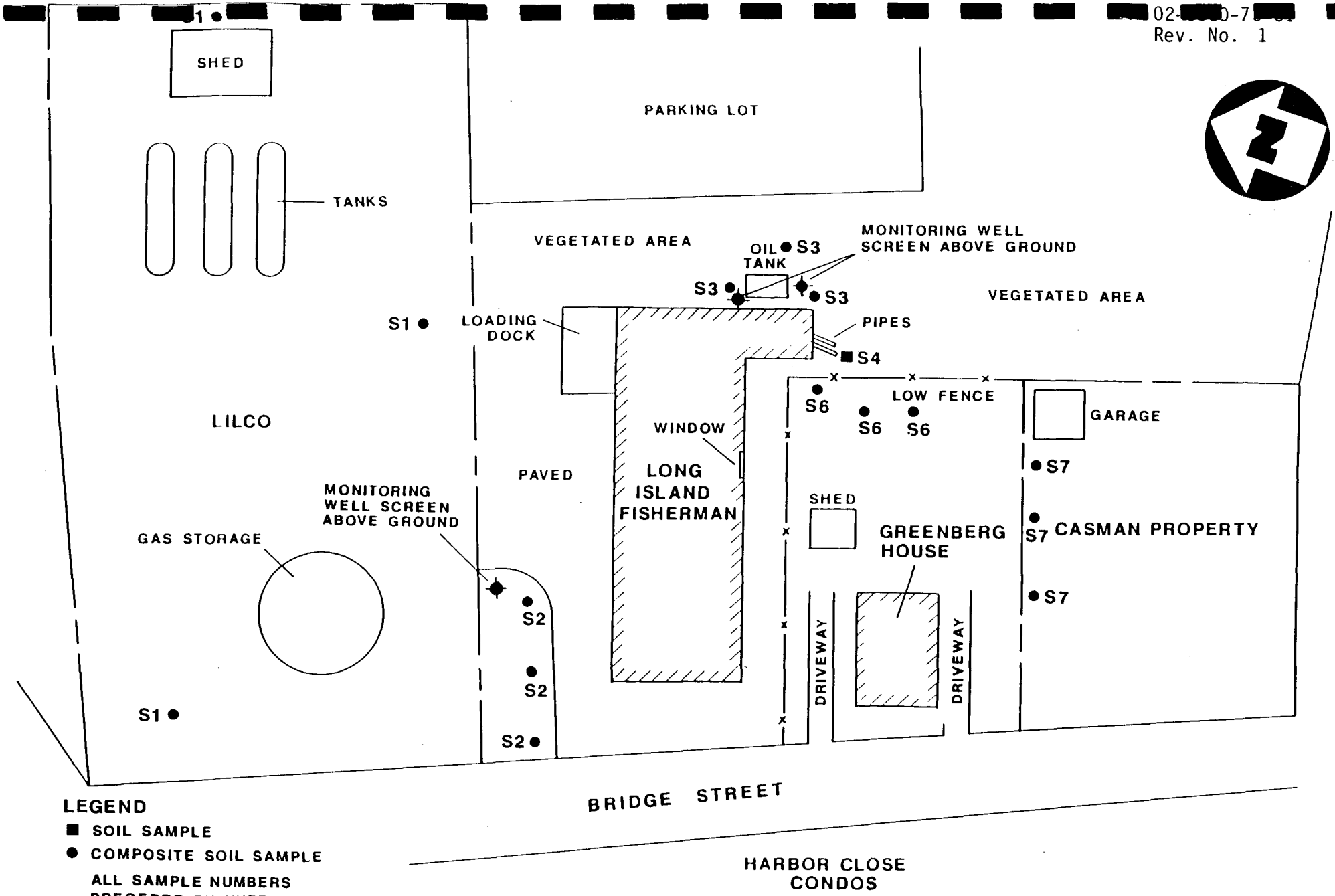
The composite surface samples were collected at a depth of 0 to 6 inches, and with the exception of NYFT-S3, were collected to identify on-site population. NYFT-S3 was collected for waste characterization. NYFT-S12 was collected at a depth of 0 to 12 inches, and its purpose was to identify waste sources and characteristics.

Ref. No. 4, 6, 28

TABLE 2

SAMPLING SUMMARY

Sample	Sample No.	Location	Rationale
Composite, subsurface soil	NYFT-S1	LILCO Property	Waste Characterization
Composite, subsurface soil	NYFT-S2	Long Island Fisherman Property - northwest corner	Waste Characterization
Composite, surface soil	NYFT-S3	Long Island Fisherman Property - east side, near oil tank	Waste Characterization
Surface soil	NYFT-S4	Long Island Fisherman Property - south side, next to pipes	Waste Characterization
Composite, subsurface soil	NYFT-S6	Greenberg Property	On-Site Population
Composite, surface soil	NYFT-S7	Casman Property	On-Site Population
Composite, surface soil	NYFT-S8	Harbor Close Condo - east side	On-Site Population
Composite, surface soil	NYFT-S9	Harbor Close Condo - south side	On-Site Population
Composite, subsurface soil	NYFT-S10	Harbor Close Condo - southern border	Waste Characterization
Composite, subsurface soil	NYFT-S11	Same location as NYFT-S10	Waste Characterization
Surface soil	NYFT-S12	Harbor Close Condo - drainage pipe, southwest corner	Waste Characterization



LEGEND

- ■ SOIL SAMPLE
- ● COMPOSITE SOIL SAMPLE

ALL SAMPLE NUMBERS PRECEDED BY NYFT

SAMPLE LOCATION MAP

EAST SIDE OF BRIDGE STREET

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

NOT TO SCALE

FIGURE 6

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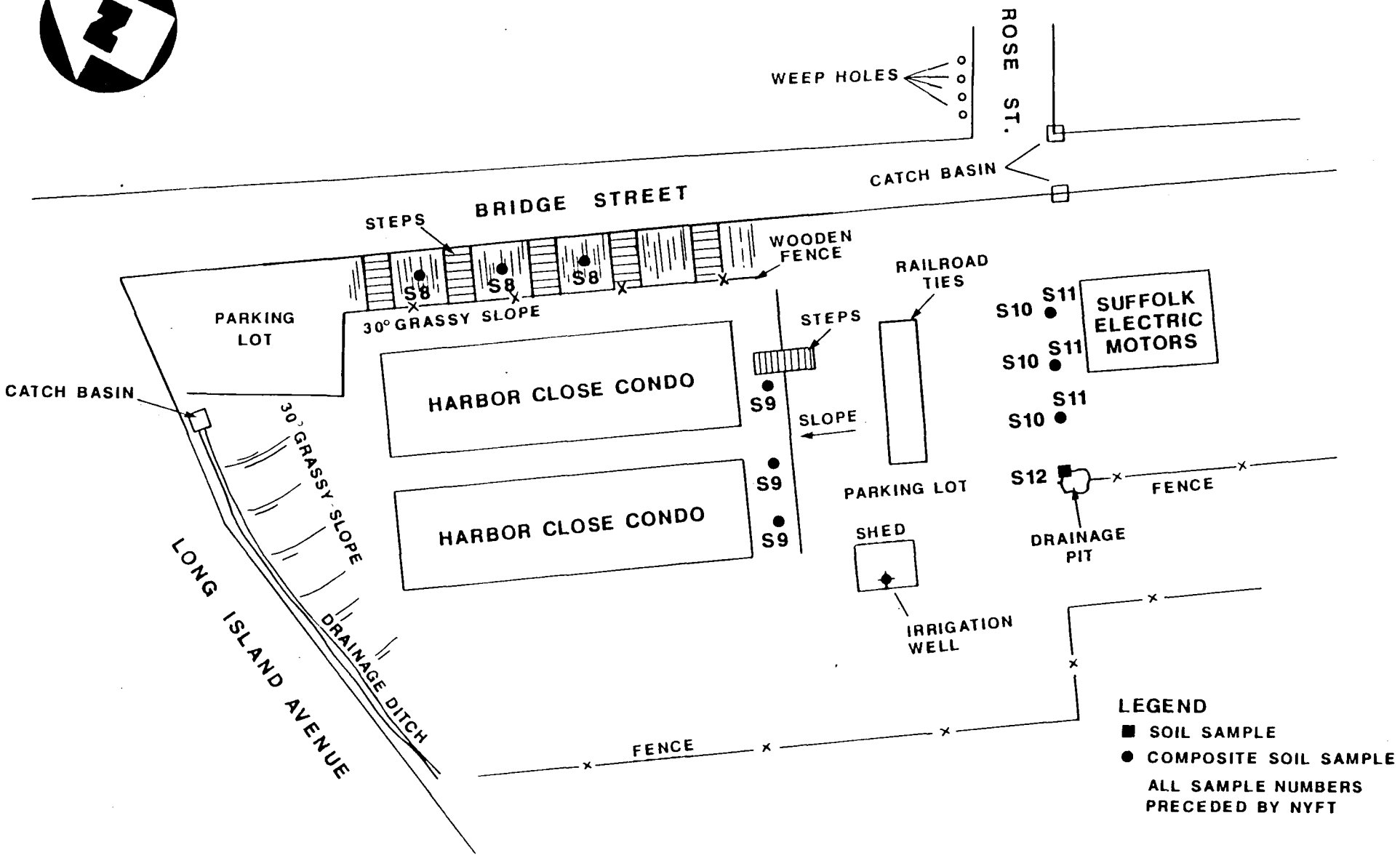

SAMPLE LOCATION MAP

WEST SIDE OF BRIDGE STREET

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

NOT TO SCALE

FIGURE 7

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2.3 SAMPLING PROCEDURES

Sample collection, preservation, QA/QC, and chain of custody procedures were in accordance with the standard operating procedures specified in the NUS Superfund Division Quality Assurance Manual D, January 1987.

Soil/Sediment samples consisted of two 40-mL vials for volatiles, one 8-oz jar for extractables and pesticides/PCBs, and one 8-oz jar for inorganics. Soil samples were collected using dedicated sample collection equipment for each sample location. The volatile fraction was collected first as a grab sample. The soil was then homogenized in a stainless steel bowl for the collection of the nonvolatile fractions.

Aqueous QA/QC samples consisted of two 40-mL vials for volatiles, two 80-oz amber bottles for extractables and pesticides/PCBs, and two 1-liter polyethylene bottle for inorganics. The volatile fraction was collected first, followed by the nonvolatile fractions, by using dedicated sample collection equipment for each sample location.

For the Sag Harbor-Bridge Street Site, composite soil samples consisted of three or four sublocations. The volatile fraction was collected as a grab sample at one of the sublocations. After collection of the volatile fraction, soil from each sublocation was homogenized in a stainless steel bowl for the collection of the nonvolatile fractions. Three rinsate blanks (trowel, bowl, and auger) were collected for each type of sample collection equipment used. The trip blank consisted of two 40 mL vials for volatile analysis only.

All aqueous samples collected for volatile organic analysis, in 40-mL vials, were preserved with 6 Molar hydrochloric acid (HCl); those for inorganic analysis, collected in 1-liter polyethylene bottles, were preserved with nitric acid (HNO_3). Sufficient quantities of HCl and HNO_3 were added to adjust the samples to pH 2 or less.

Sampling was conducted for the full Target Compound List (TCL) including cyanide analysis.

3.0 RESULTS

The following sections provide the results of the nonsampling and sampling data during the SSI. These results were used to verify and supplement the PA data.

3.1 NONSAMPLING RESULTS

Source/Waste Characteristics: Property owners in the vicinity of Bridge Street, the local historian, and local officals were interviewed to verify potential waste sources. The following information was obtained:

The only transformers on the LILCO property are the ones on the utility poles, and they are not PCB transformers. The property has not been used as a storage yard for transformers.

The original buildings used when the LILCO property was a town gas plant were torn down sometime in 1987. A map of the layout of the plant when in operation in 1915 shows purifying houses on the north and east borders; gas holders toward the center of the property; an engine room, generator room, and crude oil tank along the north border; and a coal storage area in the northwest corner of the property (See Figure 5).

A railroad used to go down Long Island Avenue. The station was located where the post office now stands, east of LILCO. A picture of Sag Harbor in the 1850s shows the railroad and a gas holding tank used by the old town gas plant. The photo is included in Attachment 1, Exhibit B.

The Long Island Fisherman building was used for printing and typesetting until June 1988. The company published magazines and newspapers. The building is now empty.

It was determined that Suffolk Electric Motors was not an electric plant. It has been an electric motor repair shop since some time in the 1970s.

Ref. Nos. 6, 14, 31, 38

Air Pathway: A drive-by survey was conducted on November 10, 1988. Within a quarter mile from Bridge Street, 151 houses and an 8-unit condominium were counted. Between one-quarter mile and one-half mile, 316 houses and a condominum including approximately 50 units were counted. The 76 people living on Bridge Street between Long Island Avenue and Rose Street were not included in this count.

Ref. Nos 6, 27, 29, 33

Groundwater Pathway: Well logs for the monitoring wells installed by the NYSDEC on the Long Island Fisherman property were unavailable. There are no well logs for the wells installed by Storch Associates; however, the well depths and water levels for these wells are available.

Groundwater flow was verified by the USGS to be tidal in Sag Harbor. A Suffolk County Water Authority (SCWA) representative was interviewed, and a drive-by survey was conducted to verify groundwater use in Sag Harbor. The public water supply, located about 1 mile south of Bridge Street, consists of one pump station with three wells. This water supply is not interconnected with any other water supply. The SCWA maps showing streets in Sag Harbor did not indicate homes with private wells but did show streets that do not have water mains. A drive-by survey was conducted for those streets within one-half mile from Bridge Street that did not have water mains. For the streets outside of one-half mile, a house count was conducted using the topographic map. The nearest home using a private well was identified on Meadowlark Lane about one-quarter mile southwest of Bridge Street. This was identified during the on-site reconnaissance.

TABLE 3

GROUNDWATER USAGE FOR TARGET POPULATION

Distance from Bridge Street:	Houses Served:		
	By Private Well		
(mile)	Sag Harbor	North Haven	By SCWA Well
0-$\frac{1}{4}$	12	---	---
$\frac{1}{4}$-$\frac{1}{2}$	19	---	---
$\frac{1}{2}$-1	15	42	---
1-2	153	117	1300
2-3	12	45	---
3-4	33	---	---

Ref. Nos. 4, 6, 9, 30, 32, 37

Surface Water Pathway: Sag Harbor Cove and Bay are marine environments and are connected to Gardiners Bay, which opens up into Long Island Sound and the Atlantic Ocean. Sag Harbor Cove and Bay are used for recreational boating and fishing as well as commercial fishing. Boat docks were noted along West Water Street near Bridge Street, and the Sag Harbor Yacht club is approximately one-quarter mile to the east. Surface water is not used for drinking as confirmed by SCWA. Wetlands were noted within one-quarter mile of Bridge Street as mapped in the Wetland Inventory Map.

Water was observed flowing south on Bridge Street toward two catch basins located on the east and west corners of Bridge and Rose Streets. A drainage ditch runs along the northern border of Harbor Close Condominiums and drains into a catch basin in the northeast corner of the property. There is also a drainage pit in the southwest corner of the Harbor Close Condominium property. During the site inspection ponding water was observed in the southeast corner of the LILCO property and on the south side of the Long Island Fisherman building. Surface water drainage in the vicinity of Bridge Street is pumped out an outfall pipe into Sag Harbor Cove near the boat docks on West Water Street. The outfall pipe is under water during high tide.

Ref. Nos. 4, 6, 7, 24, 34, 35

Onsite Pathway: The following number of people live on Bridge Street:

Greenberg property - 5 people: 2 children under 7 years old and 3 adults.
Casman property - 7 people, all adults
Harbor Close Condominiums - 64 people, all adults

Ref. Nos. 6, 33

3.2 SAMPLING RESULTS

Sampling results are presented in Tables 4 and 5 and are described in the following section. Table 6 presents a list of selected chemicals detected in samples collected by Storch Associates in 1987 and by NUS Corporation during the SSI.

Source/Waste Characteristics: The sampling results do not clearly indicate specific waste sources. Samples collected at LILCO (S1) and Long Island Fisherman (S2, S3, S4) showed the presence of various polynuclear aromatic hydrocarbons (PAHs) and inorganics. Samples collected at Long Island Fisherman also showed the presence of pesticides. Polychlorinated biphenyls (PCBs), which were suspected to be present in a sample collected on the north side of Long Island Fisherman after the oil spill in 1984, were detected in one sample. This sample (S6) was collected on the Greenberg property. Some contaminants detected in the soil samples are associated with wastes commonly found at town gas plants, and some contaminants are associated with fuel oils (see Table 6). Sources of the polychlorinated biphenyls (PCBs), pesticides, and various inorganics are unknown.

Ref. Nos. 6, 7, 36, 39, 40, 41

TABLE 4
ORGANIC SAMPLING RESULTS

	LILCO (S1)	LIF: northwest (S2)	LIF: oil tank (S3)	LIF: pipes (S4)
Benzoic acid	270*	160*	99*	450*
Naphthalene	440	460	27*	28*
2-Methylnaphthalene	330*	270*	12*	24*
Acenaphthylene	3900	3800	130*	260*
Acenaphthene	250*	59*	---	24*
Dibenzofuran	390*	---	---	---
Fluorene	1000	590	14*	29*
Phenanthrene	5700	790	54*	67*
Anthracene	1900	1800	34*	120*
Di-n-butyl phthalate	---	---	---	---
Fluoranthene	12000	3900	180*	500*
Pyrene	21000	8100	430	900
Butylbenzyl phthalate	---	---	7*	---
Benzo(a)anthracene	11000	4200	180*	570*

* - Estimated value, compound present below CRDL but above IDL.
All values in ppb.
LIF - Long Island Fisherman.

