

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE 1 INVESTIGATION

**Old North Sea Landfill
Site No. 152051
Town of Southampton, Suffolk County**

Final - July 1988



**Prepared for :
New York State
Department of
Environmental Conservation**

**50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, Commissioner**

**Division of Hazardous Waste Remediation
Michael J. O'Toole, P.E., Director**

**Prepared by:
Roux Associates, Inc.
Subcontractor to
Gibbs & Hill, Inc.**

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**BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION**

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Engineering Investigations at Inactive Hazardous
Waste Site in the State of New York,
Phase I Investigation

Old North Sea Landfill
North Sea, Town of Southampton
I.D. No. 152051

Prepared for:

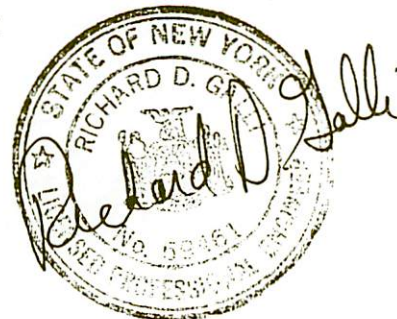
Division of Hazardous Waste Remediation
New York State Department of Environmental
Conservation

50 Wolf Road
Albany, New York 12233-0001

July 1988

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Subcontractor to
GIBBS & HILL, INC.



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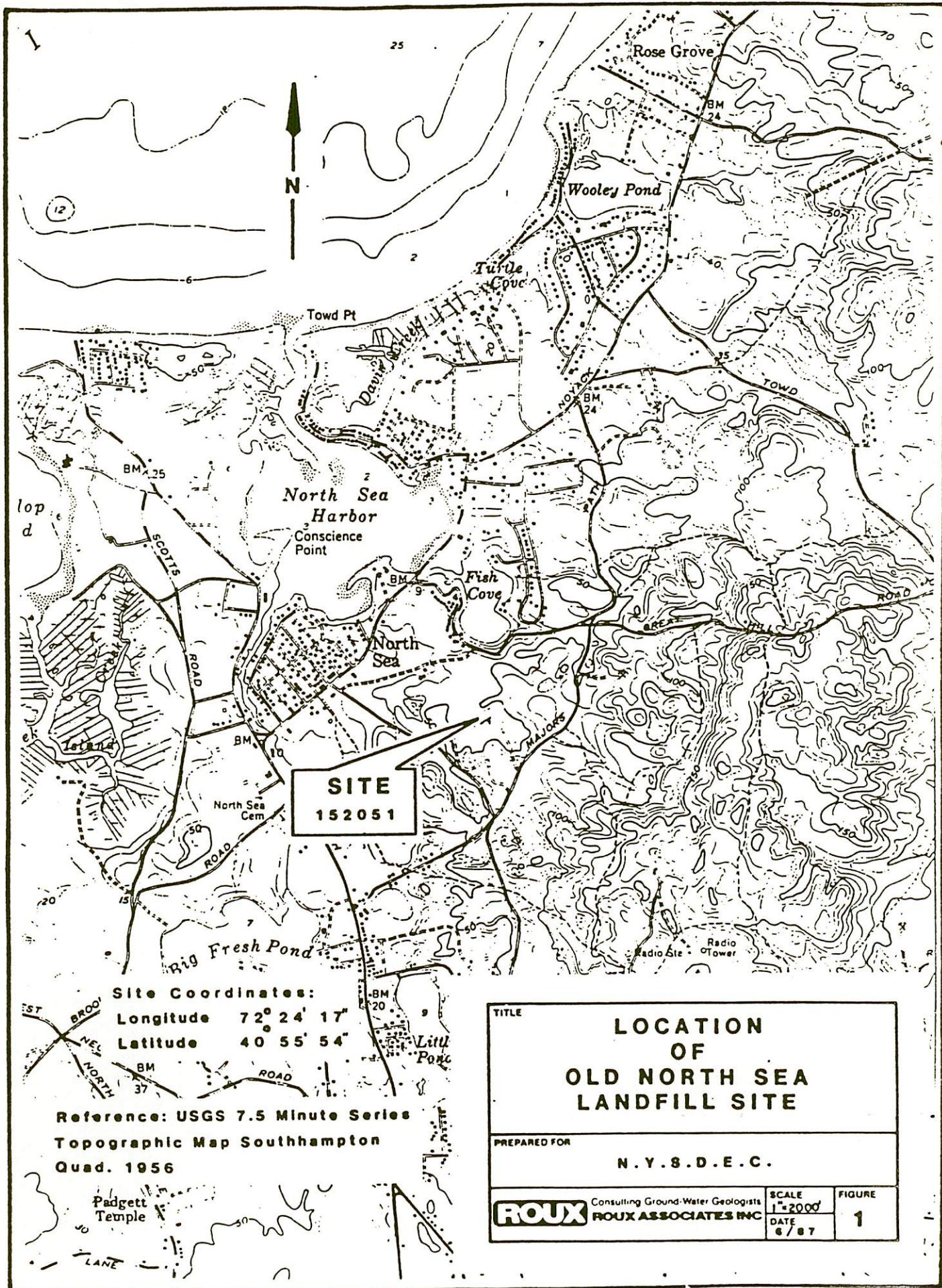
APPENDICES

- A. Copies of all relevant information that has not been included in the HRS Documentation section
- B. Updated NYS Registry Form

1.0 EXECUTIVE SUMMARY

The Old North Sea Landfill site (New York I.D. No. 152051) located in the Village of North Sea, Suffolk County, New York, is an inactive landfill suspected of containing hazardous wastes. The site is situated west of Majors Path and North of Straight Path (Figure 1). The current owner of the site is Howard Enterprises Inc. of Southold, New York. The previous owner, Thomas Gill of Southampton, New York sold the site to Howard Enterprises Inc. in 1985. During the time of active use the site was owned by the Village of Southampton, New York. The landfill was used by the Village and Town of Southampton for disposal of municipal wastes. The landfill was active from 1930 to 1963. There are no records of waste management, violations, or tests performed on site.

The Old North Sea site was evaluated using the Hazard Ranking System (HRS). There were no HRS scores computed. There is no data available on the types or quantity of disposed waste, hence the no scores for S_{DC} , S_{FE} and S_M . Considering the shallow depth to ground water and the aquifers use for drinking water, any leachate which is generated may have a negative environmental impact.



Site Coordinates:

Longitude 72° 24' 17"

Latitude 40° 55' 54"

Reference: USGS 7.5 Minute Series
Topographic Map Southampton
Quad. 1956

Padgett
Temple

TITLE

**LOCATION
OF
OLD NORTH SEA
LANDFILL SITE**

PREPARED FOR

N.Y.S.D.E.C.

ROUX

Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

SCALE
1"=2000'
DATE
6/87

FIGURE

1

Analytical data is needed to determine waste characteristics and if soil and/or ground-water contamination exist.

A Phase II investigation is recommended to obtain analytical data which will determine if hazardous wastes from the site have impacted the environment. The proposed Phase II investigation includes the drilling of four soil borings, the installation of four monitoring wells and the collection and analysis of soil and ground-water samples.

2.0 PURPOSE

The Old North Sea landfill site is listed on the New York State registry of Inactive Hazardous Waste sites as a suspected hazardous waste disposal area. The quantity of disposed wastes is unknown.

The purpose of a Phase I investigation is to provide a preliminary characterization of hazardous substances at the site. This includes the possible migration pathways for pollutants and the affect that pollutants, if present, might have on human population and/or natural resources.

A Phase I investigation is a compilation of existing information which includes

- o Site history - obtained available records from state, federal, county, local agencies.
- o Site geology, hydrogeology, and topography.
- o Local demographics, local surface water and ground water use.
- o Interviews with site owners, operators and other

individuals knowledgeable of site history and operations.

- o Site inspection.
- o Phase I report which includes data evaluation, a preliminary Hazard Ranking Score (HRS) and a recommendation for a Phase II investigation.

3.0 SCOPE OF WORK

The Phase I investigation of the Old North Sea landfill site involved a data and records search, interviews, and a site inspection all conducted by Roux Associates, Inc. The following are the sources contacted and the information gathered:

<u>Contact</u>	<u>Information Compiled</u>
Ken Thoman Town Clerk Southampton, New York (516) 283-6000	Files of Old North Sea Landfill
Assessors Office Town Hall Southampton, New York (516) 282-6000	Past and present owners of site.
Sy Martin Fish Cove Road North Sea, New York Resident near site	Interviewed about the Old landfill and what it was like.
Mr. Tony Candela Senior Sanitary Engineer New York State Department of Environmental Conservation Division of Solid and Hazardous Waste SUNY - Building #40 Stony Brook, NY 11794 (516) 751-7900	File/information
Mr. Martin Shea Fish and Wildlife Technician New York State Department of Environmental Conservation Bureau of Environmental Protocols Stony Brook, NY 11794 (516) 751-7900	Wetlands Information

Contact

Frank Randall
Suffolk County Department
of Health
225 Rabro Drive
Hauppauge, NY 11788
(516) 348-2756

Suffolk County Water
Authority
East Hampton Office
(516) 324-0959

New York State Department
of Environmental Conservation
Water Supply
SUNY - Building #40
Stony Brook, NY 11794
(516) 751-7900

Information Compiled

File/information

Information on population
served by public water.

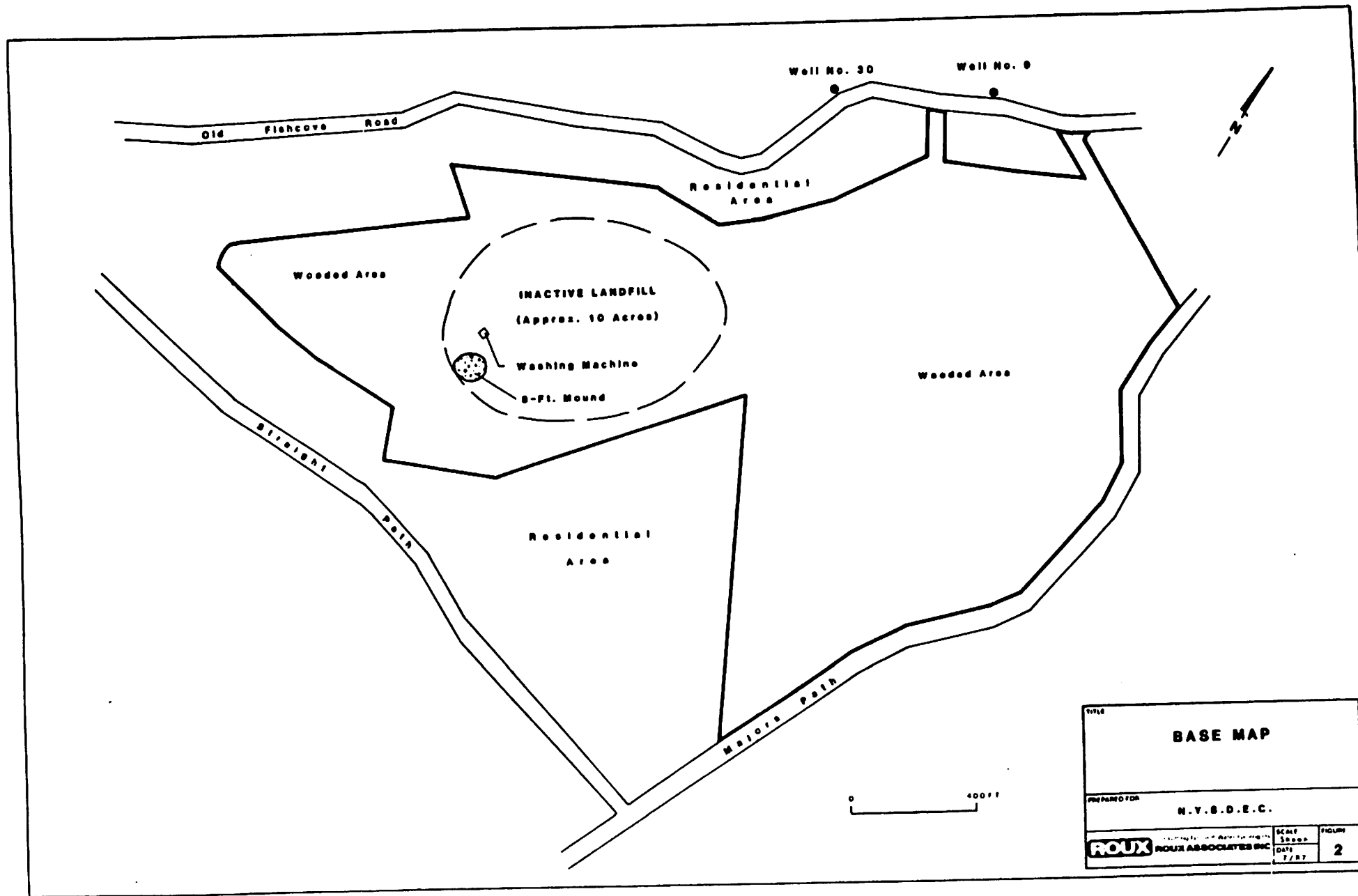
Number of Public Wells
within a 3 miles of Old
North Sea landfill.

4.0 SITE ASSESSMENT

4.1 Site History

The Old North Sea landfill is an inactive landfill, which during its use was owned by the Village of Southampton, New York. The village, and later the Town of Southampton, disposed of municipal wastes at the site. The area of disposed waste is approximately 10 acres (Figure 2). The landfill opened in 1930 and closed in 1963. In that time the Town of Southampton held a dumping contract from 1954-1959 and 1960-1962. The landfill closed when the new landfill opened. The active North Sea landfill has been placed on the National Priorities List by the U.S. Environmental Protection Agency. The present owner of the site is Howard Enterprises, Inc. of Southold, New York.

The landfill collected municipal wastes from the Southampton township. Pits dug on site contained the municipal wastes and were backfilled when full. There are no records to indicate that hazardous wastes were excluded from the landfill. There are no major industries located in the township.



TITLE	
BASE MAP	
PREPARED FOR	
N.Y.S.D.E.C.	
SCALE	FIGURE
3000 ft	2
DATE	7/87
ROUX ROUX ASSOCIATES INC.	

4.2 Site Topography

The site has almost no relief except a small 8 foot high sand pile at the south end of the landfill. Woods and shrubs surround an open area where waste was buried. The site slopes 6° - 3° to the North west toward the North Sea Harbor and Fish Cove. Fish Cove and North Sea Harbor are between $1/4$ and $1/2$ mile North of the site. Drainage from the site is toward these bodies of water.

4.3 Site Hydrogeology

Depth to water at the site is approximately 30 feet below land surface (Appendix A). The aquifer of concern near the site is the Upper Glacial and the Magothy formations. The Upper Glacial consists of fine to coarse sand and gravel and the Magothy is mainly fine to medium sand. Bedrock is approximately 1250 below land surface near the site. There is no confining clay layer between the two formations locally; (Jensen and Soren 1974) thus they are hydraulically connected. During a site visit it was determined that the surficial unsaturated zone was loose sand and gravel. Based on site visit observations it is believed that the unsaturated zone is moderately permeable.

4.4 Site Contamination

No analytical data is currently available for the old landfill; however ground-water monitoring has been performed in the area to monitor the active landfill, located across the street. The active North Sea Landfill has formed a plume of heavy metal contamination within the ground water. This plume is moving northwest towards Fish Cove where the ground water discharges into the cove. During Roux Associates site inspection on June 19, 1987, a plume was noted in the southeast corner of Fish Cove. The reddish-brown plume of water was seen where ground water was visibly entering the cove. The beach in this area was also stained a reddish-brown color and was void of all beach grass (in contrast to the surrounding area). An area resident also informed Roux Associates that his private well was contaminated about 8 years ago and his home has been hooked up to public water ever since.

The shallow depth to water and suspected high permeability of the unsaturated zone will allow any leachate that does occur to reach ground water. There are no records to indicate types and quantities of wastes disposed at the old landfill thus the probable nature of leachate (if any) is unknown and obscured by the active landfill leachate.

Looking north on the Old North Sea Landfill site.



Looking east, the active North Sea Landfill can be seen in the distance.



The whole site is sandy. The treeline marks the perimeter of the site. Beyond the tree-line is Fish Cove, less than one quarter mile away.



5.0 PRELIMINARY HRS

Documentation records and work sheets required to develop Hazard Ranking System (HRS) scores are included in this section. Information obtained from private, county, state and federal agencies was utilized to prepare as completely as possible the included HRS Scores. Documents included in this section are:

- o Preliminary Hazard Ranking System (HRS) work sheets
- o Preliminary Assessment Form (EPA Form 2070-12)
- o On Site Inspection Report (EPA Form 2070-13)
- o Updated NYSDEC Inactive Hazardous Waste Disposal Report.