TABLE 4
ORGANIC SAMPLING RESULTS (cont'd)

	LILCO (S1)	LIF: northwest (S2)	LIF: oil tank (S3)	LIF: pipes (S4)
Chrysene	11000	6000	240*	820
Bis(2-ethylhexyl)phthalate	---	---	550	1700
Di-n-octyl phthalate	---	---	4*	18*
Benzo(b)fluoranthene	12000	6700	270*	550*
Benzo(k)fluoranthene	12000	4100	210*	470*
Benzo(a)pyrene	13000	9100	360*	530*
Indeno(1,2,3-cd)pyrene	12000	7100	290*	520*
Dibenz(a,h)anthracene	3100	1800	64*	110*
Benzo(g,h,i)perylene	18000 / 139 ppm	11000 / 70 ppm	460	770
Dieldrin	---	70**	---	47**
4,4'-DDE	---	260**	14*	190**
4,4,'-DDD	---	260**	120	180**
4,4'-DDT	---	720**	28**	520**
Aroclor-1248	---	---	---	---
Aroclor-1254	---	---	---	---

* - Estimated value, compound present below CRDL but above IDL.
** - Estimated Value.
All values in ppb.
LIF - Long Island Fisherman.

TABLE 4
ORGANIC SAMPLING RESULTS (cont'd)

	Greenberg (S6)	Casman (S7)	HCC (S8)	HCC (S9)	HCC (S10,11)	HCC (S12)
Benzoic acid	170*	210*	---	---	---	46*
Naphthalene	---	---	---	---	---	11*
2-Methylnaphthalene	---	16*	---	---	5*	9*
Acenaphthylene	61*	79*	26*	8*	36*, 23*	62*
Acenaphthene	---	---	---	---	48*, 5*	---
Dibenzofuran	---	16*	---	---	---	---
Fluorene	---	25*	---	---	5*, 6*	
Phenanthrene	81*	340*	---	---	36*	60*
Anthracene	---	73*	---	---	---	33*
Di-n-butyl phthalate	340**	---	---	---	---	---
Fluoranthene	210*	620	110*	45*	150*, 120*	200*
Pyrene	300*	940	140*	55*	250*, 160*	260*
Butylbenzyl phthalate	870	14*	10*	---	---	---
Benzo(a)anthracene	---	380*	---	---	---	---
Chrysene	180*	430*	---	---	180*, 120*	180*

* - Estimated value, compounds present below CRDL but above IDL.
** - Esitmated Value.
All values in ppb.
HCC - Harbor Close Condominiums.

TABLE 4
ORGANIC SAMPLING RESULTS (cont'd)

	Greenberg (S6)	Casman (S7)	HCC (S8)	HCC (S9)	HCC (S10,11)	HCC (S12)
Bis(2-ethylhexyl)phthalate	---	---	---	---	---	---
Di-n-octyl phthalate	---	---	---	3*	---	6*
Benzo(b)fluoranthene	160*	420*	120*	46*	160*, 95*	280*
Benzo(k)fluoranthene	150*	390*	98*	34*	160*, 110*	150*
Benzo(a)pyrene	200*	430*	110*	26*	130*, 89*	200*
Indeno(1,2,3-cd)pyrene	130*	330*	69*	31*	100*, 73*	160*
Dibenz(a,h)anthracene	35*	80*	---	---	28*, 27*	30*
Benzo(g,h,i)perylene	180*	460*	97*	38*	150*, 87*	250*
Dieldrin	---	---	14**	11**	2.7*	6*
4,4'-DDE	---	34	140**	49	14*, 6.8*	26**
4,4'-DDD	---	13*	130**	49	74, 27	420**
4,4'-DDT	---	31**	360**	130**	18**, 12*	45**
Aroclor-1248	1000**	---	---	---	---	---
Aroclor-1254	600**	---	---	---	---	---

* - Estimated value, compound present below CRDL but above IDL.
** - Esitmated Value.
All values in ppb.
HCC - Harbor Close Condominiums.

TABLE 5
INORGANIC SAMPLING RESULTS

	LILCO (S1)	LIF: northwest (S2)	LIF: oil tank (S3)	LIF: pipes (S4)
Aluminum >100,000	3450.0**	2000.0**	2810.0**	3930.0**
Antimony ≤10	---	---	---	---
Arsenic ≤100	15.9	5.7	1.8*	5.3
Barium ≤500	117.0**	23.6*	23.1*	235.0**
Cadmium ≤7	4.2	---	---	4.6
Calcium ≤330,000	5150.0**	690.0*	2040.0**	3730.0**
Chromium ≤2000	---	---	---	---
Cobalt ≤70	3.0*	1.0*	---	---
Copper ≤700	125.00**	---	---	---
Iron >100,000	13800.0**	4650.0**	5250.0**	14300.0**
Lead ≤700	314.0**	23.9**	11.0**	72.2**
Magnesium ≤50,000	2010.0**	327.0*	893.0*	1010.0*
Manganese ≤7000	138.0**	26.3**	85.2**	82.7**
Vanadium ≤500	10.5*	4.7*	5.5*	9.1*
Silver 200 USEPA	---	---	---	24.9**
Zinc ≤3500	666.0**	64.4**	50.5**	123.0**

* - Estimated value, compound present below CRDL but above IDL.
** - Estimated value.
All values in ppm.
LIF - Long Island Fisherman.

TABLE 5 (cont'd)
INORGANIC SAMPLING RESULTS

	Greenberg (S6)	Casman (S7)	HCC (S8)	HCC (S9)	HCC (S10,11)	HCC (S12)
Aluminum > 100,000	1760.0**	4510.0**	11100.0**	6890.0**	3430.0**, 2230.0**	1950.0**
Antimony ≤ 10	---	16.5*	24.6**	17.4**	---	---
Arsenic ≤ 100	2.4*	5.8	63.9	19.1	2.5, 2.0*	1.9*
Barium ≤ 500	730.0**	195.0**	59.3	43.2*	20.2*, 12.5*	19.6*
Cadmium ≤ 7	2.3	4.1	3.8	3.3	---	1.4
Calcium ≤ 330,000	13100.0**	6500.0**	4040.0**	5170.0**	571.0*, 434*	1530.0**
Chromium ≤ 2000	---	---	---	94.6**	---	---
Cobalt ≤ 20	---	3.0*	2.6*	2.1*	---	---
Copper ≤ 700	---	---	69.4**	43.7**	---	---
Iron > 100,000	7530.0**	13000.0**	11400.0**	8820.0**	4870**, 3070**	4120.0**
Lead ≤ 700	325.0**	394.0**	55.9**	12.4**	9.2**, 11.8**	7.0**
Magnesium ≤ 50,000	1210.0*	702.0*	2190.0**	2880.0**	625.0*, 444.0*	526.0*
Manganese < 7000	79.2**	331.0**	90.9**	113.0**	93.4**, 58.6**	62.0**
Silver 200 USEPA	2.5*	---	---	---	---	---
Vanadium ≤ 500	4.0*	13.4*	18.8	13.1	5.4*, 4.3*	9.1*
Zinc ≤ 3500	485.0**	460.0**	58.0**	70.3**	---	51.8**

* - Estimated value, compounds present below CRDL but above IDL.
** - Estimated Value.
All values in ppm.
HCC-Harbor Close Condominiums

TABLE 6

SELECTED CONTAMINANTS DETECTED ON BRIDGE STREET

Characteristic Compounds Found In Manufactured Gas Plant Tars

- Benzene (s,gw, fo)
- Toluene (s,gw, fo)
- Xylenes (s,fo)
- Phenol (gw,fo)
- Naphthalene (ss,gw,fo)
- Methylnaphthalenes (ss,gw,fo)
- Dimethylnaphthalenes (gw)
- Acenaphthene (ss,gw,fo)
- Fluoranthene (ss,gw)
- Anthracene (ss,fo)
- Phenanthrene (ss,gw,fo)
- Pyrene (ss,gw)
- Chrysene (ss)
- Benzo(a)anthracene (ss)
- Benzo(k)fluoranthene (ss)
- Benzo(a)pyrene (ss)
- Benzo(g,h,i)perylene (ss)
- Dibenz(a,h)anthracene (ss)

Additional Compounds (not associated with manufactured gas plant tars)

- Benzoic acid (ss,fo)
- Ethylbenzene (s,gw,fo)
- 4,4'-DDE (ss,s)
- 4,4'-DDT (ss,s)
- Styrene (s)
- Bis(2-ethylhexyl)phthalate (ss,gw,sw)
- Copper (ss,gw)
- Lead (ss,gw,sw)
- Zinc (ss,gw,sw)
- Arsenic (ss,gw,sw)
- Cyanide (gw)

Aroclor 1248, 1255 (SG)

ss - detected in soil samples from the SSI on Sag Harbor-Bridge Street (See Tables 4 and 5)
s - detected in soil samples from Storch Associates investigation (Ref. 3)
gw - detected in groundwater samples from Storch Associates investigation (Ref. 4)
sw - detected in surface water samples from Storch Associates investigation (Ref. 4)
fo - identified in fuel oils (Ref. 40)

Groundwater Pathway: Groundwater samples were not collected. Soil samples S1, S2, S3, S4, S6, and S7 were collected at the water table. Various PAHs, pesticides, and various inorganics were detected in these samples except for S1. Only PAHs and inorganics were detected in S1. PCBs were detected in S6 only. The contaminants detected in the soil may represent groundwater contamination. Previous groundwater analysis detected many of these contaminants in the groundwater (see Table 6).

Ref. Nos. 3, 4, 6, 36

Surface Water Pathway: Surface water samples were not collected.

Onsite Exposure Pathway: Samples from soil depths of 0 to 2 feet were collected from the Long Island Fisherman property (S3, S4), the Greenberg property (S6), the Casman property (S7), and the Harbor Close Condominium property (S8, S9, S12).

The two samples collected on the Long Island Fisherman property, which were collected near the surface, showed notable concentrations of chrysene, bis(2-ethylhexyl)phthalate and benzo(g,h,i)perylene, as well as estimated concentrations of many PAHs, pesticides, barium, iron, and silver.

Analysis of the soil sample collected from the Greenberg property showed notable concentrations of butylbenzyl phthalate and estimated concentrations of benzoic acid, di-n-butyl phthalate, Aroclor 1248, Aroclor 1254, barium, calcium, lead, and zinc. This soil sample was collected at a depth of 1.5 to 2 feet just below the fill soil the Greenbergs recently laid down.

Analysis of the soil sample collected from the Casman property showed notable concentrations of fluoranthene and pyrene and estimated concentrations of benzoic acid, various PAHs, barium, iron, lead, manganese, and zinc.

Analysis of soil samples collected from the Harbor Close Condominium property showed notable concentrations of arsenic and vanadium and estimated concentrations of DDE, DDD, DDT, aluminum, chromium, copper, and iron. There are also low estimated concentrations of various PAHs. The condominiums use a private well for watering the lawn, and prior to sampling, the lawn had been fertilized.

Ref. Nos. 6, 36

4.0 DISCUSSION OF CHARACTERISTICS AND TARGETS

This section discusses the data and information collected during the SSI that apply to the migration pathways and targets associated with the Sag Harbor-Bridge Street Site. Refer to the PA provided in the appendix for additional background information.

4.1 SOURCE/WASTE CHARACTERISTICS

There is areal soil contamination in the vicinity of Bridge Street. Sources for the contamination and the extent of contamination could not be delineated in the SSI. Estimated property sizes within the SSI inspection are

LILCO = 35,000 ft^2
Long Island Fisherman = 28,850 ft^2
total inspection area = 180,000 ft^2
$\sqsubset$ 4.1 ac

Because the specific origins of hazardous substances may no longer exist and information is lacking on the specific sources that have contributed to the areal contamination, the source and waste quantity would be based on the full areal extent of the existing contamination. The SSI confirmed the presence of prevailing contamination throughout the entire study area. Further analytical information on the full extent of the contamination can facilitate characterizing the magnitude of the problem and perhaps provide estimated levels of specific constituents.

Ref. Nos. 5, 6, 36, 37

4.2 AIR PATHWAY/TARGETS

The air pathway is not a significant pathway. No readings above background were detected on the HNu or OVA. There is a medium potential for contaminants to be released to air. Containment is based on chemicals detected in the soil at depths of less than 6 inches. It is not known whether the covering soil is contaminated. Although there may be resident population, the population within 4 miles of the site is low.

Ref. Nos. 6, 9, 10, 16, 27, 29, 33, 36

4.3 GROUNDWATER PATHWAY/TARGETS

The potential to release to the groundwater is very high, since the water table is at or near the surface and contaminants were detected in soil samples collected at the water table.

The nearest private well is on Meadowlark Lane, less than one-quarter mile southwest of Bridge Street. Most of the residents of Sag Harbor receive their drinking water from the public supply, 1 mile south of Bridge Street, but there are private wells scattered throughout the town. The public water supply wells are not interconnected with other wells. Groundwater is also used for irrigation and commercial and industrial uses.

Information on the on-site geology is needed to document hydraulic connection or discontinuity between the water table aquifer and the aquifer serving the public.

Analytical information showing the presence of contaminants in the aquifer is needed to document an observed release to groundwater.

Ref. Nos. 6. 9, 28, 32, 36, 37

4.4 SURFACE WATER PATHWAY/TARGETS

There is a high likelihood of release to surface water. The site is a few hundred feet from Sag Harbor Cove and is in a flood zone.

Surface water runoff was observed draining into the catch basins on Bridge and Rose Streets. This water, along with water from other catch basins in the area, is pumped out an outfall pipe into Sag Harbor Cove.

Sampling information for the catch basin on Bridge Street, and for water and sediments at the outfall pipe is needed to monitor for surface water release.

Ref.Nos. 4, 6, 7, 34, 35 36, 37

4.5 ONSITE EXPOSURE PATHWAY/TARGETS

This pathway is of most concern. Due to the uncertainty of waste sources and site boundaries, a projected site was determined to be the area of investigation of this SSI. A total of 76 people, including 2 children under 7 years old, live within this area and are possibly resident population.

With the exception of the LILCO property, which is completely fenced in, other properties are easily accessible.

Extended sampling is needed to document background conditions and to observe whether residents of other properties may qualify as resident population.

Ref. Nos. 5, 6, 33, 36

5.0 SUMMARY AND RECOMMENDATIONS

The following section provides a summary of the SSI findings and recommends further action for the site.

5.1 SUMMARY

The Sag Harbor-Bridge Street Site has areal soil contamination. Waste sources and boundaries have not been clearly identified. Sample analysis shows contaminants in the soil and potentially in the groundwater and surface water. Surface water and groundwater samples were not collected during this SSI investigation; however, in previous investigations by Storch Associates groundwater, surface water, and soil contamination were noted. Onsite exposure is of major concern since among the potential resident population there are two children under 7 years old.

5.2 RECOMMENDATION

Based on the PA/SSI results it is recommended that this site receive a medium priority for further evaluation in a Listing Site Inspection (LSI). It is recommended that the following samples or information be collected during the LSI with field work to focus on the following:

- Extent of soil contamination on Bridge Street and 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.

ATTACHMENT 1

EXHIBIT A

PHOTOGRAPH LOG

SAG HARBOR - BRIDGE STREET
SAG HARBOR, NEW YORK

SAG HARBOR - BRIDGE STREET
SAG HARBOR, NEW YORK

Photo Number	Description	Time
1P3	July 14, 1988 View south down Bridge Street. Harbor Close Condominiums are on the right, and LILCO and Long Island Fisherman are on the left.	1400
1P5	July 14, 1988 View north up Bridge Street at the corner of Rose Street.	1410
1P8,9	July 14, 1988 View of the rear of the Long Island Fisherman building; looking northwest.	1420
1P1	November 30, 1988 R. Pagano, K. Roof, and J. Bulich deconning equipment.	0745
1P4	November 30. 1988 Photo showing the first auger hole for NYFT-S2 soil sample collected near the monitoring well in the northwest corner of the Long Island Fisherman Property.	0838
1P2	November 30, 1988 R. Pagano collecting the VOA portion of NYFT-S2 soil sample at the third auger hole.	0835
1P7	November 30, 1988 Photo of the third hole of NYFT-S3 soil sample near the monitoring well that is to the left of the oil tank at the east side of the Long Island Fisherman building.	0937
1P5	November 30, 1988 R. Pagano collecting the VOA portion of NYFT-S3 soil sample at the first hole near the oil tank.	0930
1P8	November 30, 1988 K. Roof collecting NYFT-S4 soil sample near the drainage pipes on the south side of the Long Island Fisherman building.	1000
1P9	November 30, 1988 Photo of the window on the south side of the Long Island Fisherman building with gray material on the sill.	1030
1P11	November 30, 1988 K. Roof collecting the VOA portion of NYFT-S6 soil sample at the second auger hole on the Greenberg property.	1110
1P14	November 30, 1988 K. Roof collecting the VOA portion of NYFT-S1 at the third auger hole on the LILCO property.	1215
1P16	November 30, 1988 R. Pagano collecting NYFT-S7 soil sample on the Casman property.	1310
1P17	November 30, 1988 R. Pagano collecting the VOA portion of NYFT-S8 soil sample on the east side of the Harbor Close Condominium property at the third auger hole.	1420

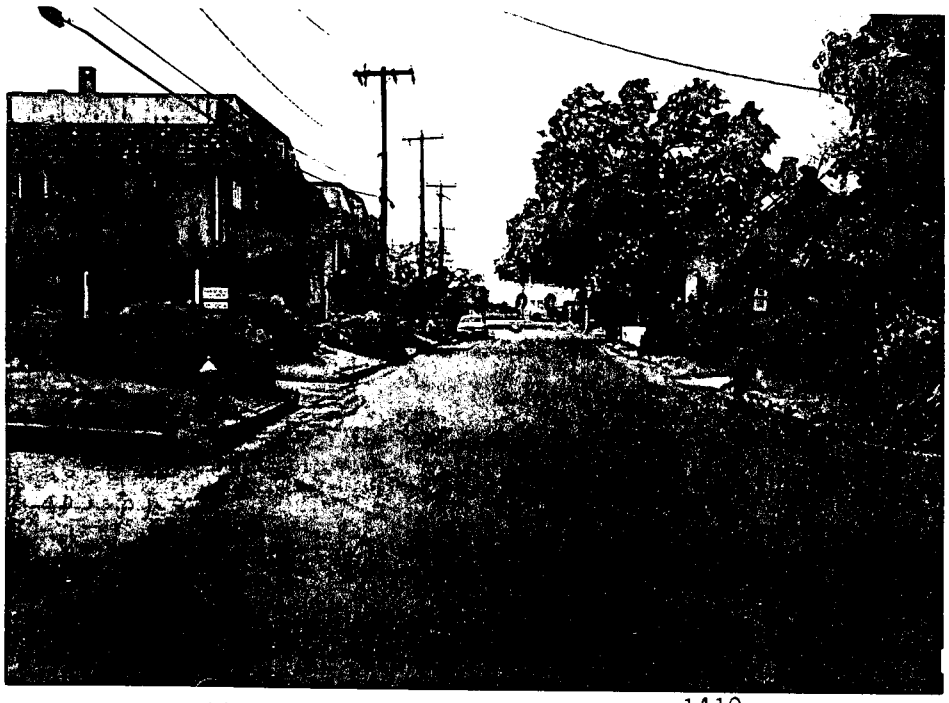
SAG HARBOR - BRIDGE STREET
SAG HARBOR, NEW YORK

Photo number	Description	Time
1P18	November 30, 1988 R. Pagano collecting NYFT-S9 soil sample.	1440
1P19	November 30, 1988 K. Roof collecting the VOA portion of NYFT-S10 soil sample at the third auger hole.	1500
1P20	November 30, 1988 K. Roof collecting NYFT-S11 at the same location as NYFT-S10.	1505
1P21	November 30, 1988 R. Pagano collecting NYFT-S12 soil sample from the drainage pit on the south side of the Harbor Close Condominium property.	1515

Photographs taken July 14, 1988 were taken by D. Hessemer.
Photographs taken November 30, 1988 were taken by D. Cohen.