5.1 Narrative Summary

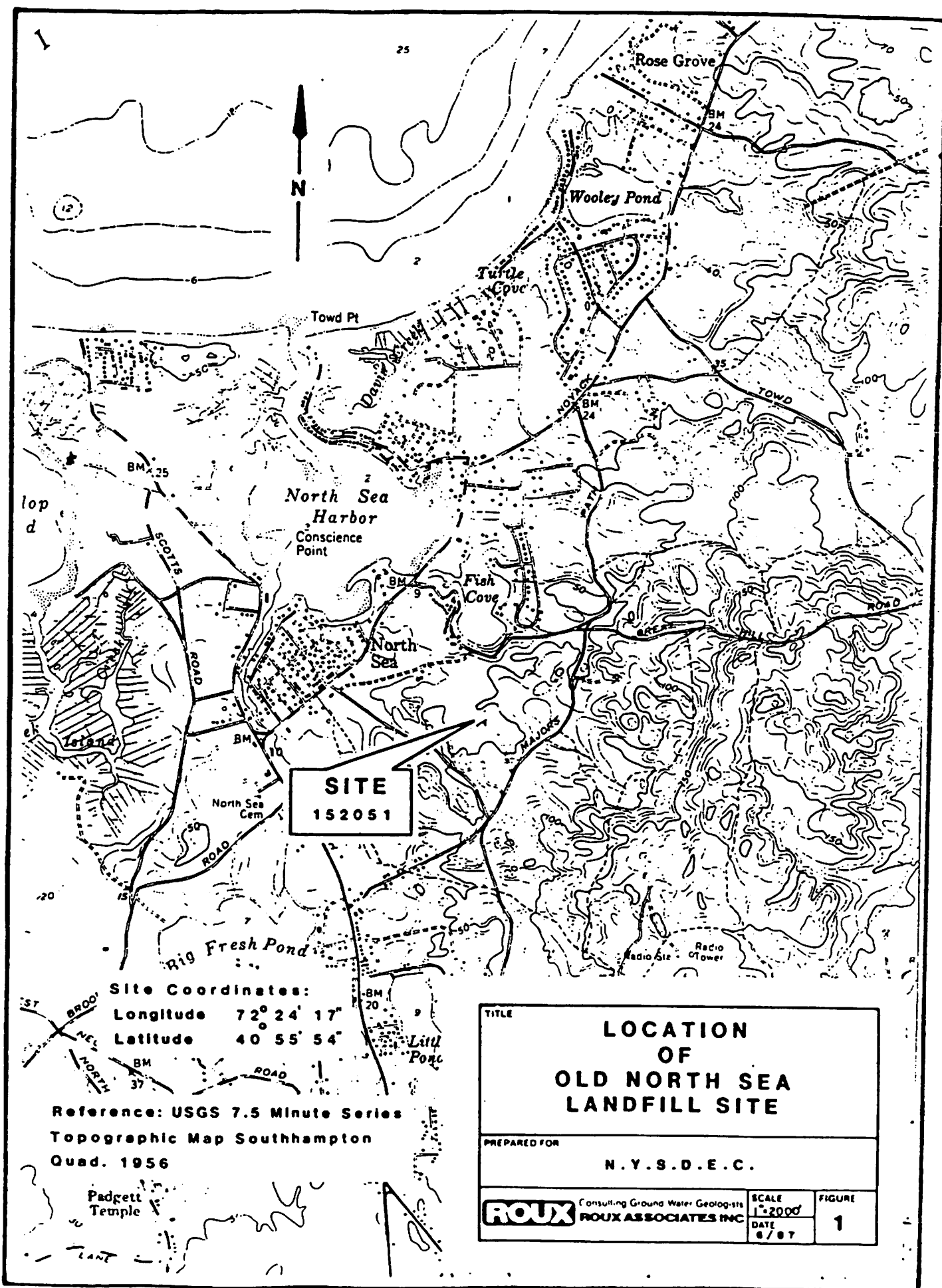
The Old North Sea Landfill site covers 10 acres in North Sea, Suffolk County, New York. The landfill opened in 1930 and was used by the Village and Town of Southampton until 1963 when it closed. The town held a dumping contract with the village from the years 1954 - 1959 and 1960 - 1962. The town purchased land near the old landfill in 1962-63 to open the present North Sea landfill. The present owner, Howard Enterprises, Inc. purchased the site in 1985.

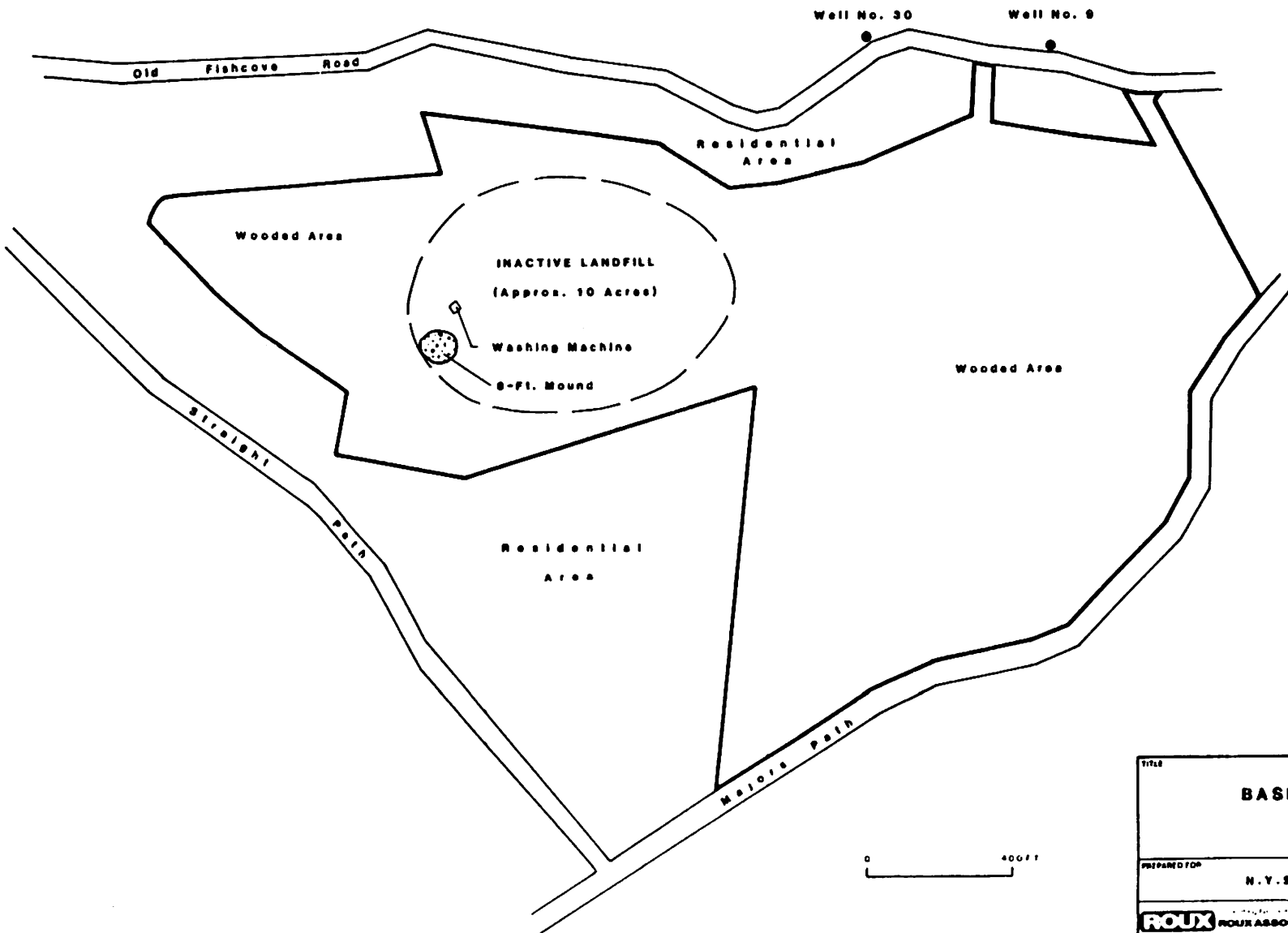
The landfill collected municipal wastes from the township of Southampton. There is no major industry in the township so it is unlikely that industrial waste was disposed of on site. According to Mr. Sy Martin, a nearby neighbor who used the landfill, people from the village went to the site and disposed of refuse. However, no waste management records or records of analytic tests for the site are on file at Town Hall.

Information obtained at the present North Sea landfill, which is approximately one quarter mile northeast of the site on Majors Path, indicates that groundwater is less than 30 feet below land surface. The possibility of groundwater contamination from leachate exists. The aquifer of

concern, the Upper glacial and the Magothy formations, are hydraulically connected locally. The Upper Glacial provides drinking water within a 3 mile radius of the site and serves about 8,000 people. Within one half mile of the site is the North Sea Harbor and Fish Cove where ground water discharges (Figure 1).

5.2 Site Location





TITLE	
BASE MAP	
PREPARED FOR	
N.Y.S.D.E.C.	
ROUX	ROUX ASSOCIATES INC.
DATE	FIGURE
7-87	2

5.3 HRS Worksheets

Facility name: Old North Sea Landfill

Location: Majors Path Southampton, NY

EPA Region: I

Person(s) in charge of the facility: None

Current owner of plot (60.4 acres) is
Howard Enterprises, Inc., Southold, NY

Name of Reviewer: Roux Associates, Inc. Date: June 22, 1987

General description of the facility:
 (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The Old North Sea landfill is on Majors Path, North Sea, NY. The
site was a village dump from 1930 to 1963. Refuse was disposed
in a dug pit, then backfilled with sand. Shallow depth to water,
less than 30 feet below land surface. Ground H₂O flows north-
northwest. Possible ground-water contamination which discharges
in the direction of Fish Cove and North Sea Harbor.

Scores: $S_M =$ ($S_{gw} = NS$ $S_{gw} = NS$ $S_a = NS$)
 $S_{FE} =$ No score.
 $S_{DC} =$ No score.

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	3.1	
If observed release is given a score of 45, proceed to line 4 . If observed release is given a score of 0, proceed to line 2 .						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	6	6		
Net Precipitation	0 1 2 3	1	3	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	1	3		
Physical State	0 1 2 3 No score.	1	NS	3		
Total Route Characteristics Score			NS	15		
3 Containment	0 1 2 3	1	3	3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	NS	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	NS	8		
Unknown waste. Used to be village dump, but no records.						
Total Waste Characteristics Score			NS	25		
5 Targets					3.5	
Ground Water Use	0 1 2 3	3	9	9		
Distance to Nearest Well/Population Served	0 4 8 12 16 20 24 30 36 40	1	32	40		
Total Targets Score			41	49		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			NS	57.330		
7 Divide line 6 by 57.330 and multiply by 100			S _{gw} = No score.			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	(0) 45	1	0	45	4.1	
If observed release is given a value of 45, proceed to line 4 . If observed release is given a value of 0, proceed to line 2 .						
2 Route Characteristics					4.2	
Facility Slope and Intervening Terrain	0 (1) 2 3	1	1	3		
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3		
Distance to Nearest Surface Water	0 1 (2) 3	2	4	6		
Physical State	0 1 2 3 No score.	1	NS	3		
Total Route Characteristics Score			NS	15		
3 Containment	(0) 1 2 3	1	0	3	4.3	
4 Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	NS	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	NS	8		
No data available.						
Total Waste Characteristics Score			NS	26		
5 Targets					4.5	
Surface Water Use	0 1 (2) 3	3	6	9		
Distance to a Sensitive Environment	0 1 2 (3)	2	6	6		
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 (16) 18 20 24 30 32 35 40	1	16	40		
Total Targets Score			28	55		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			NS	64.350		
7 Divide line 6 by 64,350 and multiply by 100			S _{sw} = No score.			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	5.1	
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the $S_a = 0$. Enter on line 5 . If line 1 is 45, then proceed to line 2 .						
2 Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3 No score.	1	NS	3		
Toxicity	0 1 2 3	3	NS	9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	NS	8		
Unknown waste.						
Total Waste Characteristics Score			NS	20		
3 Targets					5.3	
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30		
Distance to Sensitive Environment	0 (1) 2 3	2	2	6		
Land Use	0 1 2 (3)	1	3	3		
Total Targets Score			26	39		
4 Multiply 1 x 2 x 3			NS	35,100		
5 Divide line 4 by 35,100 and multiply by 100			$S_a =$ No score.			

FIGURE 9
AIR ROUTE WORK SHEET

	s	s ²
Groundwater Route Score (S _{gw})	No score	No score
Surface Water Route Score (S _{sw})	No score	No score
Air Route Score (S _a)	No score	No score
$S_{gw}^2 + S_{sw}^2 + S_a^2$		No score
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		No score
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		No score

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Containment	1 (3)	1	3	3	7.1	
2 Waste Characteristics					7.2	
Direct Evidence	0 3 No score	1	NS	3		
Ignitability	(0) 1 2 3	1	NS	3		
Reactivity	0 1 2 3	1	NS	3		
Incompatibility	(0) 1 2 3	1	NS	3		
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	NS	8		
Total Waste Characteristics Score			NS	20		
3 Targets					7.3	
Distance to Nearest Population	0 1 2 (3) 4 5	1	3	5		
Distance to Nearest Building	0 (1) 2 3	1	1	3		
Distance to Sensitive Environment	0 1 (2) 3	1	2	3		
Land Use	0 1 2 (3)	1	3	3		
Population Within 2-Mile Radius	0 1 2 (3) 4 5	1	3	5		
Buildings Within 2-Mile Radius	0 1 2 (3) 4 5	1	3	5		
Total Targets Score			15	24		
4 Multiply 1 x 2 x 3			NS 0	1,440		
5 Divide line 4 by 1,440 and multiply by 100			SFE = No score.			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Incident	0 45	1	0	45	8.1	
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2						
2 Accessibility	0 1 2 3	1	3	3	8.2	
3 Containment	0 15	1	0	15	8.3	
4 Waste Characteristics Toxicity	0 1 2 3 No score. 5		NS	15	8.4	
5 Targets					8.5	
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	8	20		
Distance to a Critical Habitat	0 1 2 3	4	0	12		
Total Targets Score			16	32		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600		
7 Divide line 6 by 21,600 and multiply by 100			SDC = No score.			

FIGURE 12
DIRECT CONTACT WORK SHEET

5.4 DOCUMENTATION RECORDS FOR HAZARD RANKING SYSTEM

FACILITY NAME: Old North Sea Landfill

LOCATION: Majors Path Road, Village of North Sea,
Town of Southampton, Suffolk County, New York

DATE SCORED: July 1, 1987

PERSON SCORING: Brian Thomas

PRIMARY SOURCES OF INFORMATION:

Site Inspection June 19, 1987. Mr. Sy Martin resident nearby site.

New York State Department of Environmental Conservation -
Division of Solid and Hazardous Waste.

Town Clerk of Southampton, New York.

FACTORS NOT SCORE DUE TO INSUFFICIENT INFORMATION:

Waste Characteristics.

Depth of lowest point of waste disposal to ground-water.

GROUND WATER ROUTE

1 Observed Release

Contaminants detected:

No data available.

Rationale for attributing the contaminants to the facility:

Not applicable.

Assigned value = 0

2 Route Characteristics

Depth to Aquifer of Concern:

Name/description of aquifer(s) of concern:

The Upper Glacial and Magothy aquifers are designated as the aquifers of concern within a three mile radius of the site. The Upper Glacial aquifer consists of fine to coarse sand and gravel and the Magothy is made up of fine to medium quartz sand.

There is no confining layer, near the site, between the two aquifers; therefore a hydraulic connection exist between the two aquifers.

Depths from ground surface to the highest seasonal level of the saturated zone (water table) of the aquifer of concern:

Monitoring wells from a ground-water monitoring program on the New North Sea Landfill indicate the water table is less than 30 feet from land surface. The old landfill is located 1/4 mile southwest of the new landfill (1).

Depth from the ground surface to the lowest point of waste disposal/storage:

No data available on the lowest point of waste disposal, however depth to water from land surface is less than 30 feet.

Assigned value = 3

Net Precipitation

Mean annual or seasonal precipitation = 46 inches (2).

Mean annual lake or seasonal evaporation = 22 inches (2).

Net Precipitation (subtract the above figures):

24 inches.

Assigned value = 3

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

The area locally is a till deposit, but the site is located on loose sand and gravel. Moderately permeable on saturated zone (4,5).

Permeability of Soil Type:

Permeability of till can be variable. From the site inspection the unsaturated zone is believed to be loose sand and gravel.

Assigned value = 2

Physical State of Waste

Unknown: No records on site

No score.

3 CONTAINMENT

Method of waste or leachate containment evaluated:

Surface impoundment - the site is an old landfill. It is likely that there was no liner and no run on diversion (4).

Assigned value = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

No data available.

No score.

Hazardous Waste Quantity

No data available.

No score.

5 TARGETS

Ground-Water Use

Use(s) of aquifer(s) of concern within a three mile radius of the facility:

Drinking water (2,5).

Assigned value = 3

Distance to Nearest Well

Location of nearest well drawing from aquifers of concern or occupied building not served by a public water supply:

A public - supply well is located approximately 1 mile from site (3).

Assigned value = 2

Population Served by Ground-Water Wells within a Three Mile Radius

Public Water supplies:

There are 13 pumping wells within a three mile radius of the site serving approximately 4,000 people. Most of these wells are located to the south of the site and serve Southampton.

A pumping well less than mile from site and a population of 4,000 within three mile radius (6).

Assigned value = 32

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No data available to confirm which facility has contaminated fish cove.

Assigned value = 0

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility <3% (4).

Average slope of intervening terrain in percent:

6% (10).

Assigned value = 1

1 Year, 24 Hour Rainfall in Inches

2.5 - 3.0 inches (3).

Assigned value = 2

Distance to Nearest Downslope Surface Water

Fish Cove is located 2000 feet north of site (10).

Assigned value = 2

Physical State of Waste

No data available

No score.

3 CONTAINMENT

Containment

Method(s) of waste leachate containment evaluated:

Landfill has adequate cover to prevent run off (4).

Assigned value = 0

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

No data available.

No score.

Hazardous Waste Quality

No data available.

No visible evidence at site inspection (4).

No score.

5 TARGETS

Surface Water Use

Use(s) of surface water within three miles downstream of the hazardous substance:

Recreational (4).

Assigned value = 2

Distance to a Sensitive Environment

Distance to coastal wetlands:

Approximately one half mile (8).

Assigned value = 2

Population Served/Distance to Water in take Downstream

Location(s) of surface water with water intake within three miles (free-flowing) or 1 mile (static) downstream from facility and population served:

Fish Cove and North Sea Harbor 2000 feet to 1 mile north of site. Recreational use population served approximately 700 people (10).

Combined value = 16

AIR ROUTE

1 OBSERVED RELEASE

No data available on observed release of contaminants.

No air monitoring performed.

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

No data available.

Most incompatible pair of compounds:

No data available.

Toxicity

Most toxic compound:

No data available

Hazardous Waste Quantity

Total quantity of hazardous waste:

No data available

Basis of estimating and/or computing waste quantity:

No data available.

No score.

3 TARGETS

Population Within a four Mile Radius

Underline radius used, give population and indicate how determined:

0 to 4 miles 0 to 1 mile 0 to 1/2 mile 0 to 1/4 mile

Within a four mile radius a population of approximately 45,000 people (7).

Assigned value = 21

Distance to a Sensitive Environment

Distance to a 5-acre (minimum) coastal wetland, if 2 miles or less:

Coastal wetlands within 2 miles (8).

Assigned value = 2

Land Use

Distance to residential area:

Approximately 400 feet (4,11).

Assigned value = 3

FIRE AND EXPLOSION

1 CONTAINMENT

No measures have been taken to minimize or prevent hazardous substances from catching fire or exploding.

Assigned value = 3

2 WASTE CHARACTERISTICS

Direct Evidence

No data available.

No score.

Ignitability

No data available.

No score.

Reactivity

No data available.

No score.

Incompatibility

No data available.

No score.

Hazardous Waste Quantity

No data available.

No score.

3 TARGETS

Distance to Nearest Population

Nearest population is located approximately 400 feet north from site (4).

Assigned value = 3

Distance to Nearest Building

Distance to nearest building is 400 feet north off site (4).

Assigned value = 1

Distance to Nearest Sensitive Environment

No sensitive environment of endangered species within one mile (9).

Assigned value = 0

Land Use

Residential area within 1/4 mile (4).

Assigned value = 3

Population within two mile radius

Population within two mile radius approximately 3000 people (7).

Assigned value = 3

Buildings Within Two Mile Radius

Approximately 790 buildings within a two mile radius of the site (10).

Assigned value = 3

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location and pertinent details of incident;

No incident reported, none observed.

Assigned value = 0

2 ACCESSIBILITY

Describe detail(s) of barrier(s):

Site has a dirt driveway with no trespassing sign on a chain barrier across driveway. All other sides are wooded with trails leading to site (4).

Barriers do not surround the facility (4).

Assigned value = 3

3 CONTAINMENT

Type of containment:

The waste was placed in a trench(es). The facility has been inactive for over twenty years and the landfill had been covered since it's closing (4).

Assigned value = 0

4 WASTE CHARACTERISTICS

Toxicity

No available data.

No score.

5 TARGETS

Population Within a One Mile Radius

Approximately 1200 people live within a one mile radius (7).

Assigned value = 2

Distance to a Critical Habitat (of an Endangered Species)

Greater than 1 mile (9).

Assigned value = 0

<u>Reference #</u>	<u>Description of Reference</u>
1	Holzmacher, McLendon and Murrel, P.C. (H2M) "Annual Ground Water Monitoring Report" North Sea Landfill.
2	Hydrogeology of Brookhaven National Laboratory and Vicinity Suffolk County, New York Geological Survey Bulletin 1156-C
3	USGS 1987 Header file well locations. Available at NYSDEC.
4	Roux Site Inspection June 19, 1987. Notes available at Roux Associates
5	Jensen and Soren, 1974 Hydrogeology of Suffolk County, Long Island, New York.
6	Uncontrolled Hazardous Waste Site Ranking System, A Users Manual
7	Long Island Almanac 1987. Population breakdown by community
8	New York State Department of Environmental Conservation; Bureau of Environmental Protection, Region I. National Wetlands Inventory Map
9	New York State Department of Environmental Conservation, - Bureau of environmental Protection, Region I. National Wildlife Inventory Map, 1987. Map not available for this report.
10	USGS 1957 Topographic map; Southampton Quadrangle
11	Hagstrom Map Suffolk County

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HOLZMACHER, McLENDON and MURRELL, P.C. • CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
125 BAYLIS ROAD, SUITE 140, MELVILLE, N.Y. 11747 • 516-752-9080

January 13, 1983

Supervisor Martin Lang
and Members of the Town Board
Town of Southampton
116 Hampton Road
Southampton, New York 11968

Re: North Sea Landfill
Groundwater Monitoring Report
SHMP 82-01

Gentlemen:

We are pleased to submit herewith our "Annual Groundwater Monitoring Report" for the North Sea Landfill in accordance with our proposal dated August 18, 1982, and agreement dated November 12, 1982.

The report presents a summary, comparison and interpretation of the results from two annual samplings for priority pollutants, as well as three quarterly samplings for the constituents required by the New York State Department of Environmental Conservation.

Upon your review and approval, please submit a copy of this report to Mr. Theodore Sanford, P.E., New York State Department of Environmental Conservation, Stony Brook, New York as required by your permit. At your convenience, we would be pleased to meet with you to review any aspects of this report.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

A handwritten signature in cursive script, appearing to read 'Gary E. Loesch'.

Gary E. Loesch, P.E.

GEL/CLD/mf

Enc.

SCOPE

The Town of Southampton authorized the firm of Holzmacher, McLendon & Murrell, P.C. (H2M) to perform quarterly sampling and analysis of one upgradient and six downgradient monitoring wells to determine the amount of and extent of leachate migration from the North Sea landfill.

The wells were analyzed for quarterly constituents as required by the New York State Department of Environmental Conservation (NYSDEC) in their Guidelines for Solid Waste Management Facilities, and satisfies the requirements of Part 360, Title 6 of the New York State Official Compilation of Codes, Rules and Regulations. Further, analysis of the wells was also performed on an annual basis for an expanded list of constituents (priority pollutants). This represents the annual constituents required for testing by the NYSDEC, as well as several constituents requested by the Town, notably Arochlors (PCB's) and Aldicarb (Temik).

As proposed, this report summarizes the analyses for the three quarterly and two annual samplings for the period from September 9, 1981 through November 3, 1982 (Section Two). The data collected at these sampling intervals has been utilized to determine any changes in the areal extent of the leachate plume during the sampling period, as well as a comparison of the New York State Groundwater Quality and Drinking Water Standards (Section Three). It closely follows the 1981 Annual Groundwater Sampling Report previously prepared by H2M.

1.0 PREVIOUS STUDIES AND REPORTS

There have been several studies of the groundwater quality in the vicinity of the North Sea landfill conducted over the past several years.

These include two studies released in 1979: the SCDHS Report entitled, "Leachate Investigation of North Sea Landfill," Town of Southampton, October 1979; and an H2M Report for the Town of Southampton entitled, "Water Quality Survey - North Sea Area," October 1979. Based on the results from these two studies, the NYSDEC issued a conditional permit to the Town of Southampton in September 1980. Subsequently, additional testing was performed by H2M, and the results presented in the McLean/H2M report, entitled, "Town of Southampton - Study and Report - North Sea Landfill," dated January 1981.

Then in September 1981, the Town of Southampton authorized H2M to begin an annual water sampling and analysis program that consisted of quarterly sampling at seven well locations. The initial sampling was performed on September 8, 1981. The results were then presented in the H2M "Annual Groundwater Monitoring Report," dated October 1981. This compared the most recent data with the reports previously mentioned.

The following conclusions were drawn from the above:

1. The direction of groundwater flow (to the northwest) has remained unchanged since the SCDHS Report in 1979.

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2. The leachate contaminated groundwater was still present to the northwest, with no appreciable dispersion of the plume indicated in other directions.

3. That within the leachate plume, there existed a narrow plume or "slug" of groundwater contaminated with lead in concentrations exceeding the recommended standards. This "slug" was located in the east portion of the plume, as detected in Wells No. 1 and 9.

4. That the New York State Drinking Water Standards were exceeded in Well No. 1 for lead, and slightly exceeded in Well No. 9 for cadmium, mercury and lead.

The New York State Groundwater Standards were exceeded in: Well No. 1 for iron, lead, manganese and vinyl chloride; Well No. 9 for cadmium, mercury, lead, manganese and iron; Well No. 30 for iron and manganese and slightly depressed pH levels for Wells 10 and 29.

5. There were no appreciable levels of either Aldicarb (Temik) or Arochlors (PCB's) detected in the samples.

The Aldicarbs are being monitored because of increased public concern over their widespread use in the past on Long Island as an insecticide. Arochlors were detected in minute amounts by the NYSDEC in July of 1981 in Well No. 30. Because of this concern, the Town of Southampton has voluntarily supplemented their required testing constituents to include Aldicarb and Arochlors.

6. That to accurately predict the contribution of landfill leachate to the background groundwater concentrations, an upgradient monitoring well should be installed and included in the sampling and analysis program.

This report also made the following recommendations:

1. Discontinue sampling for Aldicarb and Archlors because both H2M's and a SCDHS Report confirmed no detectable levels.

2. Private wells already affected by the plume have been connected to public water supplies, and the results indicated that this supply does not need to be extended to other wells.

3. The upgradient monitoring well should be installed.

4. Quarterly and annual testing and analysis should continue.

2.0 GROUNDWATER MONITORING WELLS AND SAMPLING

2.1 GROUNDWATER WELL LOCATIONS

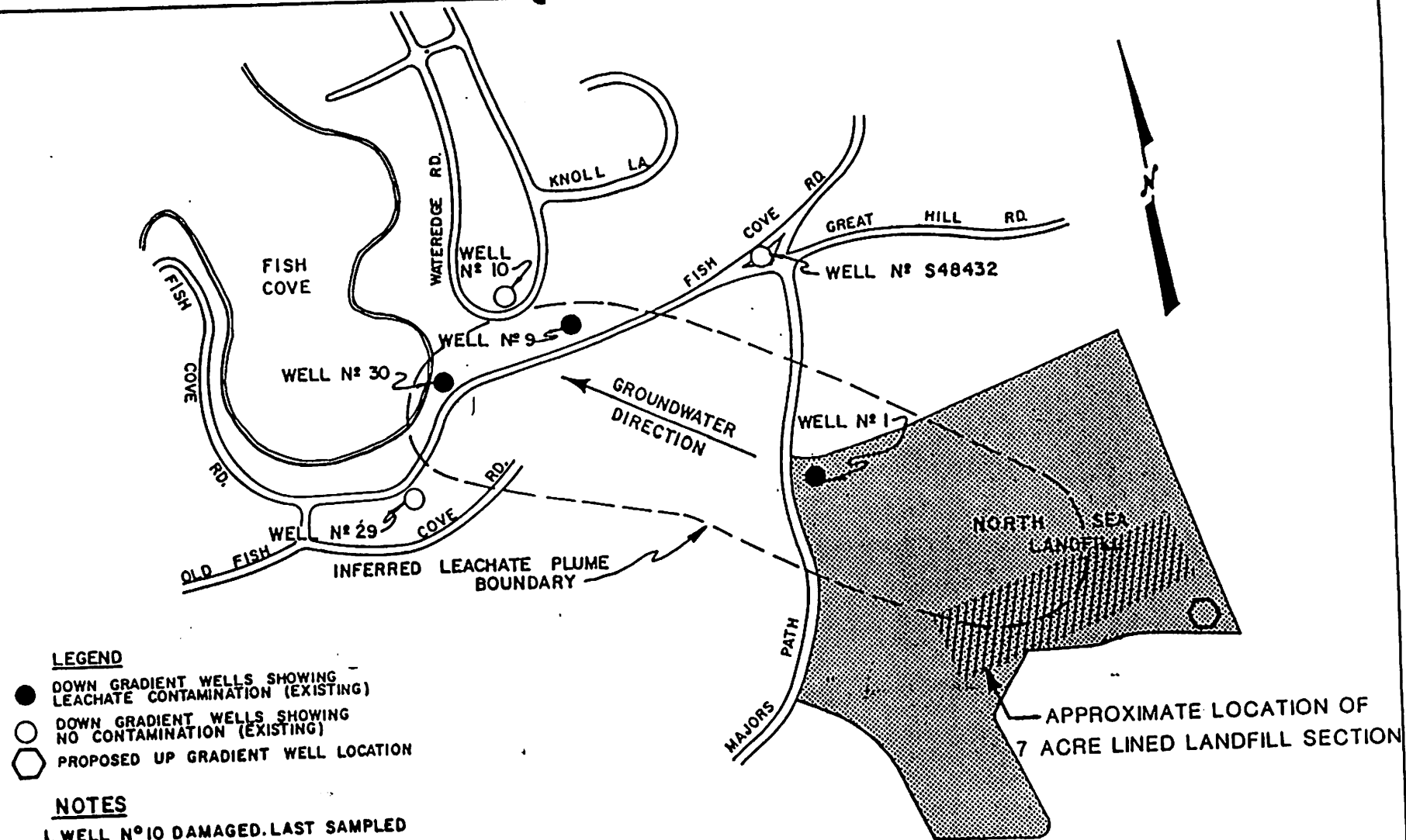
The groundwater monitoring wells consist of six downgradient monitoring wells (Nos. 1, 9, 10, 29, 30 and S-48432). Well 10 was not sampled during the 1981-1982 annual program because of destruction of the well prior to the December 22, 1981 sampling. Additionally, Well No. 1 (at the northwest corner of the landfill property) was damaged prior to the November 3, 1982 sampling and could not to be sampled with our available equipment. The Suffolk County Department of Health Services advises us that Well No. 1 can be bailed using a smaller diameter bailer, and a new bailer will be purchased. Further, Well No. 10 has been replaced and will be included in future samplings.

The upgradient monitoring well is scheduled to be installed in January/February 1983 and will, therefore, be included in the March, 1983 sampling with the other six wells.

The locations of these wells, and the landfill are shown in Figure 2-1, Monitoring Well Location. This map also shows the inferred leachate plume boundary and the location of the newly lined seven acre landfill section.