SAG HARBOR - BRIDGE STREET. SAG HARBOR, NEW YORK

1P3 July 14. 1988 1400
View south down Bridge Street. Harbor Close Condominiums are on the right. and LILCO and Long Island Fisherman are on the left.



1P5 July 14. 1988 1410
View north up Bridge Street at the corner of Rose Street.

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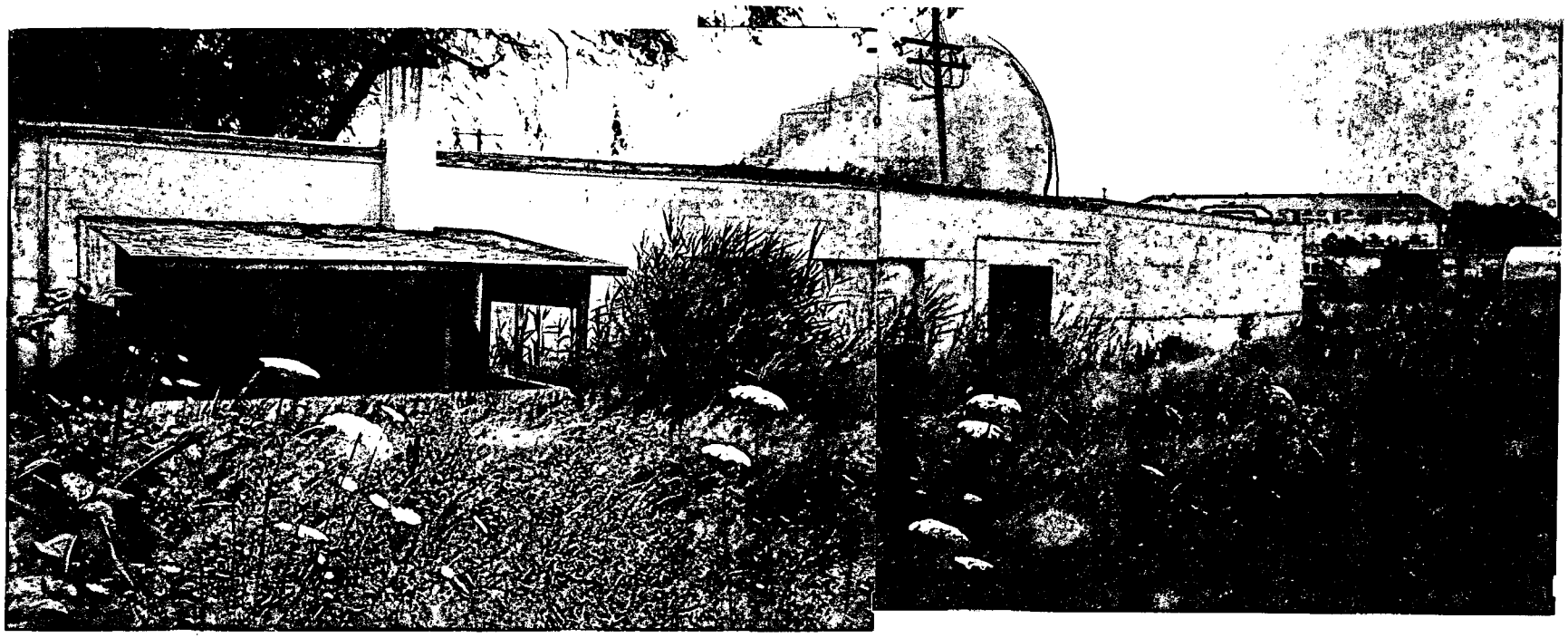
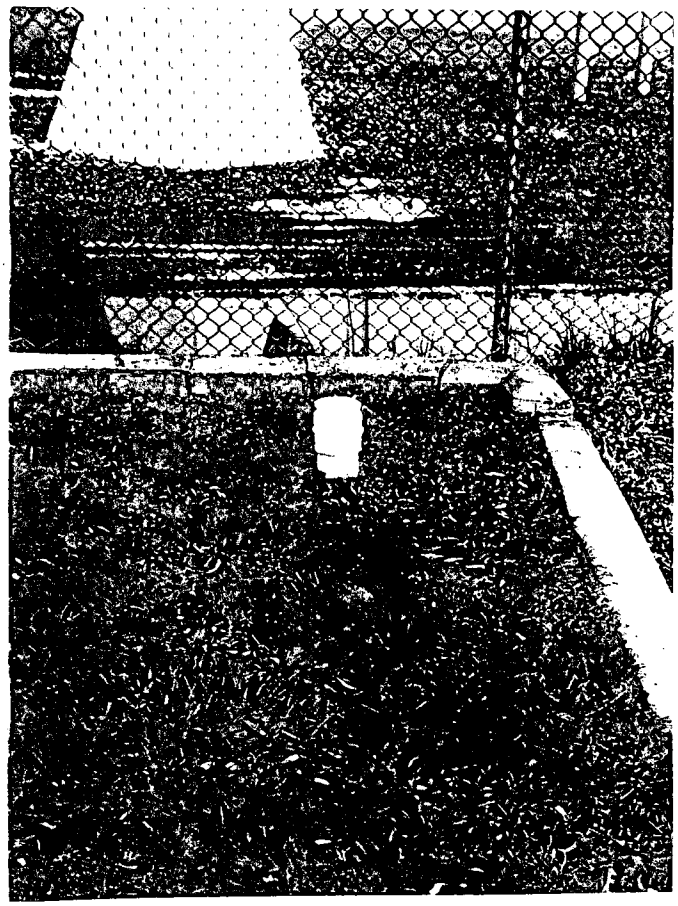


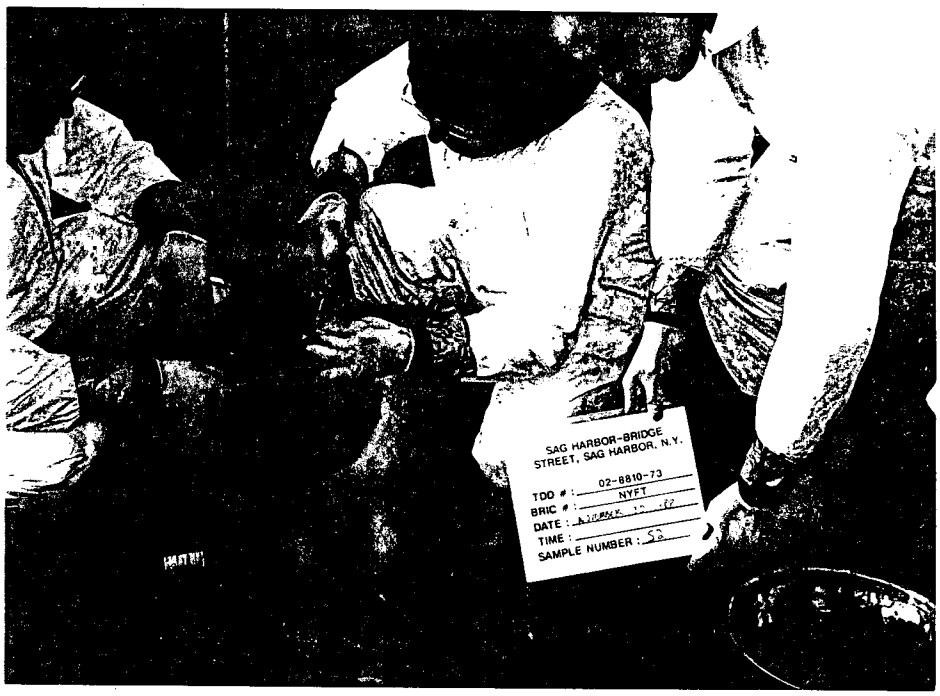
1P8,9 July 14, 1988 1420
View of the rear of the Long Island Fisherman Building; looking northwest.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK

1P1 November 30, 1988 0745
R. Pagano, K. Roof, and J. Bulich deconning equipment.



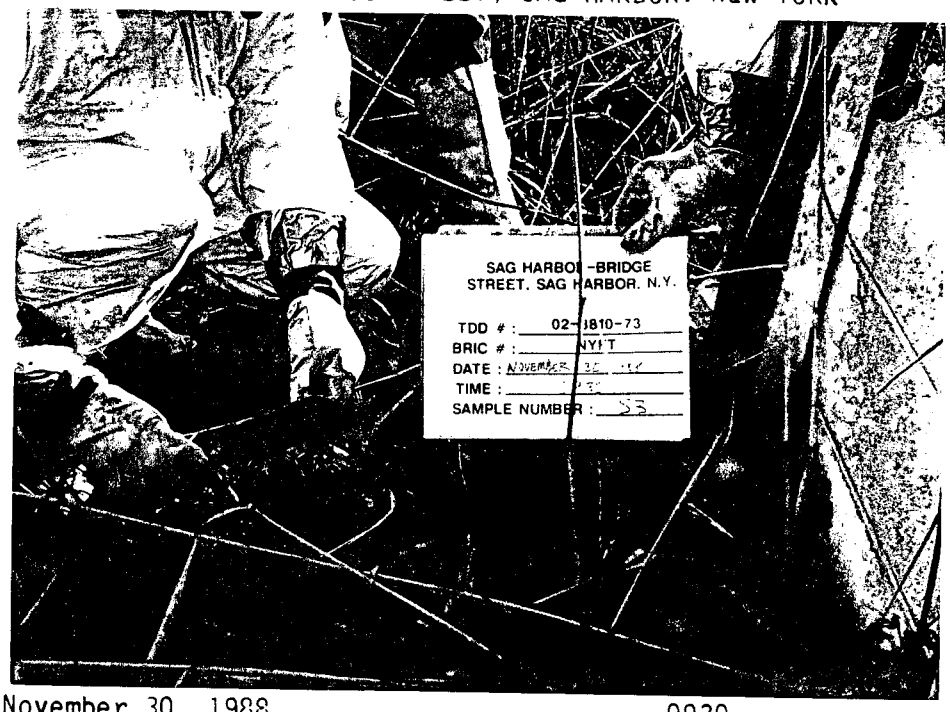
1P4 November 30, 1988 0838
Photo showing the first auger hole for NYFT-S2 soil sample collected near the monitoring well in the northwest corner of the Long Island Fisherman Property.



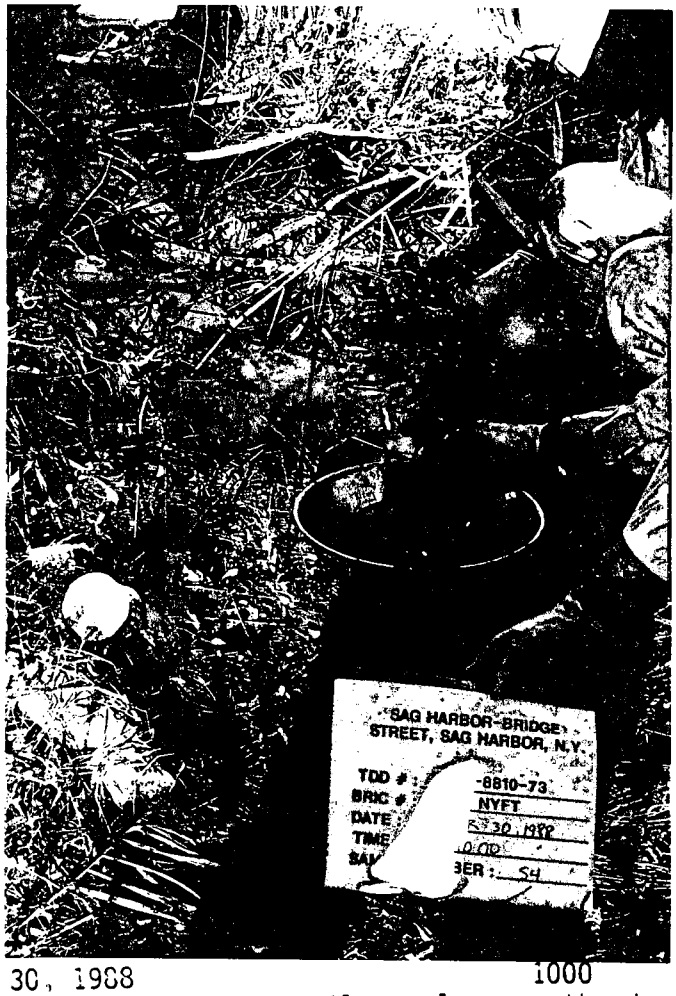
1P2 November 30. 1988 0835
R. Pagano collecting the VOA portion of NYFT S2 soil sample at the third auger hole.

1P7 November 30 1988 0937
Photo of the third hole of NYFT-S3 soil sample near the monitoring well that is to the left of the oil tank at the east side of the Long Island Fisherman building.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK



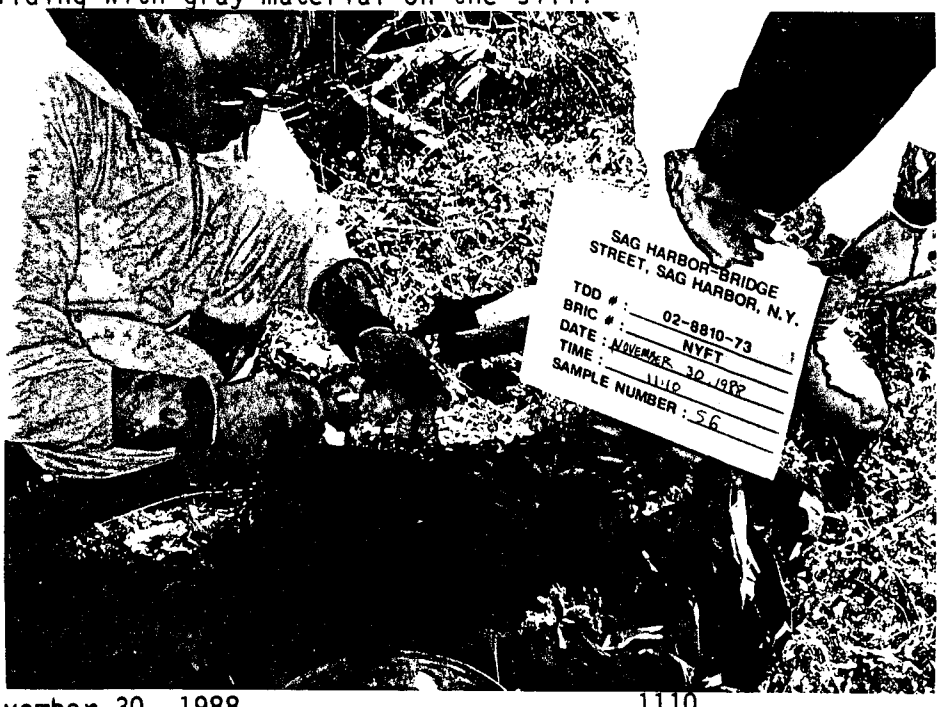
1P5 November 30, 1988 0930
R. Pagano collecting the VOA portion of NYFT-S3 soil sample at the first hole near the oil tank.



1P8 November 30, 1988 1000
K. Roof collecting NYFT-S4 soil sample near the drainage pipes on the south side of the Long Island Fisherman building.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK

1P9 November 30, 1988 1030
Photo of the window on the south side of the Long Island Fisherman building with gray material on the sill.



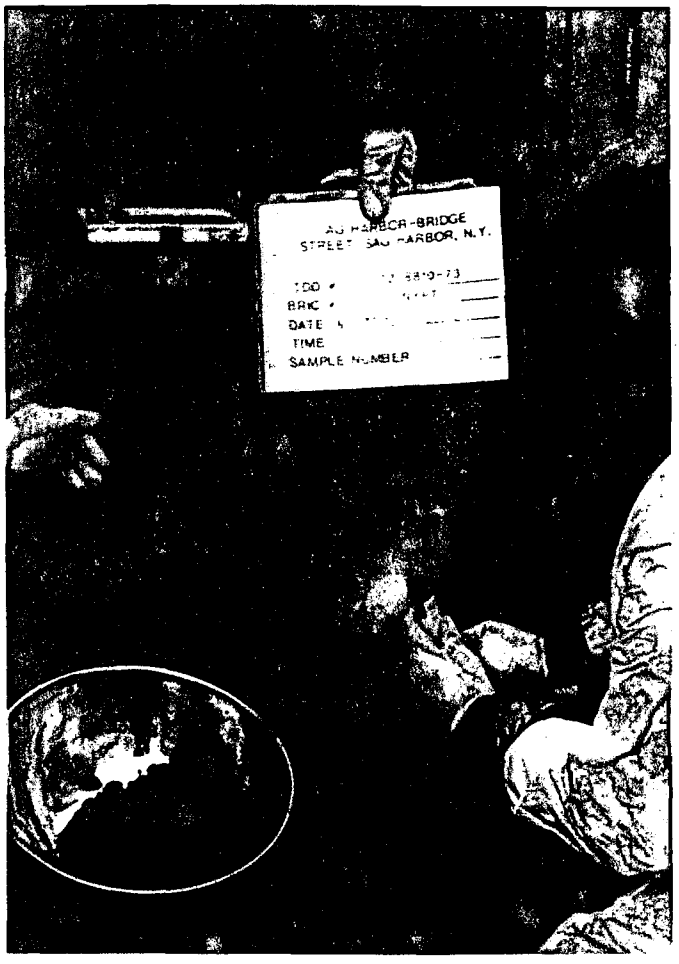
1P11 November 30, 1988 1110
K. Roof collecting the VOA portion of NYFT-S6 soil sample at the second auger hole on the Greenberg property.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK

1P14 November 30, 1988 1215
K. Roof collecting the VOA portion of NYFT-S1 at the third auger hole on the LILCO property.

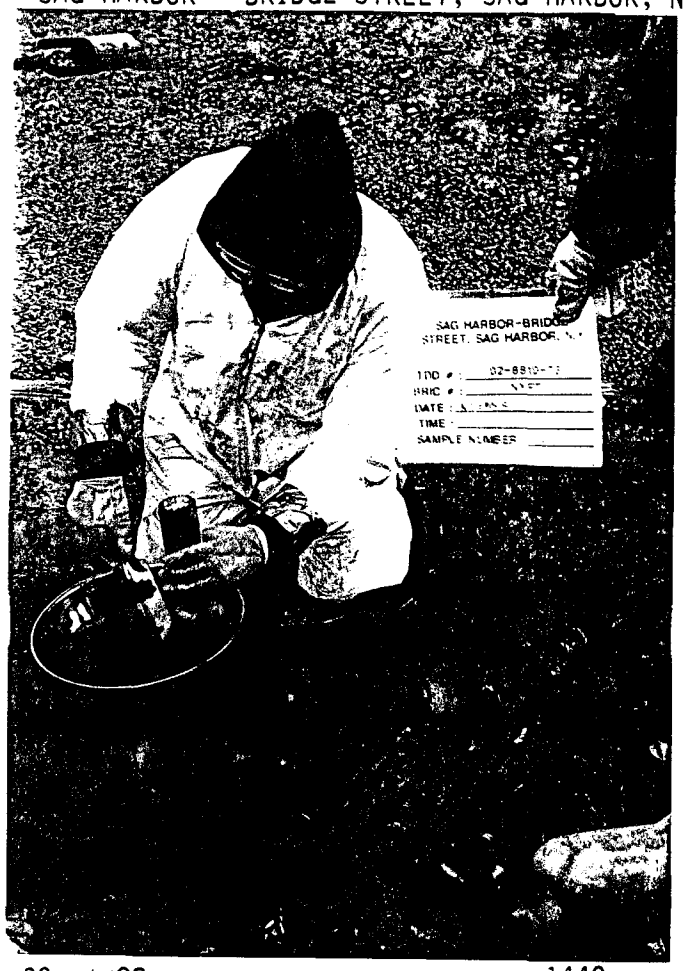
1P16 November 30, 1988 1310
R. Pagano collecting NYFT-S7 soil sample on the Casman property.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK



1P17 November 30, 1988 1420
R. Pagano collecting the VOA portion of NYFT-S8 soil sample on the east side of the Harbor Close Condominium property at the third auger hole.

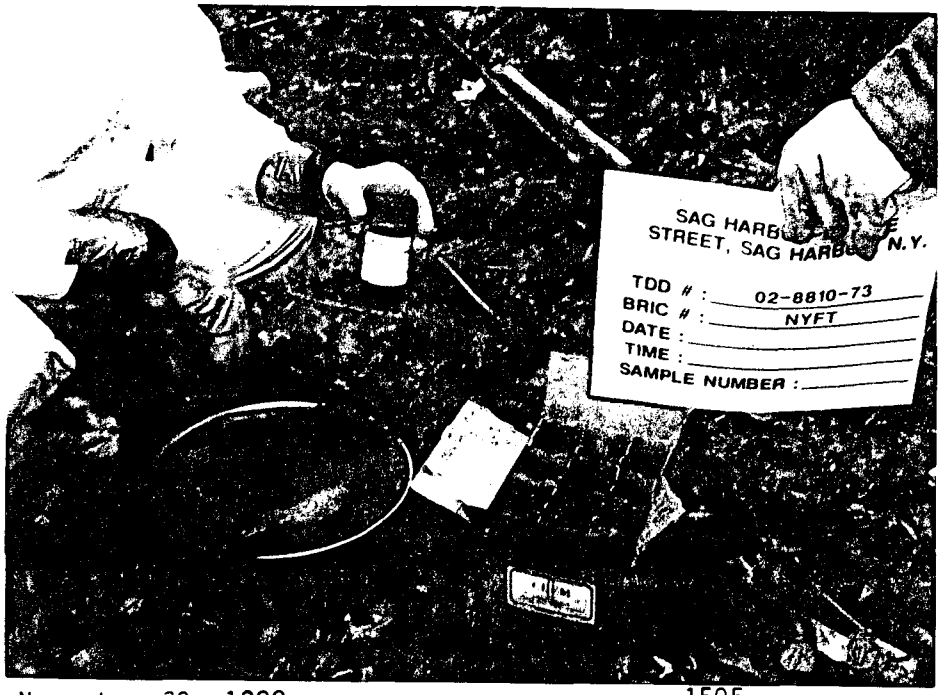
SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK



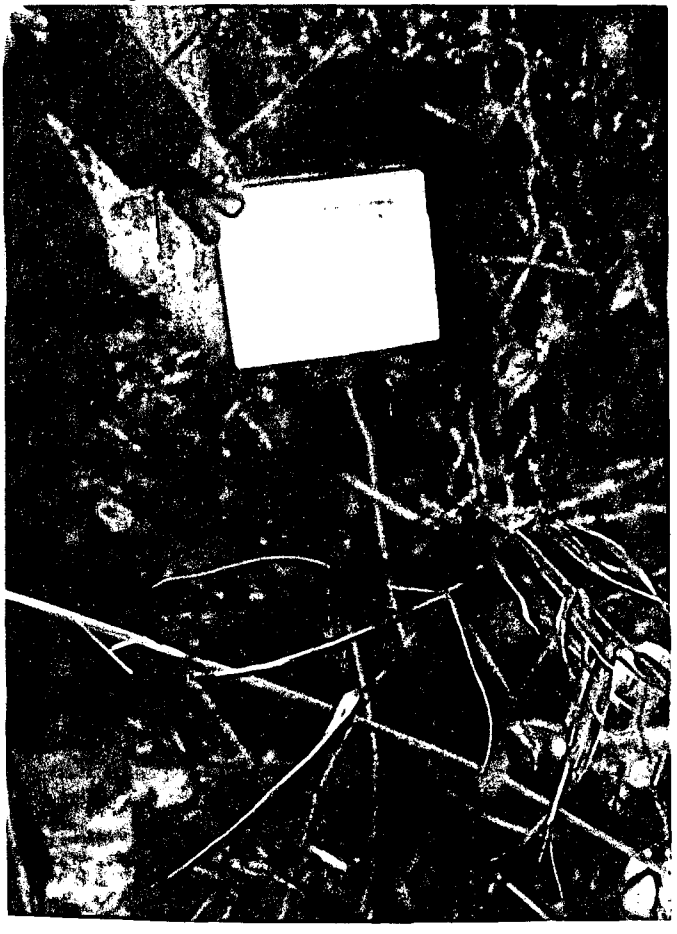
1P18 November 30, 1988 1440
R. Pagano collecting NYFT-S9 soil sample.

1P19 November 30, 1988 1500
K. Roof collecting the VOA portion of NYFT-S10 soil sample at the third auger hole.

SAG HARBOR - BRIDGE STREET, SAG HARBOR, NEW YORK



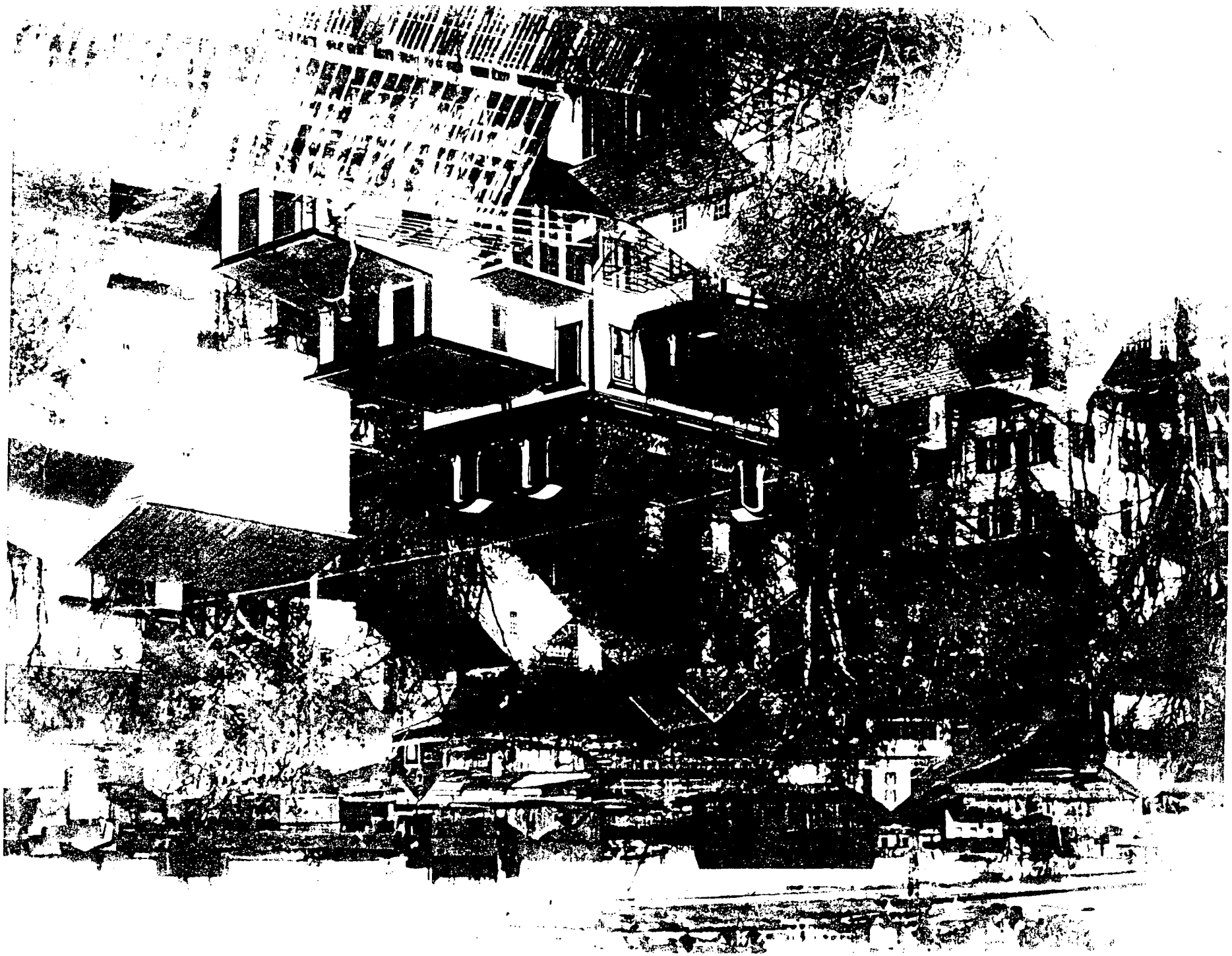
1P20 November 30, 1988 1505
K. Roof collecting NYFT-S11 at the same location as NYFT-S10.



1P21 November 30, 1988 1515
R. Pagano collecting NYFT-S12 soil sample from the drainage pit on the south side of the Harbor Close Condominium property.

EXHIBIT B

PHOTOGRAPH OF SAG HARBOR FROM THE 1850's



ATTACHMENT 2

02-8807-05-PA
REV. NO. 1

FINAL DRAFT PRELIMINARY ASSESSMENT
SAG HARBOR - BRIDGE STREET
SAG HARBOR, NEW YORK

PREPARED UNDER
TECHNICAL DIRECTIVE DOCUMENT NO. 02-8807-05
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

NOVEMBER 10, 1988
(REVISION 1: MARCH 17, 1989)

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

CHARLES LOBUE
PROJECT MANAGER

DEBORAH COHEN
SITE MANAGER

REVIEWED/APPROVED BY:

RONALD M. NAMAN
FIT OFFICE MANAGER

PRELIMINARY ASSESSMENT

DATE: November 4, 1988

PREPARED BY: Deborah Cohen, NUS Corporation, Region 2, FIT, Edison, New Jersey.

SITE: Sag Harbor-Bridge Street
Bridge Street
Village of Sag Harbor, N.Y. 11963

EPA I.D. NO.: NYD986869170

TDD NO.: 02-8807-05

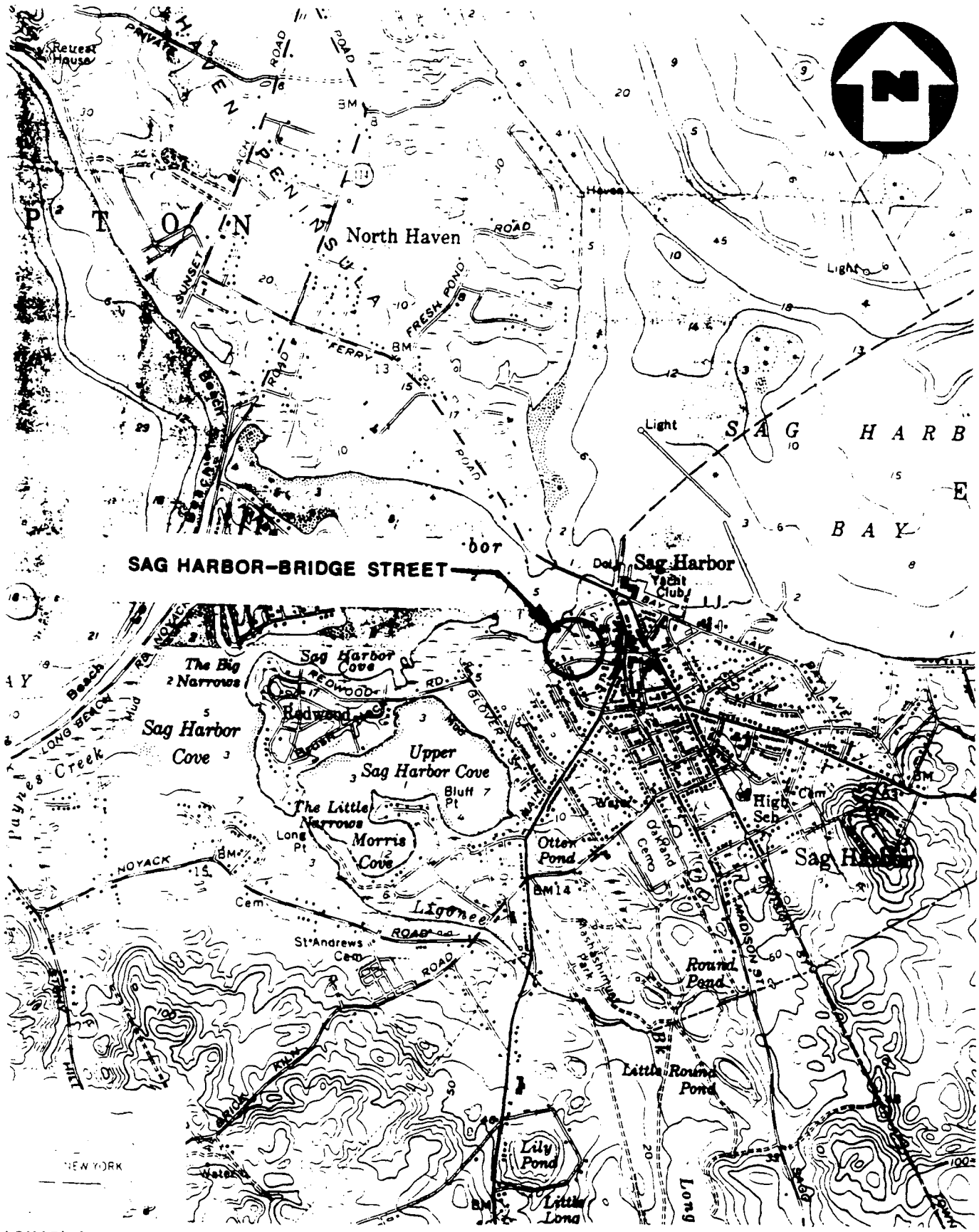
1. Site Information

In 1987, soil and groundwater contamination along Bridge and Rose Streets was noted during investigations conducted by Storch Associates for the Village of Sag Harbor, New York (Ref. 3, 4). The findings of that investigation resulted in health advisories being issued to local residents warning of the possible risk of contaminant exposure when digging into the soil. The parties responsible and sources of the areal contamination are unknown. In a letter to the New York State Department of Environmental Conservation (NYSDEC), the Mayor of Sag Harbor requested a Superfund investigation in the vicinity of Bridge Street to be conducted. The Sag Harbor-Bridge Street Site was entered into the Registry of Inactive Hazardous Waste Disposal Sites in New York State (Ref. 5, 11, 40).