2.2 SAMPLING PROCEDURE

Wells (1, 9, 10, 29 and 30) are all two-inch PVC wells that are either bailed manually, or they are sampled using a centrifugal pump. Well No. S-48432 is sampled using a submersible

**LEGEND**

- DOWN GRADIENT WELLS SHOWING LEACHATE CONTAMINATION (EXISTING)
- DOWN GRADIENT WELLS SHOWING NO CONTAMINATION (EXISTING)
- PROPOSED UP GRADIENT WELL LOCATION

NOTES

1. WELL N°10 DAMAGED. LAST SAMPLED ON SEPTEMBER 8, 1981.
2. WELL N°1 DAMAGED. LAST SAMPLED ON JUNE 10, 1982.

MONITORING WELL LOCATIONS

TOWN OF SOUTHAMPTON
GROUNDWATER MONITORING PROGRAM

SOURCE: SUFFOLK COUNTY DEPARTMENT
OF HEALTH SERVICE, 1979

SCALE: 1"=500'±



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pump. In accordance with recognized procedures (EPA/530/SW-611, August 1977), the wells are evacuated three to five times their volume before sampling. This prevents the collection of stagnant water and potentially misrepresentative samples.

2.3 SAMPLING RESULTS

The results for the 1981 - 1982 sampling period are shown on Tables 2-1 through 2-4, and are presented for each quarter as reported to the Town of Southampton.

The comparison and analysis of these sampling results are presented in the following section, "Discussion of Sampling Results."

TABLE 2-1

TOWN OF SOUTHAMPTON

GROUNDWATER MONITORING

QUARTERLY SAMPLING RESULTS - DECEMBER 1981 **

WELL #	1	9	10*	29	30	S-48432
SAMPLE DATE:	12/22/81	12/22/81		12/22/81	12/22/81	12/22/81
SAMPLE DEPTH	42 ft.	27 ft.		14 ft.	12 ft.	41 ft.
Ammonia (NH ₃ -N)	5.2	12.2		<.2	13.8	<.2
Chlorides	57	45		50	40	15
Nitrate (NO ₃ -N)	<0.1	<0.1		0.8	<0.1	<0.1
Detergent (MBAS)	<0.04	<0.04		<0.04	<0.04	<0.04
Iron	<u>59.7</u>	<u>2.57</u>		<0.02	<u>23.9</u>	0.24
Specific Conduc- tivity (umhos/cm)	800	650		140	500	65
TDS	580	400		118	310	57
ph (units)	6.4	6.4		6.7	6.5	6.4
Lead (Pb)	<u>.1</u>	<u>.074</u>		<.002	<.002	<.002
Total Organic Carbon	6.7	6.3		.26	4.4	.65

* Well Damaged, Could not sample.

** All quantities in mg/l except as noted.

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TABLE 2-2

TOWN OF SOUTHAMPTON

GROUNDWATER MONITORING

QUARTERLY SAMPLING RESULTS - MARCH 1982 **

WELL #	1	9	10*	29	30	S-48432
SAMPLE DATE	3/10/82	3/10/82		3/10/82	3/10/82	3/10/82
SAMPLE DEPTH	42 ft.	27 ft.		14 ft.	12 ft.	41 ft.
Ammonia (NH ₃ -N)	6.60	4.20		0.04	5.20	<0.02
Chloride	80.0	40.0		13.0	41.0	9.0
Nitrate (NO ₃ -N)	0.30	0.20		0.90	<0.10	<0.10
Detergent (MBAS)	<0.04	<0.04		<0.04	<0.04	<0.04
Iron	57.2	2.76		0.70	19.3	0.20
Specific Conduc-						570
tivity (umhos/cm)	800	540		135	400	
TDS	322	107		51	120	21
ph (units)	6.4	6.5		6.3	6.4	5.9
Lead (Pb)	0.18	0.049		0.025	<0.002	<0.002
Total Organic Carbon	41.4	16.5		13.0	9.2	<0.05

* Well damaged. Could not sample.

** All quantities in mg/l except as noted.

1.10.32

TABLE 2-3
TOWN OF SOUTHAMPTON
GROUNDWATER MONITORING
QUARTERLY SAMPLING RESULTS - JUNE 1982 **

WELL #	1	9	10*	29	30	S-48432
SAMPLE DATE	6/10/82	6/10/82		6/10/82	6/10/82	6/10/82
SAMPLE DEPTH	41.2 ft.	27.5 ft.		14.1 ft.	11.7 ft.	42.9 ft.
Ammonia (NH ₃ -N)	5.20	4.80		0.56	4.50	0.23
Chloride	87.0	35.0		12.0	49.0	9.0
Nitrate (NO ₃ -N)	<0.10	<0.10		0.50	<0.10	<0.10
Detergent (MBAS)	<0.04	<0.04		<0.04	<0.04	<0.04
Iron	58.0	1.76		0.08	19.3	0.42
Specific Conductivity (umhos/cm)	1100	600		150	550	70
TDS	570	330		80	250	50
ph (units)	6.6	6.7		6.6	6.7	6.6
Lead (Pb)	0.20	0.08		<.002	<0.002	<0.002
Total Organic Carbon	68.7	36.6		1.73	19.2	1.29

* Well damaged. Could not sample.

** All quantities in mg/l except as noted.

1.11.32

TABLE 2-4

TOWN OF SOUTHAMPTON

GROUNDWATER MONITORING ANNUAL SAMPLING RESULTS - NOVEMBER, 1982 **

WELL #	1*	9	10*	29	30	S-48432	N. Y.S. Drinking Water Standards	N.Y.S. Groundwater Standards
SAMPLE DATE	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82		
SAMPLE DEPTH	--	27.9 ft	--	14.8 ft	11.6 ft	42.7 ft		
Ammonia (NH ₃ -N)	-	<.02	-	<0.02	11.4	<.02	-	-
Chlorides	-	29	-	20.0	48	8	250.	250.
Flouride	-	0.10	-	0.10	.11	.10	-	1.5
Cyanide	-	0.005	-	0.005	0.005	.005	-	.20
Deterg. (MBAS)	-	<0.04	-	<0.04	<0.04	<0.04	-	.50
Nitrate (NO ₃ -N)	-	.2	-	1.00	.3	.5	10.0	10.0
Phenols	-	<0.001	-	<0.001	<0.001	<.001	-	.001
Spec. Cond. (umhos/cm)	-	480.0	-	140.0	470.0	60.	-	-
Sulfate	-	33.0	-	15.0	5.0	7.	250.	250.0
Total Diss. Solids	-	281.0	-	104.0	240.0	53.	-	1000.
Total Org. Carbon	-	13.0	-	.97	7.9	2.9	-	-
Ph. (units)	-	6.9	-	6.5	6.8	(6.2)	-	6.5 -8.5
Hex. Chromium	-	0.02	-	0.02	0.02	.02	.05	.05

* WELL DAMAGED. COULD NOT SAMPLE.

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

TABLE 2-4 (CONT.)

TOWN OF SOUTHAMPTON

ANNUAL GROUNDWATER MONITORING SAMPLING RESULTS - NOVEMBER, 1982 **

WELL #	1*	9	10*	29	30	S-48432	mg/L N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
SAMPLE DATE	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82		
SAMPLE DEPTH	-	27.9 ft	-	14.8 ft	11.6 ft	42.7 ft		
Arsenic	-	.002	-	<.002	<.002	<.002	.05	.025
Barium	-	.3	-	<.2	.4	<.20	1.0	1.0
Cadmium	-	.0036	-	<.0011	.0016	<.001	.01	.01
Copper	-	.09	-	<.02	<.02	<.02	1.0	1.0
Iron	-	(1.51)	-	<.02	(27.9)	(1.41)	0.3	.3
Lead	-	.0205	-	<.002	<.002	<.002	.05	.025
Manganese	-	(11)	-	<.02	(12.5)	.04	0.3	.3
Mercury	-	<.0005	-	<.0005	<.0005	<.0005	.002	.002
Selenium	-	<.002	-	<.002	<.002	<.002	.01	.02
Silver	-	<.02	-	<.02	<.02	<.02	.05	.05
Zinc	-	.02	-	<.02	<.02	.03	5.0	5.0

* WELL DAMAGED. COULD NOT SAMPLE

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED

TABLE 2-4 (CONT.)

TOWN OF SOUTHAMPTON

ANNUAL GROUNDWATER MONITORING SAMPLING RESULTS - NOVEMBER, 1982 **

WELL #	1*	9	10*	29	30	S-48432	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
DATE OF SAMPLE	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82		
SAMPLE DEPTH		27.9 ft		14.8 ft	11.6 ft	42.7 ft		
methylene chloride	-	< 1	-	< 1	< 1	< 1	-	-
1,1-dichloroethylene	-	< 1	-	< 1	< 1	< 1	-	-
1,1-dichloroethane	-	< 1	-	< 1	1	< 1	-	-
trans-1,2-dichloroethylene	-	< 1	-	< 1		< 1	-	-
cis-1,2-dichloroethylene	-	< 1	-	< 1	3	< 1	-	-
chloroform	-	< 1	-	< 1	< 1	2	-	100
1,1,2-trichlorotrifluoroethane	-	< 1	-	1	< 1	< 1	-	-
1,2-dichloroethane	-	< 1	-	< 1	< 1	< 1	-	ND
1,1,1-trichloroethane	-	< 1	-	< 1	< 1	< 1	-	5.0
carbon tetrachloride	-	< 1	-	< 1	< 1	< 1	-	-
bromodichloromethane	-	< 1	-	< 1	< 1	< 1	-	-
1,2-dichloropropane	-	< 1	-	< 1	< 1	< 1	-	-
2,3-dichloropropene	-	< 1	-	< 1	< 1	< 1	-	-

* WELL DAMAGED. COULD NOT SAMPLE

** ALL QUANTITIES IN ug/l EXCEPT AS NOTED

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TABLE 2-4 (CONT.)

TOWN OF SOUTHAMPTON

ANNUAL GROUNDWATER MONITORING SAMPLING RESULTS - NOVEMBER, 1982 **

WELL #	1*	9	10*	29	30	S-48432	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
SAMPLE DATE	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82		
SAMPLE DEPTH	-	27.9 ft	-	14.8 ft	11.6 ft	42.7 ft		
trans-1,3-dichloropropene	-	< 1	-	< 1	< 1	< 1	-	-
trichloroethylene	-	< 1	-	< 1	< 1	< 1	-	10
1,1,2-trichloroethane	-	< 1	-	< 1	< 1	< 1	-	-
chlorodibromomethane	-	< 1	-	< 1	< 1	< 1	-	-
cis-1,3-dichloropropene	-	< 1	-	< 1	< 1	< 1	-	-
bromoform	-	< 1	-	< 1	< 1	< 1	-	-
1,1,1,2-tetrachloroethane	-	< 1	-	< 1	< 1	< 1	-	-
tetrachloroethylene	-	< 1	-	< 1	< 1	< 1	-	-
1,1,2,2-tetrachloroethane	-	< 1	-	< 1	< 1	< 1	-	-
vinyl chloride	-	< 1	-	< 1	< 1	< 1	-	5.0
chlorobenzene	-	< 1	-	< 1	1	< 1	-	-

* WELL DAMAGED. COULD NOT SAMPLE.

** ALL QUANTITIES IN ug/l EXCEPT AS NOTED.

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TABLE 2-4 (CONT.)

TOWN OF SOUTHAMPTONANNUAL GROUNDWATER MONITORING SAMPLING RESULTS - NOVEMBER, 1982**

WELL #	1*	9	10*	29	30	S-48432	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
SAMPLE DATE	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82	11/3/82		
SAMPLE DEPTH	-	27.9 ft	-	14.8 ft	11.6 ft	42.7 ft		
Lindane	-	<0.03	-	<0.03	<0.03	<0.03	4.0	ND
Heptachlor	-	<0.03	-	<0.03	<0.03	<0.03	-	ND
Aldrin	-	<0.03	-	<0.03	<0.03	<0.03	-	ND
Heptachlor epoxide	-	<0.03	-	<0.03	<0.03	<0.03	-	ND
Dieldrin	-	<0.04	-	<0.04	<0.04	<0.04	-	ND
Endrin	-	<0.06	-	<0.06	<0.06	<0.06	0.2	ND
O, P' DDT	-	<0.07	-	<0.07	<0.07	<0.07	-	ND
P, P' DDT	-	<0.09	-	<0.09	<0.09	<0.09	-	ND
Methoxychlor	-	<1.0	-	<1.0	<1.0	<1.0	100	35.0
Toxaphene	-	<2.5	-	<2.5	<2.5	<2.5	5.0	ND
Chlordane	-	<0.5	-	<0.5	<0.5	<0.5	3.0	0.1
Aldicarb	-	<1	-	<1	<1	<1	-	.35
PCBs (TOTAL)	-	<0.5	-	<0.5	<0.5	<0.5	-	.1

* WELL DAMAGED COULD NOT SAMPLE.

** ALL QUANTITIES IN ug/l EXCEPT AS NOTED.

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NOTES:

1. ○ denotes samples and standards exceeded.
2. ND not detectable as per section 703.4 of N.Y.S. Groundwater Classification Part 703.
3. < denotes less than.
4. ug/l denotes micrograms/liter, where mg/l denotes milligrams/liter.

Groundwater Table Elevation as recorded by H2M - November 3, 1982

	Depth to GW (ft.)	Approx. Ground Elevation (ft.)	Approx. GW Table Elevation (ft.)
NS-1	41.2*	50	8.8
NS-9	27.9	35	7.1
NS-10	22.0**	20	8
NS-29	14.8	20	5.2
NS-30	11.6	20	8.4
S-48432	42.9	50	7.1

* Elevation recorded June 10, 1982

** Elevation recorded September 9, 1981

3.0 DISCUSSION OF SAMPLING RESULTS

The amount of leachate produced and the resultant concentrations of leachate in the groundwater below and downgradient from the landfill is dependent upon various contributing factors. These include rainfall intensity, degree of runoff from the landfill, the ability of the cover soil to prevent infiltration, absorptive capacity of the solid waste, attenuation of some pollutants by the underlying soils, and groundwater characteristics.

This section will present those parameters that have historically indicated the presence of leachate contamination, along with a tabular comparison of the sampling results, and a discussion of any trends on the leachate concentrations and/or plume movements.

3.1 LEACHATE INDICATORS

There have been several parameters that have been widely used as indicators of leachate contamination in groundwater, and which have found additional use in mapping leachate plumes.

We have noted in earlier reports (Annual Groundwater Sampling Report, H2M, October 1981) that concentrations of ammonia greater than 1 mg/l, and specific conductivity readings in excess of 300 umhos/cm are relative values used to indicate the presence of leachate.¹ In addition, the concentration of total organic carbon greater than 5 mg/l is generally used to indicate landfill

1. Suffolk County Department of Health Services "Leachate Investigation, North Sea Landfill," October, 1979.

leachate contamination in groundwater.² Other non-site specific leachate parameters include iron, chloride, sulfate and changes in pH.

Two departments within New York State set standards for water quality. The NYSDEC under Part 703.5, has promulgated classes and quality standards for groundwater (Class GA Waters), and the New York State Health Department has promulgated Drinking Water Standards and guidelines.

The relative contribution of landfill leachate to the pollutant levels of the groundwater system will require background (upgradient) information for complete determination. The existing network of wells has served to monitor any spread of the plume, determined by concentrations of the leachate indicators, at or near the noted standards. However, until such time as the up-gradient well is installed and sampled, groundwater trends will be difficult to assess. A comparison of selected results of the annual and the quarterly sampling program are shown on Tables 3-1 through 3-7.