The Sag Harbor-Bridge Street site boundaries are presently not known. Bridge Street is located between Long Island Avenue and Rose Street and is in a residential/commercial area near the lower downtown area of Sag Harbor. The geographic coordinates are 41° 00' 02" N latitude and 72° 17' 56" W longitude. Long Island Lighting Company (LILCO), Long Island Fisherman Printing Facility, Harbor Close Condominium, and several private homes are located on Bridge Street (Ref 6, 14). A site location map and a site map are presented in Figures 1 and 2, respectively.

The purpose of the FIT Preliminary Assessment investigation is to assess the potential hazards posed by the Sag Harbor-Bridge Street site for possible inclusion on the National Priorities List.

02-R007-03-P.
Rev. No. 1



(QUAD) SAG HARBOR/GREENPORT, N.Y.

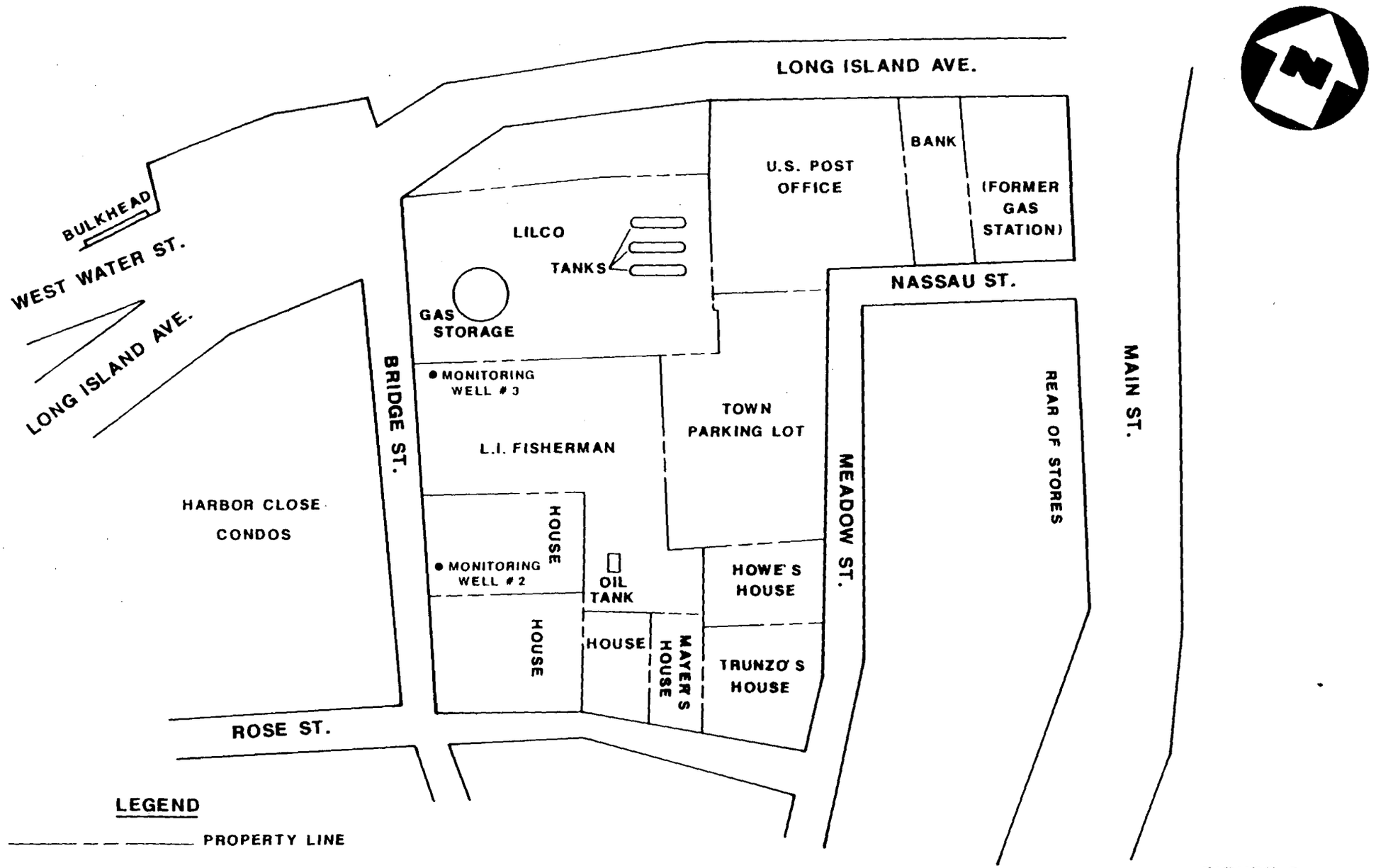
FIGURE 1

SITE LOCATION MAP

SAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

SCALE: 1"= 2000'

NUS CORPORATION



SITE MAP

BAG HARBOR-BRIDGE STREET, SAG HARBOR, N.Y.

(NOT TO SCALE)

FIGURE 2

NUS CORPORATION

02-6807-05-PA
Rev. No. 1

2. Background/Operating History

Prior to 1929, a town gas plant was located on Bridge Street. Fuel gas was manufactured from either coal or rosin until LILCO purchased the property, installed a pressurized gas holder, and discontinued the gas plant operations (Ref. 36). Now the LILCO property is used to store and regulate gas supplies. On the property is a gas storage container and three tanks. It is reported that LILCO has or had electrical transformers (Ref. 14, 35).

The Long Island Fisherman Printing Facility is located adjacent to the LILCO property. In October 1984, an aboveground fuel tank at the rear of the Long Island Fisherman building was found to be leaking. The spill was remediated by removal of approximately 35 cubic yards of contaminated soil. Monitoring wells were installed and the case was closed as of April 1986. At the time of discovery of the fuel tank leak, analysis of soil samples collected from the Long Island Fisherman facility showed the presence of No. 2 fuel and a nonfuel-type oil possibly containing PCBs. No known investigation or remediation of the nonfuel-type oil has occurred, and no information is available about the transformers (Ref. 7, 8, 9, 32, 33, 34, 35).

Sometime after the fuel tank leak, undocumented accounts of skin irritation were voiced by Suffolk County Water Authority (SCWA) construction personnel who had performed a soil excavation on Bridge Street opposite the printing facility (Ref. 1, 3, 5).

In April and May 1987, Storch Associates conducted an initial environmental investigation for the Village of Sag Harbor along the route of a proposed drainage system. That investigation was conducted in response to the complaints of the SCWA personnel and because contamination in the vicinity of Bridge Street was suspected due to the tank spill.

The initial environmental investigation was conducted along the proposed drainage improvement route on Long Island Avenue and Bridge Street. Fourteen boreholes were made, five of which were sampled and analyzed for chemical parameters. Borehole descriptions and sample analyses are presented in Table 1, and a borehole location map is presented in Figure 3. The highest concentration of contamination was found at B 1 adjacent to the printing facility (Ref. 3, 5).

Some additional observations during the initial investigation were a sheen on the surface of a qualitative sample from the monitoring well (MW3) near B 1 and a heavy multicolored oil-type residue left on the bottom of the bailer; the same multicolored oil noticed on the pavement on the south side of Rose Street; a thin film sheen seeping out of weep holes in the curb on Rose Street and migrating across the street toward the street drains; some red discoloration of the soil on Rose Street and near the Long Island Fisherman property (Ref. 3).

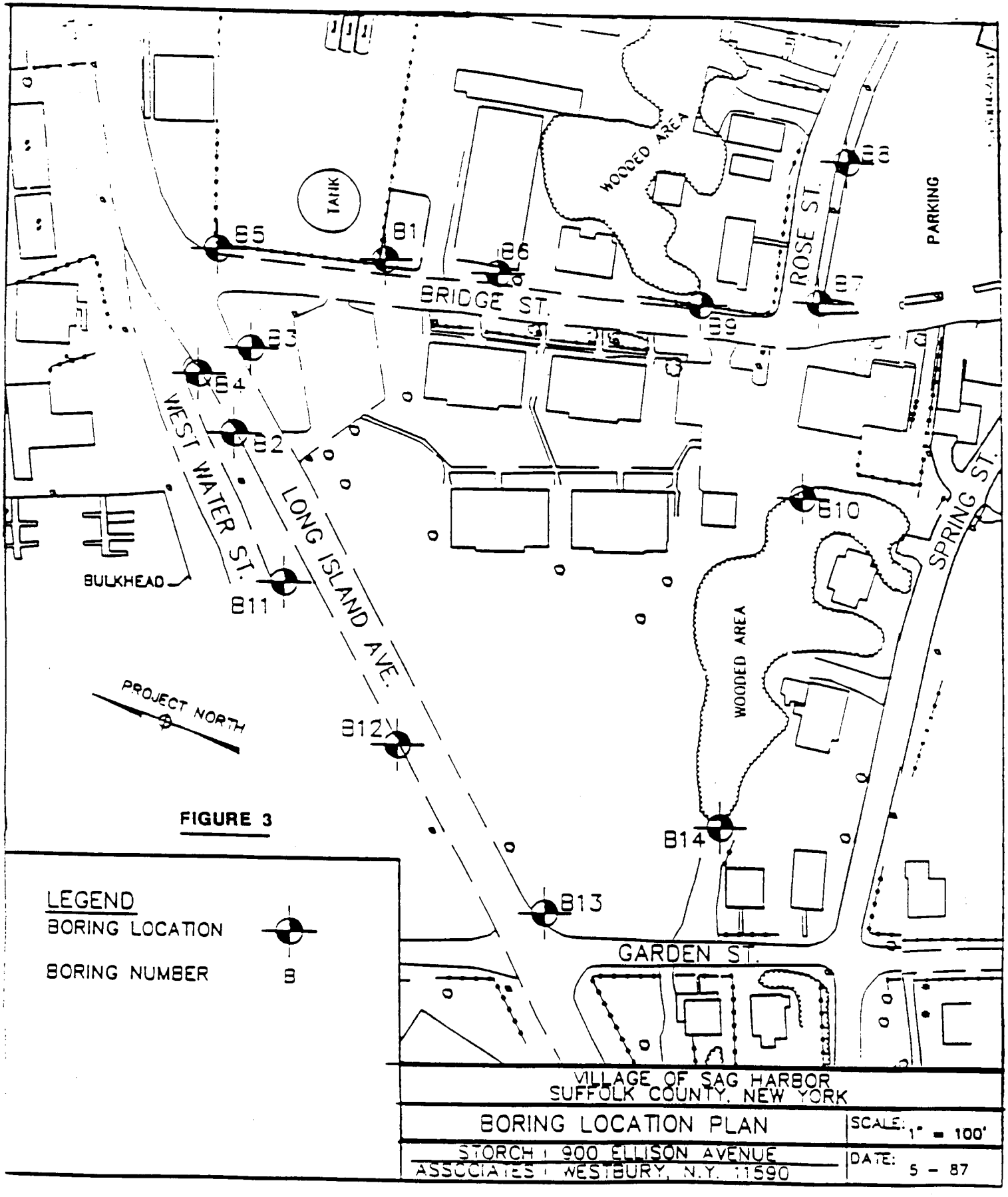


FIGURE 3

VILLAGE OF SAG HARBOR
SUFFOLK COUNTY, NEW YORK

BORING LOCATION PLAN | SCALE: 1" = 100'

STORCH ASSOCIATES | 900 ELLISON AVENUE WESTBURY, N.Y. 11590 | DATE: 5 - 87

TABLE 1

Borehole Descriptions and Sample Analyses from the Soil Investigation by Storch Associates

Borehole No.	Depth (ft)	HNu Reading (ppm)	Field Observations	Sample ID	Depth (ft)	Parameter	Concentration (ppb)
B-1				SS-1	3.2		
	0.5-1.0	54	Groundwater at 8 in.			Benzene	360
	0.1-2.0	66	Strong petroleum odor and sheen			Toluene	340
	2.0-3.0	140	Strong petroleum odor and sheen			Ethylbenzene	380
	3.0-3.2	300	Strong petroleum odor and sheen			Styrene	200
	3.2	---	Bottom of boring			Xylenes	500
						4,4'-DDE	110
						4,4'-DDT	700
						PCBs	None Found
						Petroleum Hydrocarbons	380 ppm
B-2							
	0.5-6.0	---	Groundwater at 2.8 ft; no petroleum odor or sheen				
	6.0	---	Bottom of boring				
B-3							
	0.5-3.0	---	Groundwater at 3.0 ft;				
	3.0-4.0	---	Strong petroleum odor and high sheen				
	4.0	--	Bottom of boring				
B-4				SS-4			
	0.5-5.0	---	No petroleum odor			Pesticides	None Found
	6.0-7.0	---	Groundwater at 6.0 ft; strong petroleum odor and sheen			PCBs	None Found
						Petroleum Hydrocarbons	93 ppm
	7.0	---	Bottom of boring				

TABLE 1 (cont'd)

Boring Descriptions and Sample Analyses from the Soil Investigation by Storch Associates

Borehole No.	Depth (ft)	HNu Reading (ppm)	Field Observations	Sample ID	Depth (ft)	Parameter	Concentration (ppb)
B-5				**SS-5**	**6**		
	0.5-4.5	---	Groundwater at 3.5 ft; no odor or sheen			Petroleum Hydrocarbons	30 ppm
	5.0-6.0	---	Petroleum odor, no sheen				
	6.0	---	Bottom of boring				
B-6				**SS-6**	**3.5**		
	0.5-2.5	---	Groundwater at 8 in.			Petroleum Hydrocarbons	200 ppm
	3.0-3.5	---	Petroleum odor and sheen				
	3.5	---	Bottom of boring				
B-7				**SS-7**	3.0-4.0		
	0.5-1.0	50	Groundwater at 8 in.			Pesticides	None Found
	1.0-3.0	---	No odor or sheen			PCBs	None Found
	3.0-3.5	120	Slight petroleum odor, no sheen				
	3.5-4.0	40	Slight petroleum odor, no sheen				
	4.0	---	Bottom of boring				
B-8							
	0.5-1.0	140	Groundwater at 8 in., no odor or sheen				
	1.0-3.0	---	No odor or sheen				
	3.0-3.5	15	Slight tar odor				
	4.0-5.0	5	No odor or sheen				
	5.0	---	Bottom of boring				
B-9							
	0.5-1.5	---	Groundwater at 6 in.				
	2.0-2.5	20	Petroleum odor, no sheen				
	3.5	---	Bottom of boring				

TABLE 1 (cont'd)

Boring Descriptions and Sample Analyses from the Soil Investigation by Storch Associates

Borehole No.	Depth (ft)	HNu Reading (ppm)	Field Observations	Sample ID	Depth (ft)	Parameter	Concentration (ppb)
B-10							
	0.5-2.0	---	Groundwater at 1.0 ft				
	2.5-3.0	2	No petroleum odor or sheen				
	3.0-5.0	---	Slight hydrogen sulfide odor				
	5.0	---	Bottom of boring				
B-11							
	0.5-3.0	---	Groundwater at 3.0 ft				
	3.0-5.0	---	No odor or sheen				
	5.0-6.0	5	No odor or sheen				
	6.0-7.0	---	No odor or sheen				
	7.0	---	Bottom of boring				
B-12							
	0.5-4.0	---	Groundwater at 4.0 ft				
	5.0-6.0	2	No odor or sheen				
	6.0	---	Bottom of boring				
B-13							
	0.5-1.0	---	Groundwater at 1.0 ft				
	1.0-4.0	---	No odor or sheen				
	4.0-5.0	34	No odor or sheen				
	5.0	---	Bottom of boring				
B-14							
	0.5-2.0	---	Groundwater at surface				
	2.0-2.5	25	No odor or sheen				
	2.5	---	Bottom of boring				

Based on the results of the initial investigation, an additional environmental investigation was initiated. Two monitoring wells were installed and sampled, and the existing well (MW 3) was sampled. In addition, a storm water effluent sample was collected from the pump station between Long Island Avenue and West Water Street. The monitoring well location map and sample analyses are presented in Figure 4 and Table 2, respectively. The groundwater sample from MW 3, located 3 feet from B 1, shows contamination by volatile organics, base/neutral compounds, lead, and phenols not present in samples from MW 1 and MW 2. The storm water effluent sample showed concentrations of arsenic, copper, lead, and 1,1,1-trichloroethane between 2.5 and 60 ppb (Ref 4).

An off-site reconnaissance was conducted on July 14, 1988 by Greg Pollack of NUS Corp. Region 2 FIT, Edison, N.J. It was noted that an additional potential source of contamination might be the former gas station on the corner of Long Island Avenue and Main Street, now Harbor Cove Realty (Ref 14).

3. Waste Containment/Hazardous Substance Identification

The source and extent of contamination are presently unknown. Potential sources of contamination include an oil spill at Long Island Fisherman Printing Facility, leakage from electrical transformers on the LILCO property, and waste from an old town gas plant, formerly located at what is now the LILCO property. In addition, a gas satation was located at what is currently the Harbor Cove Realty on Long Island Avenue. It is not known whether or not the gas tanks are still underground. Other potential sources of contamination may also have esisted. (Ref. 6, 7, 14, 35, 36, 40)

No. 2 fuel oil was detected in two soil samples that were collected from the rear of Long Island Fisherman. Some organic chemicals identified in fuel oils are listed in Table 3. Many of the chemicals found in the soil and groundwater samples collected in 1987 (see Tables 1 and 2) are also identified in fuel oils (Ref. 3, 4, 7, 8, 32, 33, 34, 38).

At the time of discovery of the fuel tank leak, analysis of a third sample, collected from the north side of Long Island Fisherman's property, adjacent to the LILCO property, showed a nonfuel oil possibly containing PCBs. Possible PCB contamination may be attributed to leakage from electrical transformers on the LILCO property. No known investigation or remediation has occurred, and no information is available about the transformers (Ref. 7, 8, 9, 32, 33, 34, 35).

A town gas plant had been located on what is now the LILCO property. The facility was used to manufacture gas from either coal or rosin, up until the time that LILCO purchased the property in 1929. The process was discontinued soon after. A summary report on town gas plants that manufactured coal gas up to the early 1900s states that waste commonly found at these sites can contain heavy metals, cyanides, phenolics, polynuclear aromatics, and volatile compounds. Table 4 shows a list of characteristic compounds found in manufactured gas plant tars. Some have been identified in the soil and groundwater samples collected in 1987 (see Table 1 and Table 2) (Ref.36, 37).

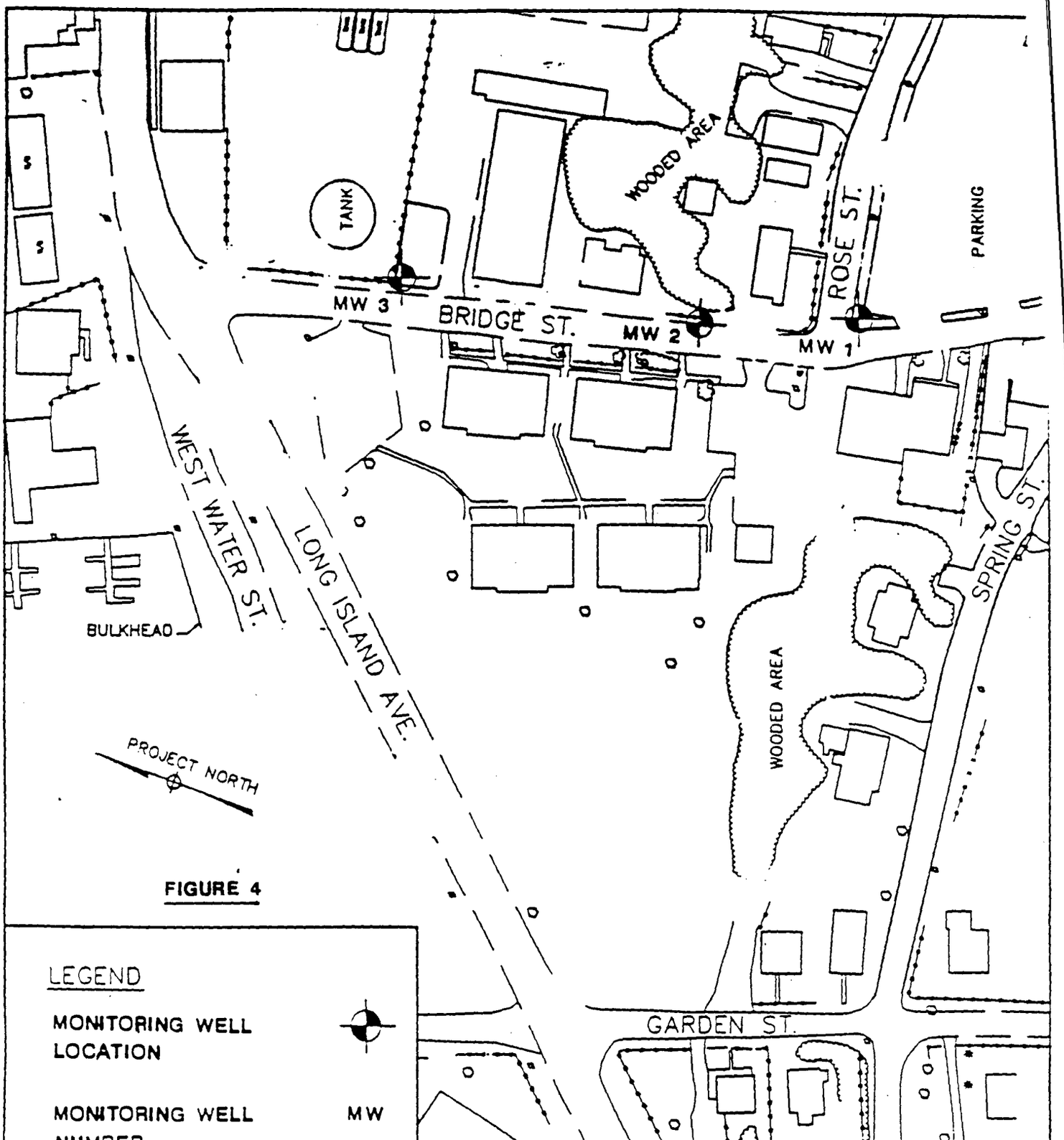


FIGURE 4

LEGEND

MONITORING WELL LOCATION

MONITORING WELL NUMBER MW

VILLAGE OF SAG HARBOR
SUFFOLK COUNTY, NEW YORK

MONITORING WELL LOCATION PLAN | SCALE: 1" = 100'

STORCH ASSOCIATES | 900 ELLISON AVENUE WESTBURY, N.Y. 11590 | DATE: 5 - 87

TABLE 2

Sample Analyses from the Groundwater Investigation by Storch Associates

Sample	Priority Pollutant Water Sampling Results: Parameter	Concentration (ppb)	HNu Head Space Analysis: Depth (ft)	HNu Reading (ppm)	Field Observations
Monitoring Well 1					
	N-nitrosodiphenylamine	4.7*	0-2	16	GWI at 1 foot
	Bis (2-ethylhexyl) phthalate	2.9*	2-4	11	
	Copper –	17	7-9	8	H_2S odor
	Lead 25	14	9-11	19	H_2S odor
	Zinc 300	560			
	Cyanide, Total	ND			
	Phenols, Total	ND			
Monitoring Well 2					
	N-nitrosodiphenylamine	4.2*	0.2	40	
	Bis(2-ethylhexyl)phthalate	2.4*	2-4	45	GWI at 2.5 feet
	Arsenic 25	5.0	4-6	30	
	Copper	27	6-8	44	H_2S odor
	Lead 25	29	8-10	46	H_2S odor
	Zinc	210			
	Cyanide, Total 100	14			
	Phenols, Total 1	34			
Monitoring Well 3					
	Benzene ND	140			
	Toluene 5	38			
	Ethylbenzene 5	290			
	Naphthalene 50	1000			
	2-Methylnaphthalene 50	210			
	Acenaphthylene 50	11*			

GWI groundwater interface
HNu Background - 1 ppm

TABLE 2 (cont'd)

Sample Analyses from the Groundwater Investigation by Storch Associates

Sample	Priority Pollutant Water Sampling Results: Parameter	Concentration (ppb)	Depth (ft)	HNu Head Space Analysis: HNu Reading (ppm)	Field Observations
Monitoring Well 3 cont'd					
	Acenaphthene	270			
	Fluorene	79*			
	N-nitrosodiphenylamine	19*			
	Phenanthrene	120			
	Flouranthene	21*			
	Pyrene	25*			
	Petroleum Hydrocarbon Fingerprinting	4700 Total Petroleum Hydrocarbons			
	Arsenic 25	13.7			
	Copper	37			
	Lead 25	81			
	Zinc 300	2100			
	Cyanide, Total 100	105			
	Phenols, Total 1	20			
Field Blank					
	1,1,1-Trichloroethene	3.4			
ERCO Blank					
	Di-n-butyl phthalate	4.1*			
Storm Effluent					
	Methylene chloride	16B			
	Acetone	5.3B			
	1,1,-Trichloroethane	2.5			
	Bis(2-ethylhexyl)phthalate	3.6*			
	Arsenic 25	7			
	Copper	41			
	Lead 25	60			

TABLE 2 (cont'd)

Sample Analyses from the Groundwater Investigation by Storch Associates

Sample	Priority Pollutant Water Sampling Results Parameter	Concentration (ppb)	Depth (ft)	HNu Head Space Analysis HNu Reading (ppm)	Field Observations
	Zinc 300	110			
	Cyanides, Total	ND			
	Phenols, Total	ND			
Erco Blank					
	Methylene Chloride	2.9*			
	Acetone	3.2*			

* Trace Concentrations below reporting limits
B Compound Also Detected in Blank
ND None Detected

Table 3

Some Organic Chemicals Identified in Various Petroleum Hydrocarbons

Acenaphthalenes
Acenaphthenes (gw)
Anthracene
Benzene (s,gw)*
Cycloalkanes
Alkanes
Carboxylic Acids
Ethylbenzene (s,gw)*
Methylnaphthalenes (gw)*
Naphthalenes (gw)*
Phenanthrene (gw)*
Phenol (gw)*
Toluene (s,gw)*
Xylenes (s)*

Various forms of :

- Benzene
- Naphthalene
- Phenol

s - detected in soil samples (See Table 1)
gw - detected in groundwater samples (See Table 2)
* - source from both fuel oils and crude oils

TABLE 4

Characteristic Compounds Found in Manufactured Gas Plant Tars

Benzene (s,gw)
Toluene (s,gw)
Xylenes (s)
Phenol (gw)
Cresols
Naphthalene (gw)
Xylenols
Pyridine
Methylnaphthalenes (gw)
Dimethylnaphthalenes (gw)
Acenaphthene (gw)
Carbazole
Fluoranthene (gw)
Anthracene
Phenanthrene (gw)
Pyrene (gw)
Chrysene
Benzo (a) anthracene
Benzo (k) fluoranthene
Benzo (a) pyrene
Perylene
Benzo (g,h,i) perylene
Benzo (b) chrysene
Dibenz (a,h) anthracene

s-detected in soil samples (See Table 1).
gw-detected in groundwater samples (See Table 2).

In 1984, after the fuel tank leak at Long Island Fisherman, three private wells around the corner from Long Island Fisherman, on Rose and Meadow Streets, were sampled. Solvents (1,1,1-trichloroethane, 1,1,2-trichloroethylene, tetrachloroethylene, cis-dichloroethylene, and o-dichlorobenzene) were detected above detection limits in one well. With the exception of iron in one well and manganese in two wells, the wells met the drinking water standards of the Suffolk County Department of Health Services. The source of these solvents is unknown (Ref. 6, 12, 13, 14).

4. Pathway Characteristics

a. Air Characteristics

During both the soil and groundwater investigations by Storch Associates, HNu readings above background were noted. The source and extent of soil contamination are unknown. However, a large area of subsurface soil contamination is suspected (Ref. 3, 4).

Some of the compounds detected in the soil and monitoring well samples have high gaseous mobility. The threat of release to the air can be increased if the soil is disturbed. Residents in the vicinity of Bridge and Rose Streets were informed to take caution in the event of encountering any suspicious appearances or odors when doing any type of soil excavation (Ref. 11).

The Sag Harbor Village District is listed on the Registry of National Historic Sites and Landmarks. The south end of Bridge Street and the east end of Rose Street are within this historic district (Ref 25, 26). Also, there are many wetland areas within the 4-mile radius, and Morton National Wildlife Refuge is about 4 miles from Bridge Street (Ref. 19, 20, 30).

b. Groundwater Characteristics

The aquifers of concern are the upper glacial aquifer and the Magothy aquifer, which are sole source aquifers. The upper glacial aquifer is made up of undifferentiated till deposits and is about 200-300 feet thick. The Magothy aquifer is made up sandy clay, clayey sand, and silt, is about 400-600 feet thick, and is hydraulically connected with the upper glacial aquifer. Site-specific information pertaining to the stratigraphy of geologic composition overlying the aquifer is not available. Generally, the soil in the vicinity of Bridge Street is muck (poorly drained organic soils) land. The water table is at or near the surface, with a depth ranging from 6 inches to 6 feet (Ref. 3, 4, 15, 17, 27).

An SCWA well serving most of Sag Harbor is located 1 mile south-southeast of Bridge Street. Three homes on Meadow Street, less than 0.25 mile from Bridge Street, are known to have private wells. Other locations of private wells are not known. However, Meadowlark Lane, about 0.25 mile from Bridge Street, is not serviced by SCWA's well (Ref. 13, 23, 24, 29).

A net precipitation of 25 inches per year has been estimated for the Bridgehampton area (data file on rHRS Annual Net Precipitation).

c. Surface Water Characteristics

Surface water runoff from Bridge Street is collected in a catch basin on the corner of Rose Street. The water is then pumped through a pump station located between Long Island Avenue and West Water Street, and out an outfall pipe into Sag Harbor Cove which is located about 100 feet from the north end of Bridge Street (Ref. 4, 7).

Sag Harbor Cove and Bay, Shelter Island Sound, Gardiners Bay, and Noyack Bay are all within 15 downstream miles of Bridge Street, and they are used for boating and commercial and recreational fishing (Ref. 21, 39).

Bridge Street is located in a 100-year flood zone, and signs are posted along Bridge Street stating that it is a flood area (Ref. 14, 18). The 2-year, 24-hour rainfall for the area is 3.5 inches (2-year, 24-hour rainfall map).

A drainage area of less than 10 acres was estimated for the site. Because the site is in a generally flat area and storm drains collect runoff, the upgradient drainage area is limited to the site itself. The nearest storm drain is at the intersection of Bridge Street and Rose Street. Because the site boundaries are not presently defined, the size of the site was based on the area of the soil investigation conducted by Storch Associates (Ref. 3, 28).

There are many nationally designated wetland areas within the 15 miles downstream. The closest wetlands is less than 0.25 mile from the site (Ref. 10, 19, 20).

d. On-Site Pathway Characteristics

The boundaries of the site are undefined so the on-site population and barriers to access (i.e., fence, locked gate) are presently not known. However, a large area of subsurface soil contamination is suspected. The nearest residence to the contaminated well is less than 100 feet. Residents in the vicinity of Bridge and Rose Streets were informed to take caution in the event of encountering any suspicious appearances or odors when doing any type of soil excavation (Ref. 3, 4, 6, 11, 14).

5. Targets

Groundwater on Long Island is from a sole source aquifer. Within a 4-mile radius from Bridge Street, there are one public well and three private wells presently documented. The public well, located on Division Street and Middle Line Highway, about 1 mile from the site, is owned and operated by SCWA. It services all streets in the Village of Sag Harbor except Meadowlark Lane. The three private wells are located on Meadow Street and Rose Street around the corner from Bridge Street. (Ref. 13, 23, 24, 28, 29)

Sag Harbor Cove and Bay, Shelter Island Sound, Gardiners Bay, and Noyack Bay are used for boating and both recreational and commercial fishing. There are no drinking water intakes within 15 downstream miles (Ref. 21, 39).

The population within 4 miles of Bridge Street is about 7,800. The nearest house is less than 100 feet from the contaminated well on Bridge Street. The site boundaries are undefined so the resident population is unknown. There are an estimated 63 people living on Bridge Street. The nearby population (within 1 mile) is about 2,400 (Ref. 16, 22, 23, 28, 31).

The Sag Harbor Village District is listed on the Registry of National Historic Sites and Landmarks. The south end of Bridge Street and east part of Rose Street are within this historic district. There are many wetlands within 15 downstream miles. Morton National Wildlife Refuge is about 4 miles from Bridge Street (Ref. 19, 20, 25, 26, 28, 30).

6. Other Regulatory Involvement

Not Applicable

7. Recommendations and Conclusions

The Sag Harbor-Bridge Street site is under investigation by the request of the Mayor of Sag Harbor. In 1987, Storch Associates conducted soil and groundwater investigations in the vicinity of Bridge Street for the Village of Sag Harbor. Soil, groundwater, and surface water contamination was noted during the investigations. The source and extent of contamination are presently unknown. Some potential sources include an oil spill at Long Island Fisherman Printing Facility, electrical transformers on the LILCO property, and waste disposals of an old town gas plant (now the LILCO property). Other potential sources of contamination may have existed, as solvents, various volatile organics, and metals were detected in residential wells, soils, and storm drain runoff (Ref. 3, 4, 5, 6, 7, 14, 35, 36, 40).

Groundwater is pumped from a sole source aquifer for drinking water use. There is a public well within 1 mile of the site, and there are private wells around the corner from Bridge Street. The site boundaries are not defined but the estimated 63 people living on Bridge Street may be on-site population. The nearest house is less than 100 feet from the contaminated monitoring well (MW3) on Bridge Street. Surface water, located a few hundred feet from Bridge Street, is used for fishing and boating, and there are many wetlands within 15 downstream miles of the site (Ref. 13, 19, 20, 21, 23, 24, 27, 28, 29, 30, 31, 39).

FIT recommends that this site receive a high priority Screening Site Inspection (SSI). The area exhibits notable levels of contaminants in soils and groundwater and significant potential target populations in air, surface water, groundwater, and on-site exposure pathways. Soil sampling is recommended around the potential sources and target properties to determine potential on-site population. Groundwater sampling of the monitoring wells on Bridge Street and the private wells on Meadow and Rose Streets is recommended to document an observed release to groundwater and the Maximally Exposed Individual (MEI). Surface water sampling of the catch basin, pump station, and the outfall pipe is also recommended to document an observed release to surface water.

EXHIBIT A

PHOTOGRAPH LOG

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK

JULY 14, 1988

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK
TDD NO. 02-8807-05
JULY 14, 1988

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-1	View southeast from the corner of Bridge and West Water Streets toward the LILCO property and the Long Island Fisherman building.	1355
1P-2	View east from the corner of Bridge and West Water Streets toward the shopping area in Sag Harbor.	1356
1P-3	View south down Bridge Street.	1400
1P-4	Photo of monitoring well No. 2 on Bridge Street.	1405
1P-5	View north up Bridge Street at the intersection of Rose Street. Harbor Close Condominiums are on the left.	1410
1P-6	View west down Rose Street.	1415
1P-7	View north, from the corner of Rose and Meadow Streets, of the rear of shops.	1416
1P-8	Photo of the oil tank at the rear of the Long Island Fisherman building.	1420
1P-9	View northwest of the rear of the Long Island Fisnerman building toward the LILCO property.	1421
1P-10	Photo facing west of the LILCO tank storage area.	1425
1P-12	Photo of the old gas station, now Harbor Cove Realty, on Main Street.	1431
1P-13	View west down Long Island Avenue from Main Street.	1432

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK

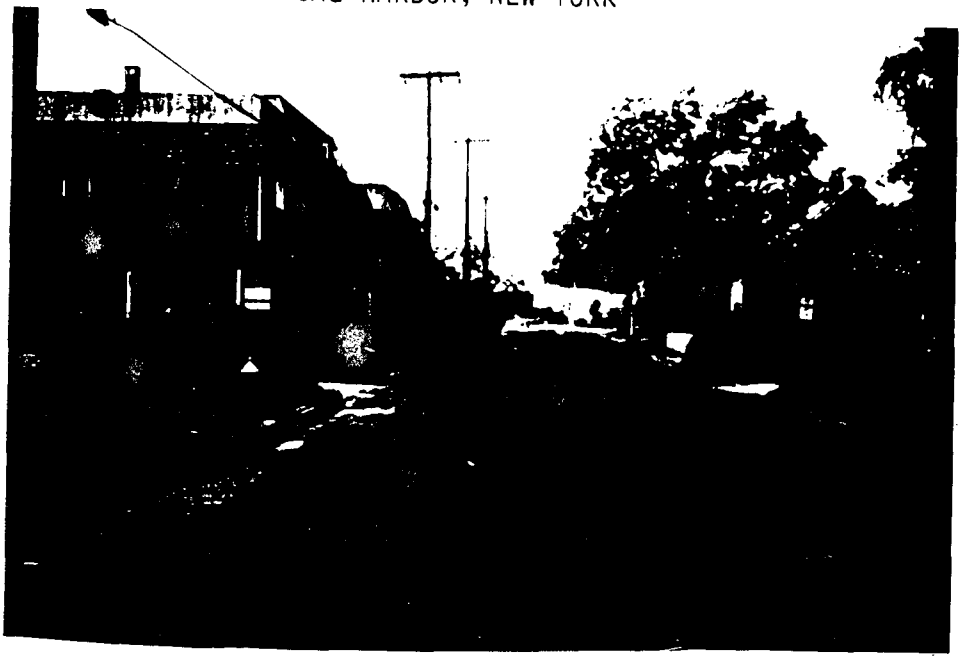
1P-1 July 14, 1988 1355
View southeast from the corner of Bridge and West Water Streets toward the LILCO property and the Long Island Fisherman building.