3.2 COMPARISON OF WELL DATA AND PLUME STATUS

The analysis of the 1981 - 1982 quarterly and annual sampling data indicate that the leachate has not expanded significantly either in the longitudinal or lateral direction. The lead slug in the leachate plume which was noted in our earlier report, was concentrated along the east side of the plume at Wells No. 149

2. United States Department of the Interior, U.S. Geological Survey, "Leachate Plumes in Groundwater from Babylon and Islip Landfills," 1977

TABLE 3-1
TOWN OF SOUTHAMPTON

COMPARISON OF ANNUAL GROUNDWATER SAMPLING RESULTS **

WELL NUMBER DATE SAMPLED PARAMETER (MG/L)	1 11/3/82* (9/8/81)	9 11/3/82 (9/8/81)	10 11/3/82* (9/8/81)	29 11/3/82 (9/8/81)	30 11/3/82 (9/8/81)	S-48432 11/3/82 (9/8/81)***	N. Y. S. Drinking Water Standards	N. Y. S. Groundwater Standards
ARSENIC	- (0.16)	.002 (.002)	- (<.002)	<.002 (<.002)	<.002 (<.002)	<.002 -	.05	.025
BARIUM	- (.3)	.30 (.4)	- (<.2)	<.2 (<.2)	.40 (<.7)	<.20 -	1.0	1.0
CADMIUM	- (.0015)	.0036 (.024)	- (<.001)	<.0011 (<.001)	.0016 (<.001)	<.001 -	.01	.01
CHROMIUM (HEXAVALENT)	- (.02)	<.02 (.02)	- (.02)	<.02 (.02)	<.02 (.02)	<.02 -	.05	.05
COPPER	- (.06)	.09 (.51)	- (<.02)	<.02 (<.02)	<.02 (.02)	<.02 -	1.0	1.0
CYANIDE	- (<.005)	<.005 (<.005)	- (<.005)	<.005 (<.005)	<.005 (<.005)	<.005 -	-	.20
FLOURIDE	- (<.1)	<.10 (<.10)	- (<.10)	<.10 (<.10)	.11 (<.10)	<.10 -	2.2	1.5
MANGANESE	- (3.99)	11.0 (15.0)	- (<.02)	<.02 (<.02)	12.5 (7.35)	.04 -	.3	.3
MERCURY	- (<.0005)	<.0005 (.0025)	- (<.0005)	<.0005 (<.0005)	<.0005 (<.0005)	<.0005 -	.002	.002
PHENOLS	- (<.001)	<.001 (<.001)	- (<.001)	<.001 (<.001)	<.001 (<.001)	<.001 -	-	.001
SELENIUM	- (<.002)	<.002 (<.002)	- (<.002)	<.002 (<.002)	<.002 (<.002)	<.002 -	.01	.02
SILVER	- (<.02)	<.02 (<.02)	- (<.02)	<.02 (<.02)	<.02 (<.02)	<.02 -	.05	.05
SULFATE	- (75.0)	33.0 (48.0)	- (8.0)	15.0 (11.0)	5.00 (23.0)	7.00 -	250	250
ZINC	- (.24)	.02 (.07)	- (<.02)	<.02 (<.02)	<.02 (<.02)	.03 -	5.0	5.0

* WELL DAMAGED. COULD NOT SAMPLE

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED

*** THESE PARAMETERS NOT TESTED IN 1981

1.20.32

TABLE 3-2
TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS **

WELL NUMBER 1

DATE SAMPLED DEPTH OF SAMPLE	9/8/81 42'	12/22/81 42'	3/10/82 42'	6/10/82 41.2'	11/3/82 *	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
Ammonia (NH ₃ -N)	16.4	5.2	6.6	5.2		-	-
Chloride	60.0	57.0	80.0	87.0		250	250
Nitrate (NO ₃ -N)	<0.10	<.10	.30	<.10		10.0	10.0
Detergent (MBAS)	<.04	<.04	<0.04	<0.04		-	0.5
Iron	(41.5)	(59.7)	(57.2)	(58.0)		0.3	.0.3
Specific Conductivity (umhos/cm)	700.0	800.0	800.0	1100.0		-	-
Total Dissolved Solids	440.0	580.0	322.0	570.0		-	1000
pH (Units)	6.6	(6.4)	(6.4)	6.6		-	6.5-8.5
Lead (Pb)	(.085)	(.10)	(.18)	(.20)		.05	.025
Total Organic Carbon	5.2	6.7	41.4	68.7		-	-

* WELL DAMAGED. COULD NOT SAMPLE

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

1.21.32

TABLE 3-3
TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS *

WELL NUMBER 9

DATE SAMPLED DEPTH OF SAMPLE	9/8/81 27'	12/22/81 27'	3/10/82 27'	6/10/82 27.5'	11/3/82 27.9'	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
Ammonia (NH ₃ -N)	13.6	12.2	4.20	4.8	<.02	-	-
Chloride	38.0	45.0	40.0	35.0	29.0	250	250
Nitrate (NO ₃ -N)	.10	<.10	.20	<.10	.20	10.0	10.0
Detergent (MBAS)	<.04	<.04	<.04	<.04	<.04	-	0.5
Iron	(2.5)	(2.57)	(2.76)	(1.76)	(1.51)	0.3	0.3
Specific Conductivity (umhos/cm)	600.0	650.0	540.0	600.0	480.0	-	-
Total Dissolved Solids	270.0	400.0	107.0	330.0	281.0	-	1000
pH (Units)	6.7	(6.4)	6.5	6.7	6.9	-	6.5-8.5
Lead (Pb)	(.23)	(.74)	(.049)	(.08)	.0205	.05	.025
Total Organic Carbon	6.3	6.3	16.5	36.6	13.0	-	-

* ALL QUANTITIES IN mg/l EXCEPT AS NOTED

1.22.32

TABLE 3-4

TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS **

WELL NUMBER 10

DATE SAMPLED	9/8/81	12/22/81 *	3/10/82 *	6/10/82*	11/3/82 *	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
DEPTH OF SAMPLE	22'						
Ammonia (NH ₃ -N)	.04					-	-
Chloride	2.0					-	-
Nitrate (NO ₃ -N)	<.10					250	250
Detergent (MBAS)	<.04					10.0	10.0
Iron	.02					-	0.5
Specific Conductivity (umhos/cm)	70.0					0.3	0.3
Total Dissolved Solids	56.0					-	-
pH (Units)	6.4					-	1000
Lead (Pb)	<.002					-	6.5-8.5
Total Organic Carbon	<.05					.05	.025

* WELL DAMAGED. COULD NOT SAMPLE .

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

1-23.32

TABLE 3-5

TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS *

WELL NUMBER 29

DATE SAMPLED DEPTH OF SAMPLE	9/8/81 14'	12/22/81 14'	3/10/82 14'	6/10/82 14.1'	11/3/82 14.8'	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
Ammonia (NH ₃ -N)	.02	<.20	.04	.56	<.02	-	-
Chloride	18.0	50.0	13.0	12.0	20.0	250	250
Nitrate (NO ₃ -N)	.20	.80	.90	.50	1.00	10.0	10.0
Detergent (MBAS)	<.04	<.04	<.04	<0.04	<.04	-	0.5
Iron	.02	.02	<u>.70</u>	.08	<.02	0.3	0.3
Specific Conductivity (umhos/cm)	100.0	140.0	135.0	150.0	140.0	-	-
Total Dissolved Solids	83.0	118.0	51.0	80.0	104.0	-	1000
pH (Units)	<u>6.3</u>	6.7	<u>6.3</u>	6.6	6.5	-	6.5-8.5
Lead (Pb)	<.002	<.002	.025	<.002	<.002	.05	.025
Total Organic Carbon	<.05	.26	13.0	1.73	.97	-	-

* ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

1.24.32

TABLE 3-6
TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS *

WELL NUMBER 30

DATE SAMPLED DEPTH OF SAMPLE	9/8/81 12'	12/22/81 12'	3/10/82 12'	6/10/82 11.7'	11/3/82 11.6'	N. Y. S. Drinking Water Standards	N.Y.S. Groundwater Standards
Ammonia (NH ₃ -N)	19.6	13.8	5.2	4.5	11.4	-	-
Chloride	58.0	40.0	41.0	49.0	48.0	250	250
Nitrate (NO ₃ -N)	<.10	<.10	<.10	<.10	.30	10.0	10.0
Detergent (MBAS)	<.04	<.04	<.04	<.04	<.04	-	0.5
Iron	(18.2)	(23.9)	(19.3)	(19.3)	(27.9)	0.3	0.3
Specific Conductivity (umhos/cm)	550.0	500.0	400.0	550.0	470.0	-	-
Total Dissolved Solids	252.0	310.0	120.0	250.0	240.0	-	1000
pH (Units)	6.6	6.5	(6.4)	6.7	6.8	-	6.5-8.5
Lead (Pb)	<.002	<.002	<.002	<.002	<.002	.05	.025
Total Organic Carbon	3.10	4.4	9.2	19.2	7.9	-	-

* ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

1.25.32

TABLE 3-7
TOWN OF SOUTHAMPTON

COMPARISON OF QUARTERLY GROUNDWATER SAMPLING RESULTS **

WELL NUMBER S48432

DATE SAMPLED DEPTH OF SAMPLE	9/8/81	12/22/81	3/10/82	6/10/82	11/3/82	N. Y. S. Drinking Water Standards	N. Y. S. Groundwater Standards
	41'	41'	41'	42.9'	42.7'		
Ammonia (NH ₃ -N)	.02	<0.2	<0.02	0.23	<0.02	-	-
Chloride	9.0	15.0	9.0	9.0	8.00	250	250
Nitrate (NO ₃ -N)	1.30	<0.1	<0.10	<0.10	0.50	10.0	10.0
Detergent (MBAS)	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.5
Iron	0.27	0.24	0.20	0.42	1.41	0.3	0.3
Specific Conductivity (umhos/cm)	65.0	65.0	57.0	70.0	60.0	-	-
Total Dissolved Solids	65.0	57.0	21.0	50.0	53.0	-	1000
pH (Units)	6.4	6.4	5.9	6.6	6.2	-	6.5-8.5
Lead (Pb)	<0.002	<0.002	<0.002	<0.002	<0.002	.05	.025
Total Organic Carbon	0.11	.65	<0.05	1.29	2.9	-	-

* WELL DAMAGED. COULD NOT SAMPLE.

** ALL QUANTITIES IN mg/l EXCEPT AS NOTED.

1.26.32

1 and 9. The concentrations of lead in the other wells were found not to exceed the recommended standards. The recent results indicate that the slug has diminished in Well 9 although concentrations at the landfill (Well No. 1) have steadily increased over the year from .085 mg/l to 0.20 mg/l, exceeding the .050 mg/l D.W. Std. The values for volatile halogenated organics and pesticides (including Temik and PCB's) are shown for the November 3, 1982 sampling in Table 2-4. There were few changes in the results from the September 8, 1981 sampling, and none are significant. All of the reported results meet New York State Drinking Water and Groundwater Standards.

3.2.1 - Contaminated Wells

The contaminated wells are those considered to be in the leachate plume namely, Wells No. 1, 9, and 30. These wells are found to consistently exceed several groundwater and drinking water standards as well as values for several leachate indicators.

The on-site monitoring well, Well No. 1, has the expectedly highest level of pollutants. The concentration of iron remained significantly higher than the standards in all cases ranging from 41.5 to 59.7 mg/l in Well No. 1. Likewise the concentration of total organic carbon and the level of specific conductivity increased steadily over the year from 5.2 to 68.7 mg/l and 700 to 1,100 umhos/cm., respectively. During this same interval, chlorides increased from approximately 60 to 87 mg/l and lead

5.9 pH
increased steadily from 0.085 to 0.20 mg/l. The pH of the two samples were at 6.4 slightly below the 6.5 to 8.5 acceptable range. Until the upgradient well is installed and sampled, we will not know whether the pH has been influenced by landfill leachate.

As indicated previously, we were unable to bail Well No. 1 at the time of the 1982 annual sample and hence no results are available to determine whether or not the arsenic and manganese values are still above the standards.

Wells No. 9 and 30 consistently exceeded the standards for iron. The pH levels have fluctuated slightly and have decreased to as low as 6.4 in both wells. The lead concentration in Well No. 9 has decreased from a high of 0.74 mg/l to a low of .0205 mg/l, well within the Drinking Water Standards of .05 mg/l. Manganese values have decreased in Well No. 9 but did show an increase in Well No. 30, with both the wells currently showing a concentration of approximately 11-13 mg/l, well above the New York State Drinking Water Standard of 0.3 mg/l. Sulfate concentrations decreased in both wells analyzed. The previously high concentration of cadmium found in Well No. 9 of .024 mg/l during the 1981 annual analyses, (the standard being .01 mg/l) has decreased to an acceptable level of .0036 mg/l.

3.2.2 - Uncontaminated Wells

The remainder of the wells (Nos. 10, 29 and S-48432) are outside of the recognized leachate plume. All wells met standards

and minimum leachate indicator values with the exception of iron and pH. The drinking water standard for iron of 0.3 mg/l was exceeded for the ^{MONTH OF} June and November, 1982 analyses for Well No. S-48432 (0.42 mg/l and 1.41 mg/l respectively) which is an increase from previously reported results and exceeded only in the March, 1982 analyses for Well No. 29 (0.70 mg/l) which returned to acceptable levels at subsequent samplings. The pH of all the monitoring wells fluctuated during the quarterly analyses, and several readings fell below the acceptable standardized groundwater range (6.5 to 8.5). However, as indicated previously, the background pH has not been determined.

3.2.3 - Conclusions

The following conclusions can be drawn from the data collected during the 1981 - 1982 annual sampling program, and the preceeding discussions:

1. Measurements of the groundwater elevations in the monitoring well network indicate that the direction of groundwater is towards the northwest, as noted in earlier reports.

2. The wells located within the plume continue to display characteristically high concentrations of landfill leachate constituents in groundwater. There are no significant increases in any of the downgradient contaminated wells to suggest that the plume has moved further away from the landfill. However, upon resumption of sampling at Well No. 10 (just outside the plume), during the 1982 - 1983 sampling program, we will be able to verify this or modify the location of the plume, accordingly.

In addition, there has been no discernable dispersion of the plume in the lateral direction towards Wells No. 29 and S-48432.

3. The lead slug within the leachate plume, which appeared in earlier analyses and which was discussed in our 1981 Annual Groundwater Sampling Report, seems to have diminished in Well No. 9. However, concentrations of lead have increased in Well No. 1 (at the landfill) suggesting a localized condition.

4. The New York State Drinking Water Standards were exceeded for lead in Well No. 1 consistently throughout the analyses, while the concentration of lead at Well No. 9, has decreased from an unacceptable to an acceptable concentration at the most recent sampling. All other wells show concentrations below the lead standards. The standard for cadmium of .01 mg/l was exceeded in Well No. 9 (.024 mg/l) for the 1981 annual sampling, but decreased in concentration to .0036 mg/l in 1982, and to an acceptable level.

5. The New York State Drinking Water Standards for iron were consistently exceeded in Wells No. 1, 2 and 30; forty percent of the samples for Well No. S-48432 exceeded the iron standard and one of the samples in Well No. 29 also exceeded this standard. Likewise, the manganese standard was exceeded in Wells No. 9 and 30 and most likely Well No. 1 would have exceeded the standard if it was successfully sampled and analyzed.

4.0 RECOMMENDATIONS

The 1982 - 1983 sampling program has already continued with samples recently taken for quarterly analysis during the last week of December, 1982 at Wells No. 9, 10, 20, 30 and S-48432 (Well No. 1 will require a narrow diameter bailer similar to the one utilized by the SCDHS). Of particular concern will be the results of Well No. 10. Well No. 10 has not been sampled since September 8, 1982 and should provide information on any longitudinal change in the direction of the plume. At this time, there is no need to expand the public water system beyond the currently affected area. Further, there was no evidence of PCB's or Temik (Aldicarb) in the November, 1982 annual analyses. The installation and sampling of the upgradient monitoring well will provide the necessary background information on the local groundwater characteristics.

R E F E R E N C E S

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Hydrology of Brookhaven National Laboratory and Vicinity Suffolk County, New York

GEOLOGICAL SURVEY BULLETIN 1156-C

*This report concerns work done on behalf
of the U.S. Atomic Energy Commission*



C4 STUDIES OF SITES FOR NUCLEAR ENERGY FACILITIES

5 to 10 feet above mean high tide. Long Island was also visited by two hurricanes in 1954. Unconfined ground water in low-lying areas near the shore is salted by sea water blown inland during hurricanes.

The maximum depth of freezing in the soil zone is 15 inches; the average is much less. Because the soil is not frozen during most of the winter season, recharge to the water table is possible during the winter, and because evapotranspiration is low, most of the ground-water recharge does, in fact, take place during the colder months, from December to May.

PRECIPITATION

Precipitation, the only source of fresh water for the streams and ground water in the Upton area, is used here as the starting point of the hydrologic cycle. The average precipitation ranges from about 42 inches in the western part to about 46 inches in the eastern part of Long Island. In an average year, about 120 days have 0.01 inch or more of precipitation. Long Island is supplied with moisture from the Gulf of Mexico and from the Atlantic Ocean through the action of winds of cyclonic storms. The general current of the prevailing westerlies plays only a small part in producing precipitation in Long Island. Natural variations in precipitation are largely due to physiographic and storm-pattern factors.

The Upton area of Long Island has little relief and thus monthly, and especially yearly, precipitation does not differ much from one locality to another within the area. Such differences as do occur are due largely to local summer storms or to differences in the local details of the rain gage or its exposure. But, though geographic variations are not large, a careful study of cumulative records shows some variation in rainfall within the Upton area.