1P-2 July 14, 1988 1356
View east from the corner of Bridge and West Water Streets toward the shopping area in Sag Harbor.

1P-3 July 14, 1988 1400
View south down Bridge Street.

1P-4 July 14, 1988 1405
Photo of monitoring well No. 2 on Bridge Street.

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK



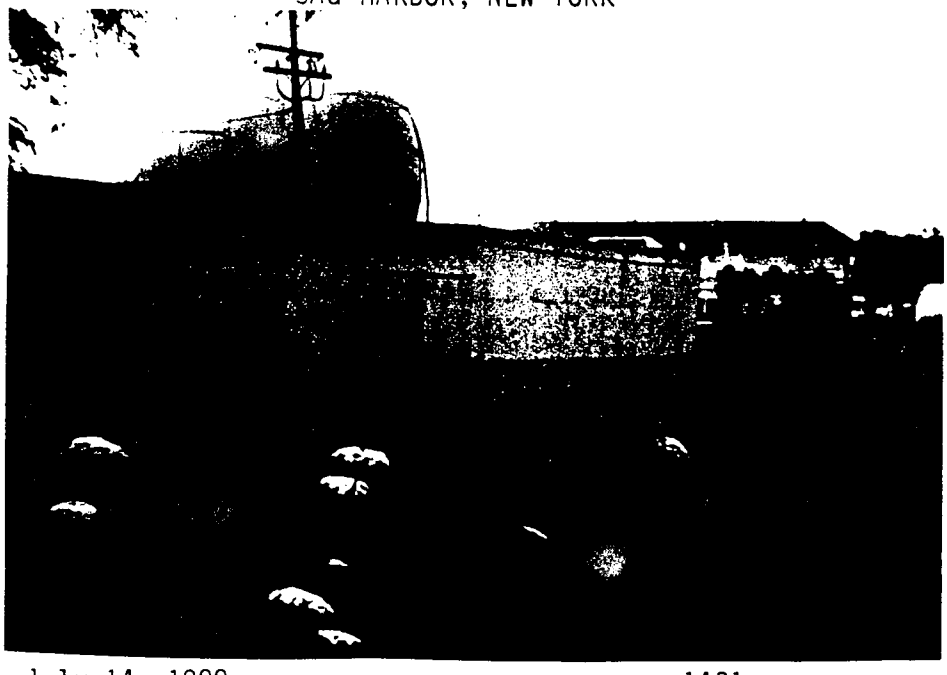
1P-5 July 14, 1988 1410
View north up Bridge Street at the intersection of Rose Street.
Harbor Club Condominiums are on the left.

1P-6 July 14, 1988 1415
View west down Rose Street.

1P-7 July 14, 1988 1416
View north, from the corner of Rose and Meadow Streets, of the rear of shops.

1P-8 July 14, 1988 1420
Photo of the oil tank at the rear of the Long Island Fisherman Building.

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK



1P-9 July 14, 1988 1421
View northwest of the rear of the Long Island Fisherman building toward the LILCO property.

1P-10 July 14, 1988 1425
Photo facing west of the LILCO tank storage area.

SAG HARBOR-BRIDGE STREET
SAG HARBOR, NEW YORK

1P-12 July 14, 1988 1431
Photo of the old gas station,now Harbor Cove Realty,on Main Street.

1P-13 July 14, 1988 1432
View west down Long Island Avenue from Main Street.

02-8807-05-PA
Rev. No. 1

Name: Deborah Cohen Location: Sag Harbor, New York

Site Name: Sag Harbor-Bridge Street Date: November 4, 1988

PA QUESTIONNAIRE

MAJOR CONSIDERATIONS

A) DOES ANY QUALITATIVE OR QUANTITATIVE INFORMATION EXIST THAT MAY INDICATE AN OBSERVED RELEASE TO AIR, GROUND WATER, SOIL OR SURFACE WATER? Yes

Describe: Soil, groundwater monitoring well, and surface water sample analyses show contamination. Petroleum hydrocarbon odor, oil sheen, and high concentrations of organic vapors (on HNu) were noted during an environmental investigation in 1987. The source of release is unknown.

B) IF THE ANSWER TO #1 IS YES, IS THERE EVIDENCE OF DRINKING WATER SUPPLY CONTAMINATION OR ANY OTHER TARGET CONTAMINATION (i.e., foodchain, recreation areas, or sensitive environments)? Unknown

Describe: At this time there is no known documentation of contamination of any of these targets.

C) ARE THERE SENSITIVE ENVIRONMENTS WITHIN A 4-MILE RADIUS OR 15 DOWNSTREAM MILES OF THE SITE? Yes IF YES, DESCRIBE IF ANY OF THE FOLLOWING APPLY:

- Multiple sensitive environments? U.S. Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory has identified multiple sensitive environments within 4 miles of Bridge Street.
- Federally designated sensitive environment(s)? The Morton National Wildlife Refuge is located within 4 miles west of Bridge Street.
- Sensitive environment(s) downstream on a small or slow flowing surface water body?

  Sag Harbor Cove is located about 300 feet north of Bridge Street.

D) IS THE SITE LOCATED IN AN AREA OF KARST TERRAIN? No

Describe:

E) IS THE AQUIFER UNDERLYING THE SITE A "SOLE SOURCE" AQUIFER AS DESIGNATED ACCORDING TO SECTION 1424(e) OF THE SAFE DRINKING WATER ACT? Yes

Describe: Federal Register Vol. 43 No. 120, Wednesday, June 21, 1978. Aquifer Underlying Nassau and Suffolk Counties, New York.

F) DOES ANY QUALITATIVE OR QUANTITATIVE INFORMATION EXIST THAT PEOPLE LIVE OR ATTEND SCHOOL ON ONSITE CONTAMINATED PROPERTY? Unknown

Describe: The boundaries of the site are presently undefined, and the extent of contamination is unknown. A large area of subsurface soil contamination is suspected. A private residence and a condominium complex are adjacent to the area of known contamination on Bridge Street.

SITE INFORMATION

1. SITE NAME: Sag Harbor-Bridge Street

   ADDRESS: Bridge Street

   CITY: Village of Sag Harbor COUNTY: Suffolk STATE: New York ZIP: 11963

   EPA ID: NYD986869170

   LATITUDE: 41° 00'02" N LONGITUDE: 072° 17' 56" W.

2. DIRECTIONS TO SITE (From nearest public road): From Main Street turn left onto Long Island Avenue. First left onto Bridge Street.

3. SITE OWNERSHIP HISTORY (Use additional sheets, if necessary): See attachment 1

   A. Name of current owner: Village of Sag Harbor

      Address: Main Street

      City: Village of Sag Harbor County: Suffolk State: New York Zip: 11963

      Dates: From Unknown To Unknown Phone: (516) 785-0222

   B. Name of previous owner: _____

      Address: _____

      City: _____ County: _____ State: _____ Zip: _____

      Dates: From _____ To _____ Phone: _____

   Source of ownership data: Ref. 1, 2

4. TYPE OF OWNERSHIP (Check all that apply): See attachment 1

   _____ Private _____ State __X__ Municipal

   _____ Federal _____ County __X__ Other (describe): Unknown areal contamination

5. NAME OF SITE OPERATOR: Village of Sag Harbor

   ADDRESS: Main Street

   City: Village of Sag Harbor County: Suffolk STATE: New York ZIP: 11963

   PHONE: (516) 725-0222

BACKGROUND/OPERATING HISTORY

6. DESCRIBE OPERATING HISTORY OF SITE: Due to a previous petroleum spill and undocumented accounts of skin irritation in the area, the Village of Sag Harbor contracted Storch Associates to investigate possible contamination along the proposed route of their drainage improvement program. During the investigation, soil, groundwater, and surface water contamination was noted.

   Source of information: Ref. 3, 4, 5

7. DESCRIBE SITE AND NATURE OF SITE OPERATIONS (property size, manufacturing, waste disposal, storage, etc.): The contamination origin and extent are unknown. Several potential sources for the contamination may include a printing facility, a utility maintenance yard, an old town gas plant, and underground storage tanks at the former gas station upgradient of the contamination. Soil and monitoring well samples show the highest concentrations of contamination near the printing facility on Bridge Street.

   Source of information: Ref. 3, 4, 6, 14, 36, 40

8. DESCRIBE ANY EMERGENCY OR REMEDIAL ACTIONS THAT HAVE OCCURRED AT THE SITE: The documented fuel oil spill has been remediated, monitoring wells have been installed and the case closed as of April 1986. Additional monitoring wells were installed on Bridge Street by the Village of Sag Harbor after soil contamination was identified during an investigation in April and May 1987.

   Source of information: Ref. 3, 4, 7, 32, 33, 34

9. ARE THERE RECORDS OR KNOWLEDGE OF ACCIDENTS OR SPILLS INVOLVING SITE WASTES? Yes

   Describe: In October 1984, an aboveground fuel tank at the rear of the Long Island Fisherman building was found to be leaking. Samples collected around the area of the spill showed No. 2 fuel oil, and a sample from the side of the building adjacent to the LILCO property showed possible PCBs (Aroclors 1248 and 1254).

   Source of information: Ref. 7, 8, 9

10. DISCUSS EXISTING SAMPLING DATA AND BRIEFLY SUMMARIZE DATA QUALITY (e.g., sample objective, age/comparability, analytical methods, detection limits and QA/QC): Sample analysis from the soil and groundwater investigation by Storch Associates in 1987 detected, in the soil, volatile organics including benzene, toluene, ethylbenzene, styrene, and xylene (200-500 ppb); DDT and DDE (700 and 110 ppb), and petroleum hydrocarbons (up to 380 ppm); In the groundwater semivolatile and volatile organics including benzene, toluene, ethylbenzene, naphthalene, acenaphthene, and phenanthrene (10-1000 ppb); and petroleum hydrocarbons (4700 ppb) ,arsenic, lead, copper, zinc, cyanide, and phenols (20-2100 ppb) were detected. A surface water sample, collected from the storm water effluent pump between Long Island Ave. and West Water Street, showed concentrations of arsenic, copper, lead, and zinc between 7 and 110 ppb and of 1,1,1 trichloroethane at 2.5 ppb.

Harbor View Condominium water samples showed no contamination by constituents tested for.

Two samples collected from the fuel oil spill in 1984 at Long Island Fisherman showed No. 2 fuel oil. A third sample showed possible PCBs (Aroclors 1248 and 1259) and chlordane.

Private well water from three homes on Meadow Street analyzed in 1984 met standards for constituents analyzed for with the exception of iron at one location and manganese at two locations. Concentrations of some solvents were detected above detection limits at one location.

Source of information: Ref. 3, 4, 8, 9, 10, 12

WASTE CONTAINMENT/HAZARDOUS SUBSTANCE IDENTIFICATION

11. FOR EACH SOURCE AT THE SITE, SUMMARIZE ON TABLE 1 (page 12): 1) Methods of hazardous substance disposal, storage or handling; 2) size/volume/area of all features/structures that might contain hazardous waste; 3) condition/integrity of each storage disposal feature or structure; and 4) types of hazardous substances handled.

12. BRIEFLY EXPLAIN HOW WASTE QUANTITY WAS ESTIMATED (e.g., historical records or manifests, permit applications, air photo measurements, etc.): The source and extent of contamination are presently unknown. Potential sources of contamination include an oil spill in 1984 at Long Island Fisherman Printing Facility; electrical transformers on the LILCO property; an old town gas plant, now the LILCO property; a former gas station, now Harbor Cove Realty; and some unknown sources.

Source of information: Ref. 6, 7, 14, 35, 36, 40

13. DESCRIBE ANY RESTRICTIONS OR BARRIERS ON ACCESSIBILITY TO ONSITE WASTE MATERIALS:

Since the source and extent of contamination is unknown, the site boundary is presently undefined. Contamination was detected in subsurface soil and in a monitoring well on Bridge Street which has no barriers to access.

Source of information: Ref. 1, 2, 3, 4, 14

GROUND WATER CHARACTERISTICS

14. ANY POSITIVE OR CIRCUMSTANTIAL EVIDENCE OF A RELEASE TO GROUND WATER? Yes

Describe: Storch Associates, under contract to the Village of Sag Harbor, installed and sampled monitoring wells and identified contamination.

Source of Information: Ref. 1, 2, 3, 4

15. ON TABLE 2 (page 13), GIVE NAMES, DESCRIPTIONS, AND CHARACTERISTICS OF GEOLOGIC/HYDROGEOLOGIC UNITS UNDERLYING THE SITE.

16. NET PRECIPITATION: 25 inches

SURFACE WATER CHARACTERISTICS

17. ARE THERE SURFACE WATER BODIES WITHIN 2 MILES OF THE SITE? Yes

_____ Ditches _____ Lakes _____ Pond

__X__ Creeks _____ Rivers __X__ Other Sag Harbor Cove and Bay, Noyack Bay

18. DISCUSS THE PROBABLE SURFACE RUNOFF PATTERNS FROM THE SITE TO SURFACE WATERS:

Runoff on Bridge Street flows down Bridge Street to a catch basin on the corner of Rose and Bridge Streets. This water gets pumped out an outfall pipe on West Water Street into Sag Harbor Cove.

19. PROVIDE A SIMPLIFIED SKETCH OF SURFACE RUNOFF AND SURFACE WATER FLOW SYSTEM FOR 15 DOWNSTREAM MILES (see item #36).

20. ANY POSITIVE OR CIRCUMSTANTIAL EVIDENCE OF SURFACE WATER CONTAMINATION? Yes

Describe: A storm water sample indicated the presence of low levels of arsenic, lead, zinc, copper, and 1,1,1-trichloroethane.

Source of information: Ref. 4

21. ESTIMATE THE SIZE OF THE UPGRADIENT DRAINAGE AREA FROM THE SITE: <10 acres

Source of information: Ref. 28

22. DETERMINE THE AVERAGE ANNUAL STREAM FLOW OF DOWNSTREAM SURFACE WATERS

Water body: Not Applicable Flow: _____ cfs

Source of information: _____

23. IS THE SITE OR PORTIONS THEREOF LOCATED IN SURFACE WATER? No

24. IS THE SITE LOCATED IN A FLOOD PLAIN (indicate flood frequency)? Yes, 100-year flood plain. Also, the Village has posted "flood area" signs on Bridge Street.

25. IDENTIFY AND LOCATE (see item #36) ANY SURFACE WATER RECREATION AREA WITHIN 15 DOWNSTREAM MILES OF THE SITE: The Sag Harbor Cove waterfront area is located within 500 feet of Bridge Street. Sag Harbor Bay, Noyack Bay, Shelter Island Sound, and Gardiners Bay are all within 15 downstream miles of Bridge Street, and they are used for fishing and boating.

Source of information: Ref. 14, 21, 28

26. TWO YEAR 24-HOUR RAINFALL: 3.5 inches

TARGETS

27. DISCUSS GROUND WATER USAGE WITHIN FOUR MILES OF THE SITE: Sag Harbor is supplied with drinking water by Suffolk County Water Authority (SCWA) from a deep well on Division Street at the intersection of Middleline Highway, about 1 mile from the site. With the exception of Meadowlark Lane all streets in Sag Harbor are supplied by this well. There are no other SCWA wells within the 4-mile radius of the site. There are three known private wells on Meadow Street located around the corner from Bridge Street.

Source of information: Ref. 13, 23, 24, 29

28. SUMMARIZE THE POPULATION SERVED BY GROUND WATER ON THE TABLE BELOW: (See Attachment 1)

Distance (miles)	Population
>0 - 1/4	7 (+21)
>1/4 - 1/2	0
>1/2 - 1	0
>1 - 2	1872
>2 - 3	0
>3 - 4	0

Source of information: Ref. 13, 23, 24, 28, 29

29. IDENTIFY AND LOCATE (see item #36) POPULATION SERVED BY SURFACE WATER INTAKES WITHIN 15 DOWNSTREAM MILES OF THE SITE: Not applicable.

Source of information:

30. DESCRIBE AND LOCATE FISHERIES WITHIN 15 DOWNSTREAM MILES OF THE SITE (i.e.,provide standing crop or production and acreage, etc.): All waterways in the area are used for fishing including Sag Harbor Cove, Sag Harbor Bay, Shelter Island Sound, and Gardiners Bay. A standing crop default value of 90 lbs/acre for N.Y. coastal area and an area of 54,000 acres were assumed.

Source of information: Ref. 28, 39

31. IF SURFACE WATER RECREATION AREAS EXIST, CHOOSE RECREATIONAL USE CATEGORY, AND THEN DETERMINE THE POPULATION WITHIN THE ASSIGNED RADIUS FROM THE RECREATION AREA. (Use GEMS to allocate into distance rings).

a. Capital use and access improvements ___X___ (assigned radius = 125 miles)
b. Access improvements only _____ (assigned radius = 80 miles)
c. Observed use only _____ (assigned radius = 40 miles)
d. None of the above apply and access is not restricted _____ (assigned radius = 10 miles)

Distance (miles)	Population
>0 - 5	10,324
>5 - 10	30,507
>10 - 20	37,765
>20 - 40	769,640
>40 - 60	2,803,412
>60 - 80	4,384,069
>80 - 100	10,966,814
>100 - 125	6,953,398

32. DETERMINE THE DISTANCE FROM THE SITE TO THE NEAREST OF EACH OF THE FOLLOWING LAND USES. (Distance taken from the contaminated monitoring well)

Description	Distance (miles)
Commercial/Industrial/ Institutional	100 ft
Single Family Residential	250 ft
Multifamily Residential	<100 ft
Park	<1 mi
Agricultural	>4 mi

Source of information: Ref. 3, 4, 6, 14, 28

33. SUMMARIZE THE POPULATION WITHIN A FOUR-MILE RADIUS OF THE SITE: 7,843.
The boundaries of the site are unknown. An estimated 63 people live on Bridge Street. These 63 people could potentially be the on-site population.

Distance (miles)	Population
on site	0(63)
>0 - 1/4	356(293)
>1/4 - 1/2	807
>1/2 - 1	1,217
>1 - 2	1,662
>2 - 3	2,025
>3 - 4	1,776

Source of information: Ref. 16, 22, 23, 28, 31

OTHER REGULATORY INVOLVEMENT

34. DISCUSS ANY PERMITS/VIOLATIONS: Not Applicable

County: _____

State: _____

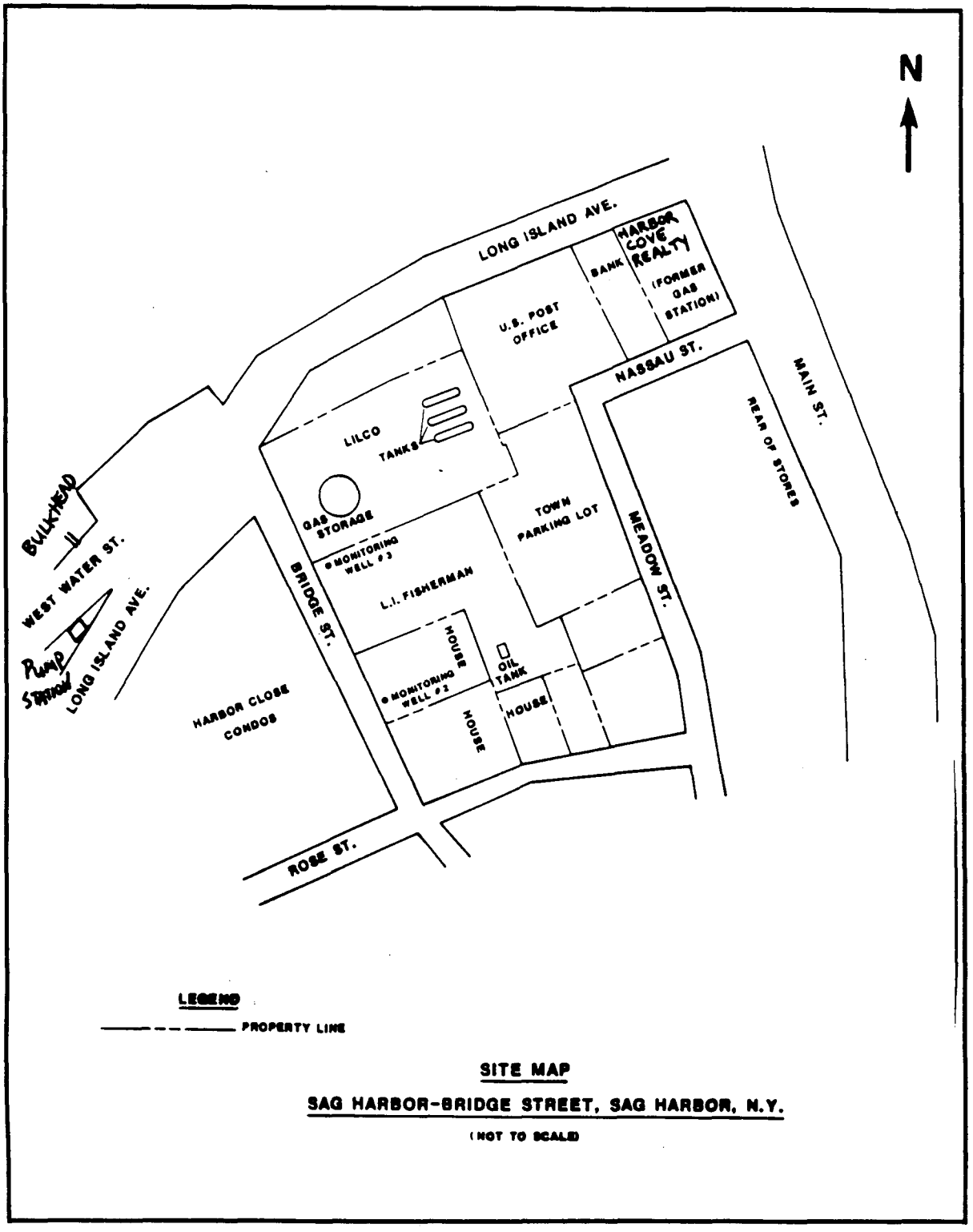
Federal: _____

Other: _____

Source of information: _____

35. **SKETCH OF SITE**

Include ail pertinent features, e.g., wells, storage areas, underground storage tanks, waste areas, buildings, access roads, areas of ponded water, etc. Attach additional sheets with sketches of enlarged areas, if necessary.



36. **SURFACE WATER FEATURES**

Provide a simplified sketch of surface runoff and surface water flow system for 15 downstream miles. Include all pertinent features, e.g., intakes, recreation areas, fisheries, gauging stations, etc.

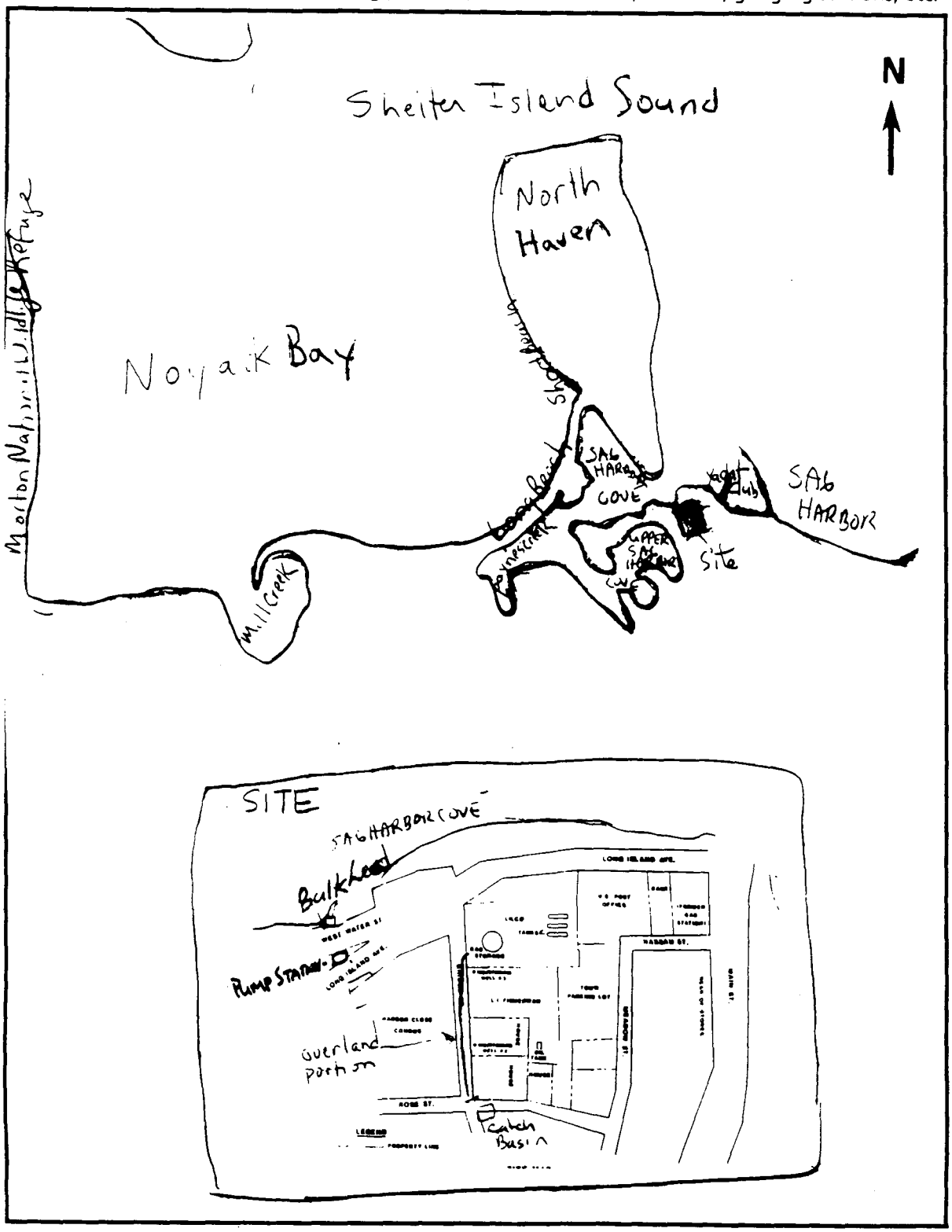


TABLE 1
WASTE CONTAINMENT AND HAZARDOUS SUBSTANCE IDENTIFICATION[1]

SOURCE TYPE	SIZE (Volume/Area)	ESTIMATED WASTE QUANTITY	SPECIFIC COMPOUNDS	CONTAINMENT[2]	SOURCE OF INFORMATION
Unknown					

1 Use additional sheets if necessary

2 Evaluate containment of each source from the perspective of each migration pathway (e.g., ground water pathway - nonexistent, natural or synthetic liner, corroding underground storage tank; surface water - inadequate freeboard, corroding bulk tanks; air - unstabilized slag piles, leaking drums, etc.).

TABLE 2
HYDROGEOLOGIC INFORMATION[1]

STRATA NAME/DESCRIPTION	THICKNESS (ft.)	DEPTH TO WATER (ft.)	HYDRAULIC CONDUCTIVITY (cm/sec)	TYPE OF DISCONTINUITY[2]	SOURCE OF INFORMATION
In the vicinity of the site the soil is either filled land or muck land.		At or near the surface Groundwaer found from 6 inches to 6 feet.			Ref. 15 Ref. 3
Upper Glacial Aquifer: Till deposits, undifferentiated.	200-300 ft				Ref. 27
Magothy Aquifer: Sandy clay, clayey sand and silt	400-600 ft				Ref. 27

1 Use additional sheets if necessary
2 Identify the type of discontinuity within four-miles from the site (e.g., river, strata "pinches out", etc.)

Attachment 1

3., 4., 5. Site Ownership History, Type of Ownership and Site Operator: (page 3)

The Village of Sag Harbor owns Bridge Street. Contamination along Bridge Street was discovered during an environmental investigation by Storch Associates for the Village of Sag Harbor. The source of the contamination is presently unknown. For these reasons the Village of Sag Harbor is listed as the site owner and operator until further information is available.

28. Population Served By Groundwater: (page 8)

There are three residences with private wells located on Meadow Street, less than 0.25 mile from Bridge Street. There are nine residences on Meadowlark Lane (Ref. 28), which is not serviced by the SCWA well. It is not known whether these nine residences use private wells or not. The SCWA well services 800 accounts assumed as 800 residences.

The census average for people/unit for Southhampton is 2.34.

$3 \times 2.34 = 7$
$9 \times 2.34 = 21$
$800 \times 2.34 = 1872$

REFERENCES

1. Letter from Frank T. Ricotta, P.E., Director, Bureau of Hazardous Site Control, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation NYSDEC, to Village of Sag Harbor. May 19, 1988.

2. Potential Hazardous Waste Site, Site Inspection Summary Report, Sag Harbor Bridge Street Area, NYSDEC, Division of Solid and Hazardous Waste. January 15, 1988.

3. Letter from Dean Anson, Supervising Environmental Engineer, Storch Associates, to Hon. George E. Butts Jr., Mayor, Village of Sag Harbor. June 4, 1987.

4. Letter from Dean Anson, Supervising Environmental Engineer, Storch Associates, to Hon. George E. Butts, Jr., Mayor, Village of Sag Harbor. October 2, 1987.

5. Letter from George E. Butts, Jr., Mayor, Village of Sag Harbor, to Bob Becherer, Regional Solid and Hazardous Waste Engineer, Region 1, NYSDEC. December 1, 1987.

6. County of Suffolk, Real Property Tax Service Agency, Property Map.

7. NYSDEC, Spill Report No. 84-1807, Spill date October 10, 1984.

8. Letter from John Pedneault, Laboratory Director, Pedneault Associates, Inc., to Walter Parrish, NYSDEC. October 17, 1984.

9. Letter from John Pedneault, Pedneault Associates, Inc., to NYSDEC. November 5, 1984.

10. Letter from Diane Bubka, Managing Agent, Harbor Close Condominium, to Condominium Owner. February 25, 1988.

11. Letter from George E. Butts, Jr., Mayor, Village of Sag Harbor, to Residents of the Village of Sag Harbor. November 5, 1987.

12. Letter from Paul J. Ponturo, P.E., Senior Public Health Engineer, Drinking Water Supply Section, County of Suffolk Department of Health Services, to John Licata, P.E., Senior Sanitary Engineer, NYSDEC. December 11, 1984.

13. Letter from John Licata, P.E., Senior Sanitary Engineer, NYSDEC, to Paul Ponturo, Water Quality Unit, Suffolk County Department of Health Services. October 26, 1984.

14. Preliminary Assessment Information Reporting Form, Sag Harbor-Bridge Street, TDD No. 02-8807-05, Off-Site Reconnaissance, NUS Corp. Region 2 FIT, Edison, N.J. July 14, 1988.

15. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Suffolk County, N.Y. , April, 1975.

16. General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.

17. Federal Register, Vol. 43, No. 120, Wednesday, June 21, 1978. Aquifers Underlying Nassau and Suffolk Counties, N.Y. pp. 26611-2.

18. Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map, Panel No. 3608070001C, revised November 17, 1982.

19. NYSDEC, Divison of Fish and Wildlife, Bureau of Wildlife, Significant Habitat, "New York, Hartford Quadrangle" 1981, revised April 20, 1987.

20. Letter from John W. Ozard, Senior Wildlife Biologist, Significant Habitat Unit, Wildlife Resources Center, NYSDEC, to Gregory Pollack, NUS Corp. July 25, 1988.

21. Telecon Note: Conversation between Ilene Harley, Village of Sag Harbor, and Deborah Cohen, NUS Corp., August 24, 1988.

22. Project Note: From Deborah Cohen, to File, Subject: Population within 4 miles. August 25, 1988.

23. Telecon Note: Conversation between Suffolk County Planning Department and Deborah Cohen, NUS Corp., August 25, 1988.

24. Telecon Note: Conversation between Suffolk County Water Authority and Deborah Cohen, NUS Corp., Edison, N.J. August 25, 26, 1988.

25. New York Registry of National Historic Sites and Landmarks as of 2/4/87 from U.S. Dept. of the Interior.

26. Village of Sag Harbor Historic Preservation Map, Sag Harbor's Historic Preservation Program.

27. Hydrogeology of Suffolk County, Long Island, New York Department of the Interior, United States Geological Survey (USGS), 1974.

28. US Department of the Interior, Geological Survey Topographic Map, 7.5 minute series, "Sag Harbor/Greenport Quadrangles, N.Y." 1956.

29. Telecon Note: Conversation between Mr. Blake, Suffolk County Water Authority, and Deborah Cohen, NUS Corp., September 7, 1988.

30. U.S. Department of the Interior, National Wetlands Inventory; Sag Harbor 1982; Greenport 1980; East Hampton 1980; Gardiners Island West, 1980 Quadrangles, N.Y.

31. Letter from Paul Moses, President, Board of Managers, Harbor Close Condominium, to George Butts, Mayor, Village of Sag Harbor. November 15, 1987.

32. Letter from John Licata, P.E., Sr. Sanitary Engineer, NYSDEC, to Richard Riena, The Long Island Fisherman. November 5, 1984.

33. Letter from Darrel J. Kost, P.E., Senior Oil Spill Engineer, New York State Department of Transportation (NYSDOT), to Richard Riena, The Long Island Fisherman. February 28, 1985.

34. Letter from John Licata, P.E., Regional Oil Spill Engineer, NYSDEC, to Richard Riena, The Long Island Fisherman. April 24, 1986.

35. NYSDEC memorandum from Rob Schneck to Bob Olazagasti (both of NYSDEC), Subject: Investigation of Possible PCB Site. November 8, 1984.

36. Letter from Steve Dalton, Manager, Environmental Science Division, LILCO to John Licata, P.E., Sr. Sanitary Engineer, NYSDEC. November 1, 1984.

37. Anastos, G.J., G.M. Johnson, R.M. Schapot, V.G. Velez. Town Gas Plants - History, Problems and Approaches to Study. The 7th National Conference on Management of Uncontrolled Hazardous Waste Sites. December 1-3, 1986 pp. 93-96.

38. James Dragun. The soil chemistry of hazardous materials, Maryland, Hazardous Materials Control Research Institute, 1988. pp 398-411.

39. Telecon Note: Conversation between Fred Blossom, National Marine Fishery Service, and Deborah Cohen, NUS Corporation, September 16, 1988.

40. Memorandum of Meeting, Village of Sag Harbor, June 9, 1987.