RECORDS AVAILABLE

Precipitation records for eight stations within a 13-mile radius of the center of the Brookhaven National Laboratory are used in this report. Three of these stations are on the Laboratory grounds; no two stations are more than 20 miles apart (fig. 1). The length of record at the end of 1953 ranges from 5 complete years (at two gages within the Laboratory area) to nearly 69 complete years at Setauket (tables 1 and 2). The earliest records are for 1864-82 at the village of Brookhaven. The record at Setauket began in 1885.

The rainfall records and the values for average, minimum, and maximum precipitation proved satisfactory for correlating precipitation with surface-water stages and flows and with ground-water levels. Precipitation data for periods of less than a month are discussed briefly, because they have some bearing on the problems of ground-water contamination (de Laguna, 1966).

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C26 STUDIES OF SITES FOR NUCLEAR ENERGY FACILITIES

is beyond the reach of plant roots. These conditions are met in the Upton area. The soil is sandy and porous; the water table is within 5 feet of the land surface in less than 7 percent of the area (Spear, 1912); and less than 1 percent of the area is fresh-water ponds, lakes, and streams. Therefore, evaporation-pan data may be used to set an approximate upper limit for evapotranspiration.

Data on evaporation from pans are available for Central Park in New York City and for a storm-water recharge basin in Garden City, Long Island, N.Y. Evaporation records for the New York City pan for the period May through October are available for the years 1944 through 1953; observed values ranged from 29 to 36 inches and averaged 32.27 inches. This value must first be multiplied by 1.33 to give the equivalent evaporation for the full year (Horton, 1943, p. 747), and then multiplied by 0.7, the generally accepted coefficient for this type of pan. The corrected annual rate of evaporation from a large free-water surface in this area is, therefore, about 30 inches. Similar data collected at Garden City gives a corrected annual rate of evaporation of 23 inches. A comparison with evaporation rates in other parts of the country suggests that the value of 30 inches is probably the more nearly correct.

SUMMARY OF COMPUTED VALUES FOR EVAPOTRANSPIRATION

Annual evapotranspiration in the Upton area was found to be 22–23 inches from rainfall-runoff relationships, about 21–22 inches by the Meyer method, less than 26 inches by the Thornthwaite method, and less than 30 inches from evaporation-pan data. There is fair agreement between these values. For the purposes of this report the Meyer method is preferred, principally because it takes into consideration the change in evaporation opportunity with variation in precipitation. The average evapotranspiration in the Upton area is, therefore, taken to be about, and no more than, 22 inches per year. Annual variations in temperature and precipitation are believed to produce corresponding variations in evapotranspiration of 19–24 inches (table 5). Variations in topography, geology, soil cover, and vegetation are estimated to produce corresponding local variations in evapotranspiration of 15–30 inches. The average figure of 22 inches, and the range of from 15 to 30 inches, are approximate, inasmuch as they have been determined by indirect, empirical methods. The data obtained at Brookhaven by use of a lysimeter are in agreement with this conclusion.

QUANTITATIVE ESTIMATES OF RECHARGE

MONTHLY AND YEARLY FIGURES 1941–53

Monthly evapotranspiration for the Upton area, computed by the Meyer method for the 12 water years, October 1, 1941, to September

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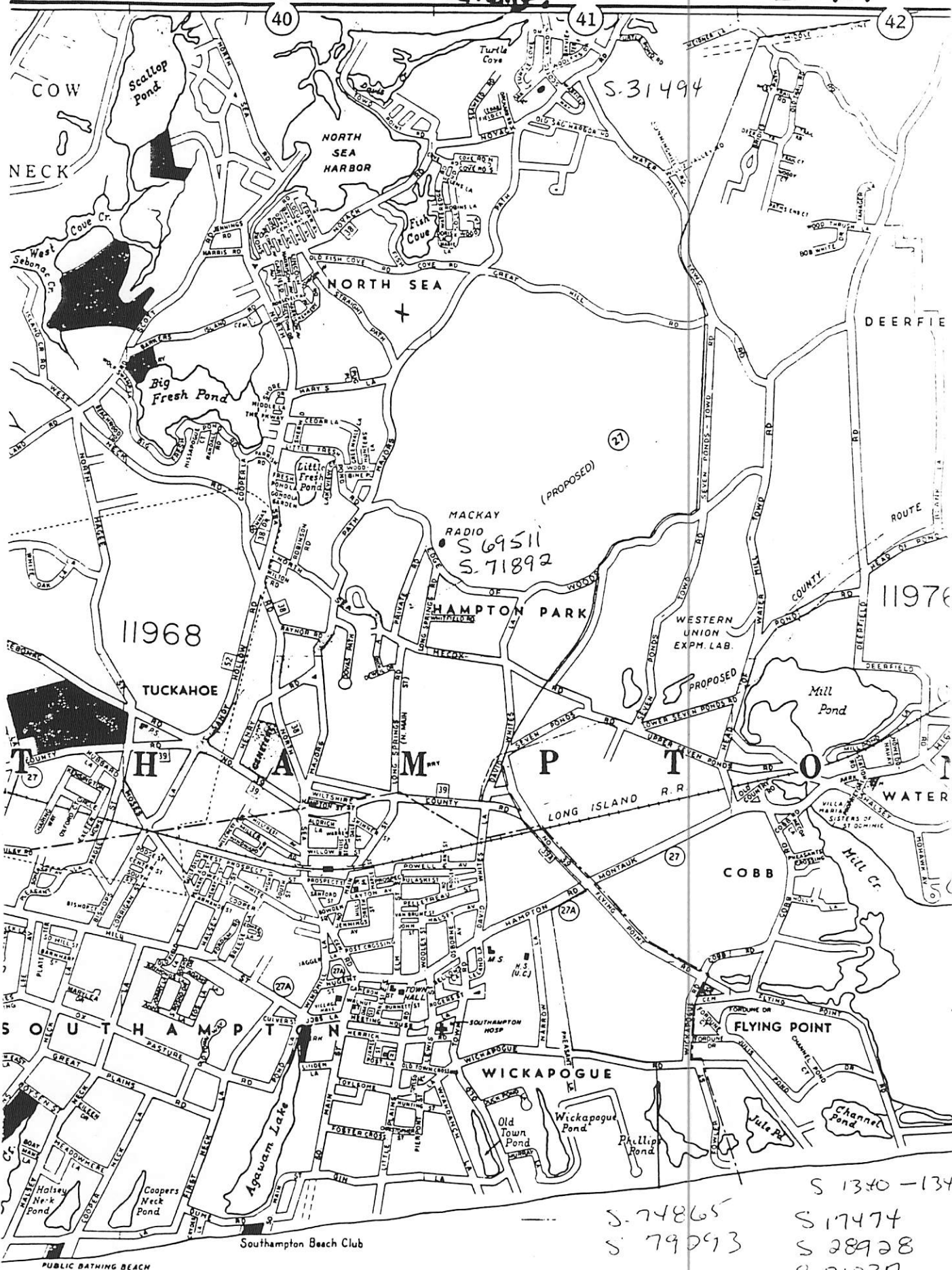
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USGS Header file well locations

S-24322

FROM MAINING AREA SEE MAP NO. 24

3.1.1



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ATLAS HA-501

5.1.3

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

ROUX ASSOCIATES

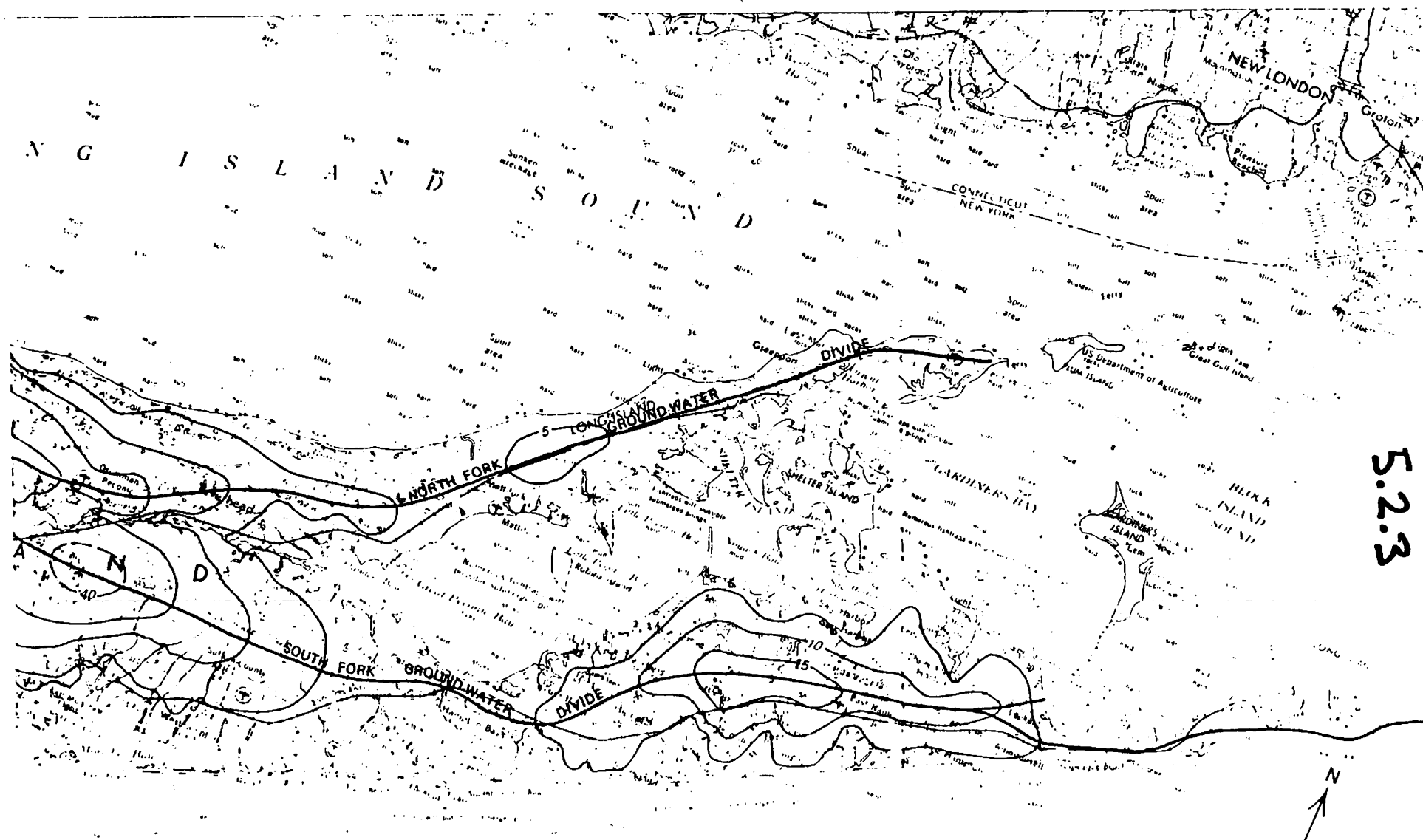
HYDROGEOLOGY OF SUFFOLK COUNTY, LONG ISLAND, NEW YORK

By H.M. Jensen and Julian Soren

Prepared in cooperation with the
SUFFOLK COUNTY WATER AUTHORITY
SUFFOLK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL

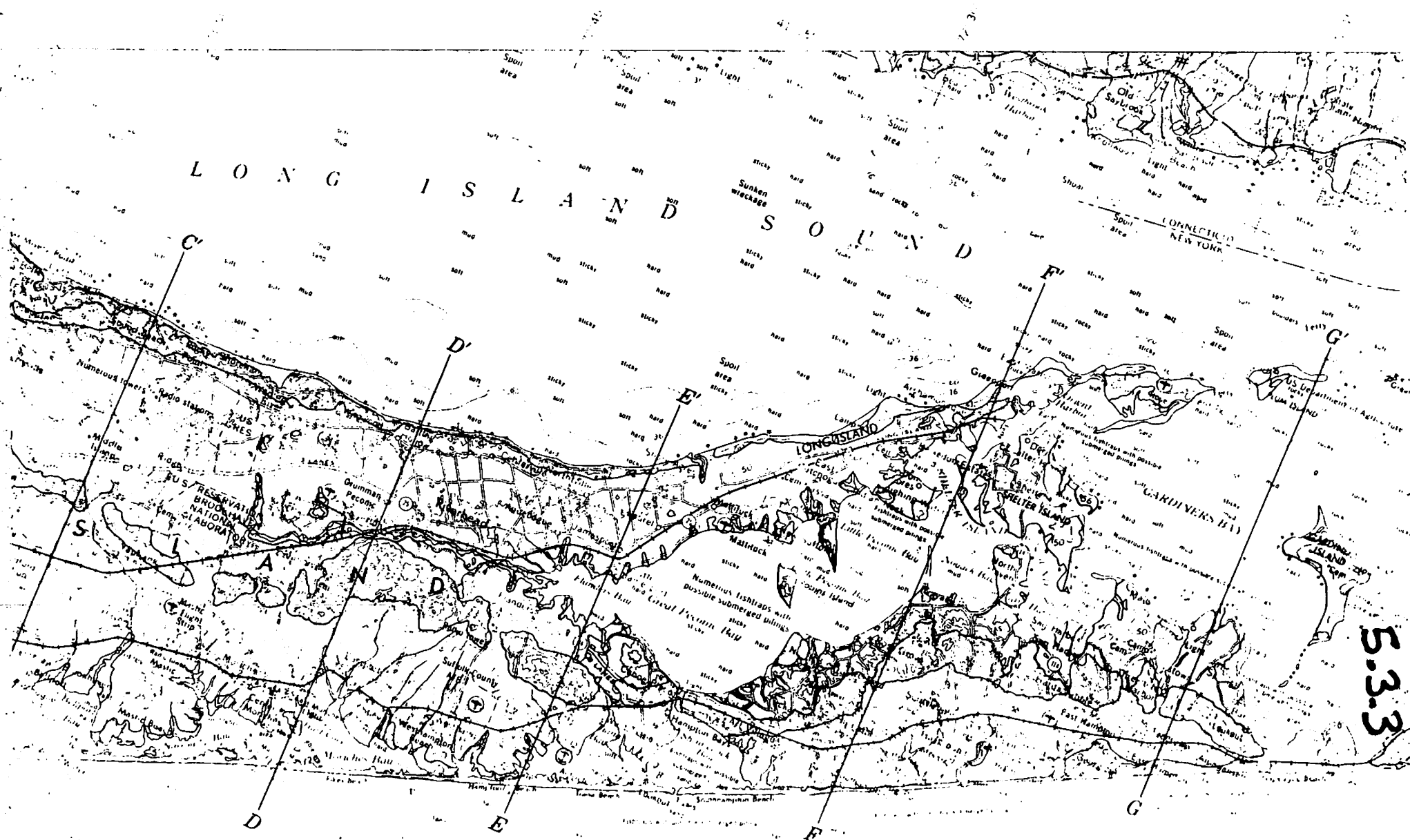
HYDROLOGIC INVESTIGATIONS ATLAS
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Washington, D.C. 20244

JENSEN AND SOREN-HYDROGEOLOGY, SUFFOLK CO., LONG ISLAND, N.Y. 1:250,000 ATLAS HA-501



5.2.3

L O N G I S L A N D S O L I D



سبب

6.1.1

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual (HW-10)

**Originally Published in
the July 16, 1982, *Federal Register***

**United States
Environmental Protection
Agency**

1984

Population Breakdown By Community (continued)

TOWN OF OYSTER BAY

	Census 1980			
	Census 4/1/80	Est 1/1/85	Total Households	Persons per Household
<u>City</u>				
Glen Cove	24,618	24,581	8,193	2.94
<u>Incorporated Villages</u>				
Bayville	7,034	7,408	2,301	3.04
Brookville	3,280	3,871	530	3.12
Incl CW Post Center	1,628	1,975	—	—
Centre Island	378	382	148	2.54
Cove Neck	331	326	122	2.71
East Hills, part	14	14	4	3.50
Farmingdale	7,846	7,760	2,927	2.67
Lattingtown	1,748	1,900	578	3.03
Laurel Hollow	1,527	1,627	450	3.29
Massapequa Park	19,779	19,318	5,531	3.58
Martinecock	985	1,076	334	2.95
Mill Neck	959	1,004	342	2.80
Muttontown	2,725	2,981	774	3.48
Old Brookville	1,574	1,591	494	3.18
Old Westbury	1,102	1,102	131	3.38
Oyster Bay Cove	1,789	2,146	549	3.28
Roslyn Harbor, part	344	340	98	3.51
Sea Cliff	5,384	5,348	2,035	2.61
Upper Brookville	1,245	1,292	382	3.23
Total Incorporated Villages	58,145	59,292	—	—
<u>Census Designated Places</u>				
Bayville, uninc	487	516	137	3.55
Bethpage	16,840	16,487	4,832	3.41
East Massapequa	13,987	13,412	3,910	3.54
East Norwich	2,841	2,866	876	3.24
Glen Head	4,513	4,488	1,534	2.76
Glenwood Landing, part	3,335	3,378	1,166	2.86
Greenvale, part	232	280	84	2.76
Hicksville	43,245	41,665	13,329	3.24
Jericho	12,738	13,320	4,053	3.09
Locust Grove	9,670	9,132	2,978	3.25
Locust Valley	3,578	3,477	1,255	2.85
Massapequa	24,454	23,715	7,266	3.37
North Massapequa	21,388	20,988	6,090	3.51
Old Bethpage	6,215	5,881	1,730	3.52
Oyster Bay	8,487	7,374	2,343	2.75
Plainville	9,629	9,405	2,826	3.40
Plainville	28,037	27,442	8,288	3.36
South Farmingdale	16,438	15,825	4,660	3.53
Syosset	9,818	10,382	2,988	3.28
West Amityville	6,623	6,801	2,227	2.97
Woodbury	7,043	7,408	2,082	2.96
Total Census	247,806	243,853	—	—
Designated Places				
TOTAL TOWN OF OYSTER BAY	350,112	327,736	92,445	3.26
NASSAU COUNTY TOTAL	1,321,582	1,304,236	423,401	3.08

NOTE: For updated township population figures see Page 23.

TOWN OF SMITHTOWN

	Census 1980			
	Census 4/1/80	Est 1/1/85	Total Households	Persons per Household
<u>Incorporated Villages</u>				
Head of the Harbor	1,023	1,121	316	—
Massapequa	1,462	1,583	421	—
Village of the Branch	1,707	1,791	476	—
Total Incorporated Villages	4,192	4,505	—	—
<u>Census Designated Places</u>				
Commack, part	21,032	20,767	5,685	—
Fort Salonga, part	3,790	4,029	1,076	—
Haupepaug, part	10,764	10,286	2,932	—
Kings Park	16,131	16,203	4,566	—
Lake Ronkonkoma, part	4,339	4,527	1,254	—
Neaenest	10,708	11,734	2,977	—
St James	12,122	11,817	3,630	—
Smithtown	30,906	30,910	8,608	—
Total Census	109,790	110,273	—	—
Designated Places				
Special Population				
Kings Park Psych Ctr	2,681	2,530	45	—
TOTAL TOWN OF SMITHTOWN	116,663	117,308	31,986	—

TOWN OF SOUTHAMPTON

	Census 1980			
	Census 4/1/80	Est 1/1/85	Total Households	Persons per Household
<u>Incorporated Villages</u>				
North Haven	738	731	309	—
Quogue	966	1,162	419	—
Sag Harbor, part	1,686	1,833	748	—
Southampton	4,000	4,050	1,618	—
Westhampton Beach	1,629	1,727	673	—
Total Incorporated Villages	9,019	9,503	—	—
<u>Census Designated Places</u>				
Bridgehampton	1,941	2,043	764	2.1
Eastport, part	852	839	360	2.2
East Quogue	3,668	3,734	1,492	2.2
Hampton Bays	7,258	7,595	2,820	2.2
Hampton Park	1,331	1,424	500	2.2
North Sea	1,171	1,382	449	2.2
Noyack	2,657	3,197	1,100	2.2
Quogue	609	610	256	2.2
Remsenburg - Speonk	1,868	2,144	696	2.2
Riverside - Flanders	5,400	5,489	1,690	2.2
Incl SC Jail	375	476	—	—
Scaponack	245	302	394	2.2
Shinnecock Hills	2,344	2,860	754	2.2
Incl Southampton College	625	660	—	—
Tuckahoe	953	969	373	2.1
Watermill	722	810	394	2.1
Westhampton	2,744	3,195	1,028	2.1
Westhampton Beach, uninc	39	42	673	2.1
Total Census	33,830	36,635	—	—
Designated Places				
Special Populations				
SC Air Force Base	0	NA	—	—
Shinnecock Indian Reservation	297	297	104	2.1
Total of Special Populations	297	297	—	—
TOTAL TOWN OF SOUTHAMPTON	43,146	46,435	16,747	2.1

TOWN OF SHELTER ISLAND

	Census 1980			
	Census 4/1/80	Est 1/1/85	Total Households	Persons per Household
<u>Incorporated Village</u>				
Daring Harbor	18	18	7	2.28
<u>Census Designated Places</u>				
Shelter Island	1,115	1,244	440	2.53
Shelter Island Heights	940	1,017	440	2.10
Total Census	2,086	2,281	—	—
Designated Places				
TOTAL TOWN OF SHELTER ISLAND	2,871	2,277	887	2.31
SUFFOLK COUNTY TOTAL	1,384,231	1,315,867	386,719	3.25

TOWN OF SOUTHOLD

	Census 1980			
	Census 4/1/80	Est 1/1/85	Total Households	Persons per Household
<u>Incorporated Village</u>				
Greenport	2,273	2,388	812	—
<u>Census Designated Places</u>				
Cutchogue-New Suffolk	2,788	2,864	1,086	—
East Marion-Orient	1,511	1,484	763	—
Fishers Island	318	383	882	—
Greenport, uninc	1,571	1,721	347	—
Laurel	982	1,036	347	—
Matinecock	3,823	4,170	1,433	—
Poconic	1,068	1,183	488	—
Southold	4,770	4,980	1,887	—
Total Census	16,888	17,831	—	—
Designated Places				
TOTAL TOWN OF SOUTHOLD	18,172	20,228	7,841	—

N-S Resident Births and Deaths

	Nassau County			Suffolk County		
	Births	Deaths	Difference	Births	Deaths	Difference
10	16,500	5,314	11,186	5,367	2,688	2,671
11	19,500	5,883	13,617	6,249	2,777	3,472
12	21,878	6,230	15,648	6,946	2,904	4,042
13	22,739	6,479	16,260	7,979	3,098	4,881
14	24,631	6,764	17,867	9,240	3,262	5,978
15	25,549	7,225	18,324	10,604	3,587	7,017
16	25,978	7,750	18,228	12,087	3,849	8,238
17	26,421	7,953	18,468	13,645	4,100	9,545
18	26,070	8,565	17,505	14,573	4,477	10,096
19	25,545	8,654	16,891	15,701	4,774	10,927
20	25,247	9,051	16,196	17,109	5,089	12,020
21	24,565	9,355	15,210	17,837	5,408	12,429
22	23,543	9,447	14,096	18,374	5,542	12,832
23	23,079	9,970	13,109	19,286	5,994	13,292
24	22,230	10,244	11,986	19,794	6,188	13,606
25	21,032	10,642	10,390	19,123	6,541	12,582
26	19,437	10,338	9,099	18,583	6,935	11,648
27	18,298	10,924	7,374	18,441	7,206	11,235
28	17,547	11,312	6,235	18,275	7,588	10,687
29	17,526	11,127	6,399	19,589	7,749	11,840
30	17,356	11,218	6,138	20,325	8,071	12,254
31	15,499	11,562	3,937	18,988	8,237	10,751
32	13,968	11,476	2,492	17,281	8,503	8,778
33	12,813	11,741	1,072	16,979	8,322	8,657
34	13,224	11,323	1,901	17,738	8,702	9,037
35	12,730	11,089	1,641	17,282	8,514	8,768
36	13,058	11,502	1,556	17,328	8,777	8,551
37	12,948	11,140	1,808	17,211	8,851	8,360
38	12,926	11,295	1,631	16,897	9,097	7,800
39	13,371	11,154	2,217	16,568	8,838	7,730
40	13,553	11,908	1,645	16,488	9,683	6,805
41	13,961	11,298	2,663	16,813	9,485	7,328
42	14,342	11,552	2,790	16,510	9,565	6,945
43	14,541	11,919	2,622	16,783	9,994	6,789
44	14,758	11,774	2,984	16,908	10,152	6,756
45	15,247	11,811	3,436	17,620	10,312	7,308

Source: Nassau & Suffolk Depts of Health

MEDIAN AGE OF LI'S POPULATION BY MAJOR MUNICIPALITY, 1960, 1970 & 1980

Town or City	1960	1970	Change 1960-1970	1980	Change 1970-1980
Glen Cove	30.4	31.0	0.6	33.9	2.9
Hempstead	31.1	30.7	-0.4	33.6	2.9
Long Beach	36.2	40.0	3.8	36.7	-3.3
N Hempstead	33.3	34.5	1.2	36.7	2.2
Oyster Bay	27.4	27.9	0.5	33.5	5.6
NASSAU COUNTY	30.8	30.9	0.1	34.2	3.3
Babylon	27.0	25.7	-1.3	29.5	3.8
Brookhaven	29.3	24.8	-4.5	27.8	3.0
E Hampton	33.9	37.8	3.9	40.3	2.5
Huntington	29.7	27.2	-2.5	31.9	4.7
Islip	30.8	26.1	-4.7	28.7	2.6
Riverhead	28.7	31.3	2.6	36.8	5.5
Shelter Island	43.2	49.3	6.1	50.0	0.7
Smithtown	31.9	26.6	-5.3	31.1	4.5
Southampton	31.9	34.4	2.5	37.2	2.8
Southold	36.6	40.1	3.5	43.1	2.0
SUFFOLK COUNTY	30.0	26.4	-3.6	29.9	3.5
The Region	30.5	28.4	-2.1	31.9	3.5

Source: LI Reg'l Planning Board

Population (By Marital Status)

Median Age of Nassau/Suffolk Residents

	Nassau	Suffolk	Nassau/Suffolk
1980	34.1	29.9	32.0
1985	35.8	31.6	33.6

Marital Status	NASSAU			SUFFOLK		
	Total	Males	Females	Total	Males	Females
Single	295,620	155,030	140,590	265,395	141,386	124,009
Now Married	632,351	315,984	316,367	574,208	286,949	287,259
Separated	18,294	6,444	11,850	21,594	7,919	13,675
Widowed	81,509	12,953	68,556	65,718	11,006	54,712
Divorced	35,085	12,133	22,952	36,832	13,262	23,570

Source: US Census of Population, 1980

LI TOWNS (By Population)

Town (Listed By Size)	POPULATION					HOUSING	
	LILCO est 1/1/86	US Census 1980	Density Persons/sq mi 1986 est	Persons Per Household 1986 est	Number of Households 1986 est	Average House Price 1986	Assessed ³ Valuation 1/1/87
Hempstead ¹	762,441	772,590	5,892	2.96	256,480	\$196,600	1,867,083,220
Brookhaven	394,610	385,105	1,557	3.12	123,230	126,000	526,954,520
Oyster Bay ²	329,739	330,368	3,025	3.07	106,450	258,500	1,001,994,000
Islip	302,416	298,897	2,854	3.25	90,502	130,000	4,066,591,057
North Hempstead	217,261	218,624	4,197	2.81	76,534	320,800	857,018,195
Babylon	207,514	203,483	3,875	3.15	64,979	137,800	258,321,343
Huntington	202,883	201,512	2,250	3.11	64,020	219,000	321,238,170
Smithtown	118,103	116,663	2,188	3.37	33,847	181,500	207,876,459
Southampton	47,642	43,146	882	2.37	19,595	NA	254,364,354
Riverhead	21,760	20,243	322	2.50	8,459	NA	561,872,431
Southold	20,545	19,172	144	2.51	8,105	NA	82,111,723
East Hampton	15,511	14,029	222	2.05	7,481	NA	111,329,640
Shelter Island	2,368	2,071	150	2.22	1,058	NA	24,512,731

NA — Information Not Available

1 - Includes Long Beach City

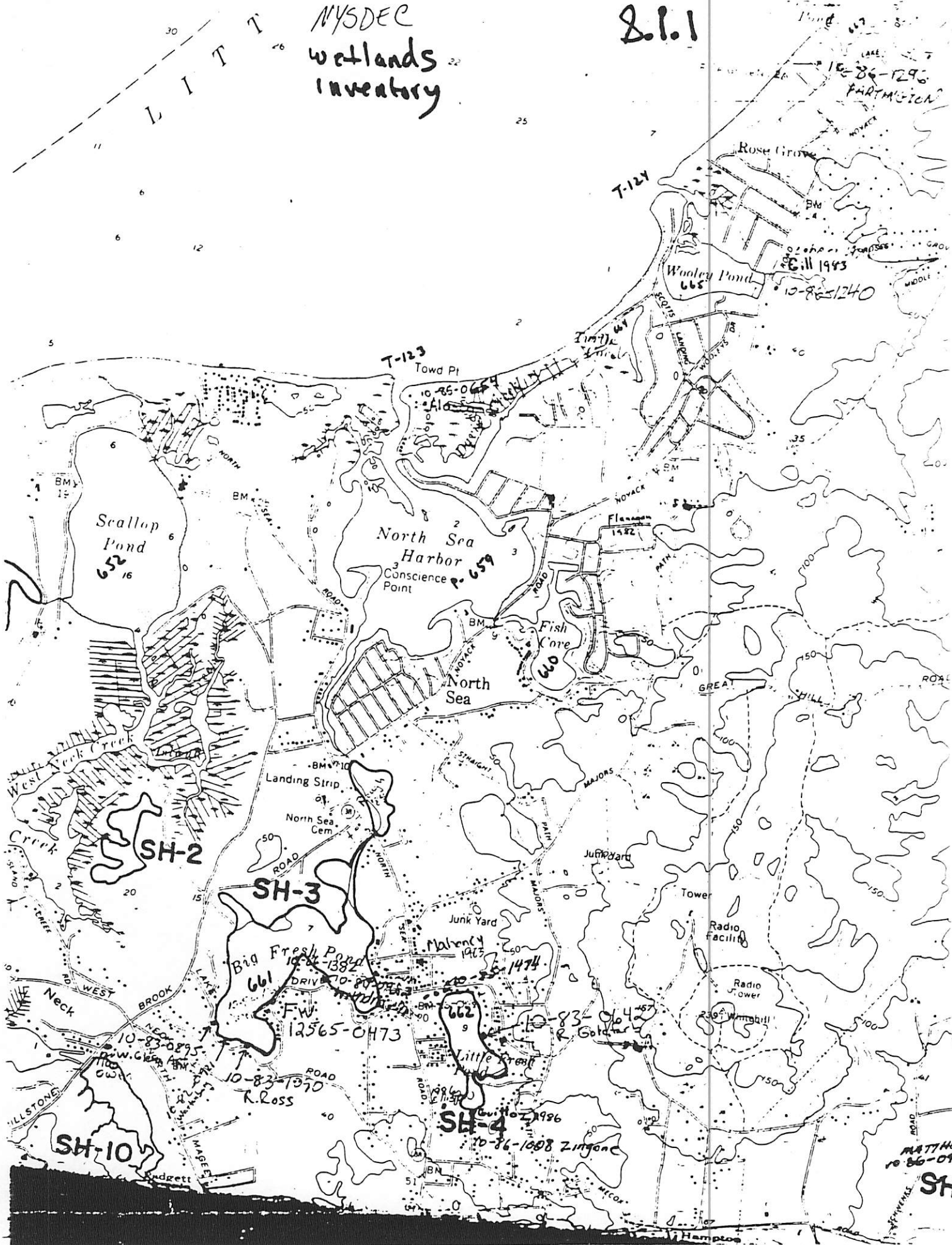
2 - Includes Glen Cove City

3 - See equalization rates in Real Estate section

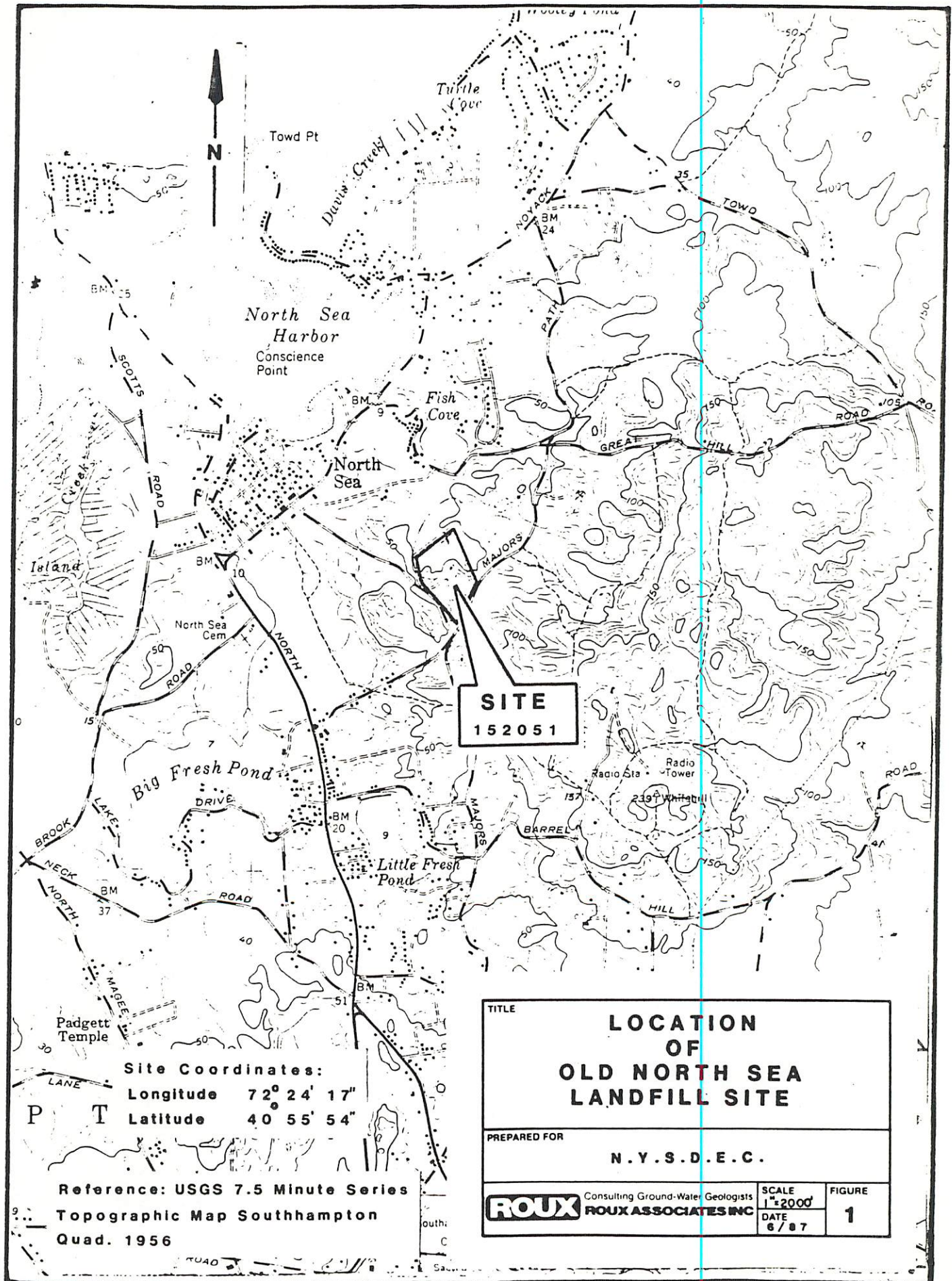
Source: LI Lighting Co, US Dept of Commerce, Suffolk Profiles Research & Publishing Co, Nassau & Suffolk County Depts of Assessment

NYSDEC
wetlands
Inventory

2.1.1



10.1.1



11.1.1

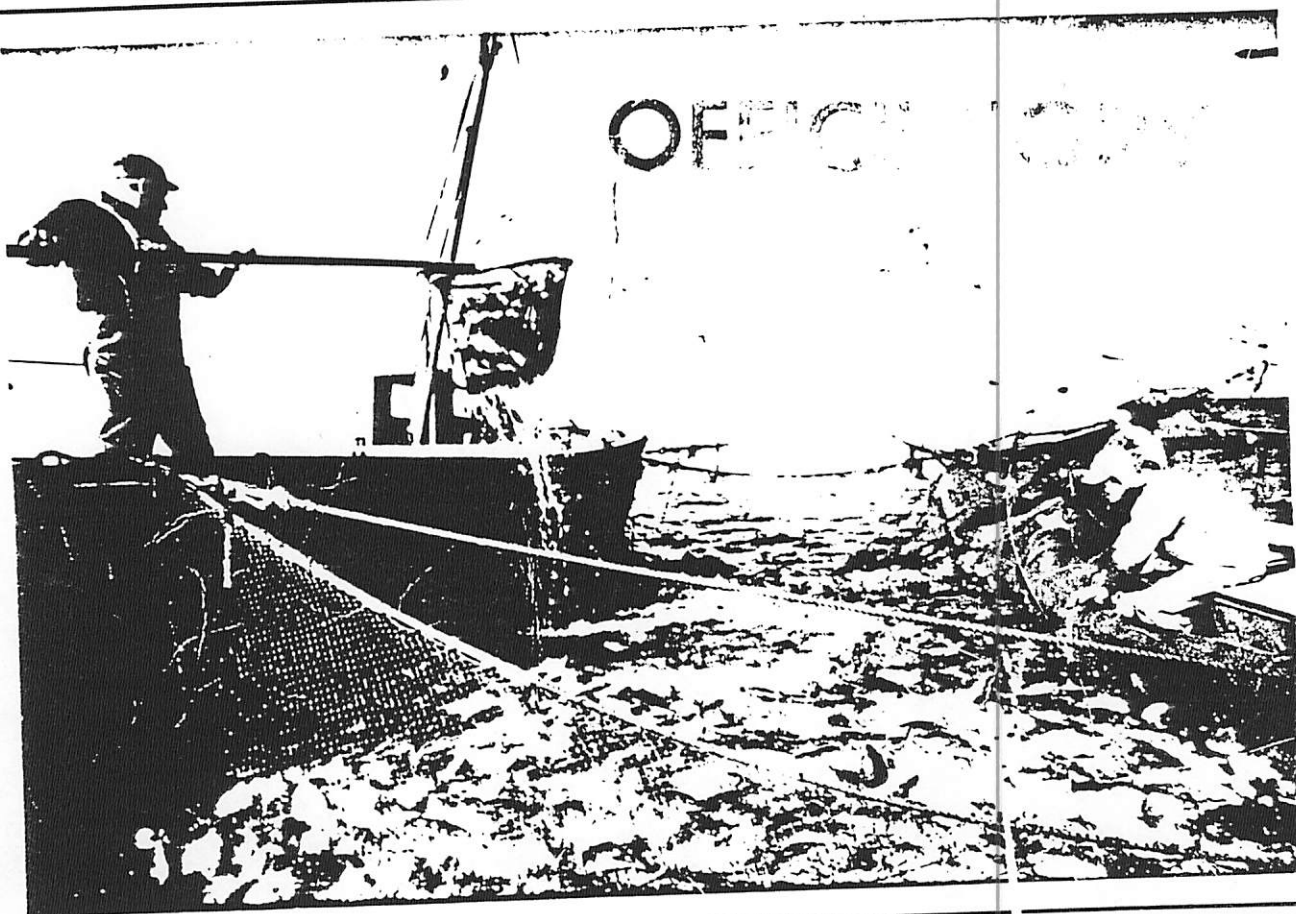
Hagstrom

Suffolk County Atlas

A HAGSTROM MAP

SUFFOLK COUNTY, NEW YORK:

- FULLY STREET-INDEXED
- LONG ISLAND EXPRESSWAY
- NORTHERN AND SOUTHERN STATE PARKWAYS
- SCHOOLS • HOSPITALS • PARKS
- STATE PARKS FACILITIES
- GOLF COURSES AND COUNTRY CLUBS
- CEMETERIES • AIRPORTS • ZIP CODES
- GOVERNMENT GUIDE • POPULATION STATISTICS



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Environmental Protection
Agency

Remedial Response
Washington, DC 20460

EPA Form 2070-11
January 1981
July 1981



Potential Hazardous Waste Site

Preliminary Assessment



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

IDENTIFICATION
C1 STATE C2 SITE NUMBER
NYD 982531261

II SITE NAME AND LOCATION

C1 SITE NAME (also common or descriptive name if any)

Old North Sea Landfill

C2 STREET ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER

Majors Path

C3 CITY

North Sea

C4 STATE

C5 ZIP CODE

C6 COUNTY

C7 COUNTY CODE

C8 DISTRICT

NY

11946

Suffolk

C9 COORDINATES: LATITUDE

LONGITUDE

40 55 54"

72 24 17"

C10 DIRECTIONS TO SITE (State, map, road, public road)

III RESPONSIBLE PARTIES

C11 OWNER

Village of Southampton

C12 STREET (Business name, address)

Main Street

C13 CITY

Southampton

C14 STATE

C15 ZIP CODE

C16 TELEPHONE NUMBER

NY

11946

()

C17 OPERATOR (Name and address of owner)

Same as above

C18 STREET (Business name, address)

C19 CITY

C20 STATE

C21 ZIP CODE

C22 TELEPHONE NUMBER

()

C23 TYPE OF OWNERSHIP (Check one)

☐ A PRIVATE ☐ B FEDERAL

☐ C STATE

☐ D COUNTY

☒ E MUNICIPAL

☐ F OTHER

☐ G UNKNOWN

C24 OWNER/OPERATOR NOTIFICATION ON FILE (Check one)

☐ A RCRA 3001 DATE RECEIVED

MON - DAY YEAR

☐ B UNCONTROLLED WASTE SITE (RCRA 103) DATE RECEIVED

MON - DAY YEAR

☐ C NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

C25 ON SITE INSPECTION

☒ YES

DATE

6/19/87

☐ NO

C26 BY (Check all that apply)

☐ A EPA

☐ B EPA CONTRACTOR

☐ C STATE

☒ D OTHER CONTRACTOR

☐ E LOCAL HEALTH OFFICIAL

☐ F OTHER

CONTRACTOR NAME(S) Roux Associates

C27 SITE STATUS (Check one)

☐ A ACTIVE

☒ B INACTIVE

☐ C UNKNOWN

C28 YEARS OF OPERATION

1930

1963

☐ UNKNOWN

C29 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT KNOWN OR ALLEGED

Unknown

C30 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND OR POPULATION

V. PRIORITY ASSESSMENT

C31 PRIORITY FOR INSPECTION (Check one) (High or medium or priority) (Exempt from Part 1) (Exempt from Part 2) (Exempt from Part 3) (Exempt from Part 4) (Exempt from Part 5) (Exempt from Part 6) (Exempt from Part 7) (Exempt from Part 8) (Exempt from Part 9) (Exempt from Part 10) (Exempt from Part 11) (Exempt from Part 12) (Exempt from Part 13) (Exempt from Part 14) (Exempt from Part 15) (Exempt from Part 16) (Exempt from Part 17) (Exempt from Part 18) (Exempt from Part 19) (Exempt from Part 20) (Exempt from Part 21) (Exempt from Part 22) (Exempt from Part 23) (Exempt from Part 24) (Exempt from Part 25) (Exempt from Part 26) (Exempt from Part 27) (Exempt from Part 28) (Exempt from Part 29) (Exempt from Part 30) (Exempt from Part 31) (Exempt from Part 32) (Exempt from Part 33) (Exempt from Part 34) (Exempt from Part 35) (Exempt from Part 36) (Exempt from Part 37) (Exempt from Part 38) (Exempt from Part 39) (Exempt from Part 40) (Exempt from Part 41) (Exempt from Part 42) (Exempt from Part 43) (Exempt from Part 44) (Exempt from Part 45) (Exempt from Part 46) (Exempt from Part 47) (Exempt from Part 48) (Exempt from Part 49) (Exempt from Part 50) (Exempt from Part 51) (Exempt from Part 52) (Exempt from Part 53) (Exempt from Part 54) (Exempt from Part 55) (Exempt from Part 56) (Exempt from Part 57) (Exempt from Part 58) (Exempt from Part 59) (Exempt from Part 60) (Exempt from Part 61) (Exempt from Part 62) (Exempt from Part 63) (Exempt from Part 64) (Exempt from Part 65) (Exempt from Part 66) (Exempt from Part 67) (Exempt from Part 68) (Exempt from Part 69) (Exempt from Part 70) (Exempt from Part 71) (Exempt from Part 72) (Exempt from Part 73) (Exempt from Part 74) (Exempt from Part 75) (Exempt from Part 76) (Exempt from Part 77) (Exempt from Part 78) (Exempt from Part 79) (Exempt from Part 80) (Exempt from Part 81) (Exempt from Part 82) (Exempt from Part 83) (Exempt from Part 84) (Exempt from Part 85) (Exempt from Part 86) (Exempt from Part 87) (Exempt from Part 88) (Exempt from Part 89) (Exempt from Part 90) (Exempt from Part 91) (Exempt from Part 92) (Exempt from Part 93) (Exempt from Part 94) (Exempt from Part 95) (Exempt from Part 96) (Exempt from Part 97) (Exempt from Part 98) (Exempt from Part 99) (Exempt from Part 100)

☐ A HIGH

☐ B MEDIUM

☐ C LOW

☐ D NONE

VI INFORMATION AVAILABLE FROM

C32 CONTACT

C33 OF (Agency or Organization)

C34 TELEPHONE NUMBER

C35 PERSON RESPONSIBLE FOR ASSESSMENT

C36 AGENCY

C37 ORGANIZATION

C38 TELEPHONE NUMBER

C39 DATE



03 WAS'E CHARACTERISTICS

A TORC	E SURVE	HIGH VOLTAGE
B CORROSIVE	F INFECTIONS	J EFFUSIVE
C RADIOACTIVE	G FLAMMABLE	K REACTIVE
D PERUSION	H IGNITABLE	L INCORPORABLE
		M NONADAPTABLE

Unknown

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	unknown		
OW	OIL WASTE	unknown		
SO	SOLVENTS	unknown		
PS	PESTICIDES	unknown		
OC	OTHER ORGANIC CHEMICALS	unknown		
IC	INORGANIC CHEMICALS	unknown		
AC	ACIDS	unknown		
BA	BASES	unknown		
ME	HEAVY METALS	unknown		

[illegible]

CATEGORY	C1 FEEDSTOCK NAME	C2 CAS NUMBER	CATEGORY	C1 FEEDSTOCK NAME	C2 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

5.6 Form 2070-13



Potential Hazardous Waste Site

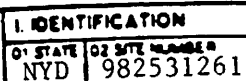
Site Inspection Report



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

1. IDENTIFICATION
01 STATE NYD 02 SITE NUMBER 982531261

II SITE NAME AND LOCATION		02 STREET ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER	
C. SITE NAME (Include common or local name of site)		Majors Path	
Old North Sea Landfill		04 STATE NY	05 ZIP CODE 11946
03 CITY North Sea		06 COUNTY Suffolk	
08 COORDINATES LATITUDE 40 55' 54" - LONGITUDE 72 24' 37" -		10 TYPE OF OWNERSHIP ☐ A PRIVATE ☐ B FEDERAL ☐ C STATE ☐ D COUNTY ☒ E MUNICIPAL ☐ F OTHER	
III INSPECTION INFORMATION			
01 DATE OF INSPECTION 06 19 87		02 SITE STATUS ☐ ACTIVE ☒ INACTIVE	
03 AGENCY PERFORMING INSPECTION ☐ A EPA ☐ B EPA CONTRACTOR ☐ C STATE ☒ D STATE CONTRACTOR		04 YEARS OF OPERATION 1930 1963 UNKNOWN	
05 CHIEF INSPECTOR Joanne Yeary		06 TITLE Geologist	
07 ORGANIZATION Roux Assoc.		08 TELEPHONE NO. 516 673-7200	
09 OTHER INSPECTORS Brian Thomas		10 TITLE Geologist	
		11 ORGANIZATION Same	
		12 TELEPHONE NO. Same	
13 SITE REPRESENTATIVES INTERVIEWED Mr. Sy Martin		14 TITLE Resident near site	15 ADDRESS Fish Cove Road
Ken Thoman		Town Clerk	Hampton Rd., Southampton
Assessors Office		Clerk	Hampton Rd., Southampton
Southampton Village		Clerk	Main Street, Southampton
17 ADDRESS CAPED BY ☒ PERMITS ☐ WARRANT		18 TIME OF INSPECTION 10:00 A.M.	
19 WEATHER CONDITIONS Hazy, Windy			
IV. INFORMATION AVAILABLE FROM			
01 CONTACT		02 OF Agency Organization	
03 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Brian Thomas		04 AGENCY Private	05 ORGANIZATION Roux Assoc.
		06 TELEPHONE NO. 516 673-7200	07 DATE 6/26/87



```

1 1. HIGHLY VOLATILE
2 2. EXPLOSIVE
3 3. REACTIVE
4 4. INCOMPATIBLE
5 5. NOT APPLICABLE

```

FD-302a (Rev. 12-17-81)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NYD 982531261

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 = A GROUNDWATER CONTAMINATION 4000 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

- Apparently there is no protective liner below the old landfill. Ground water at site is below land surface.

01 = B SURFACE WATER CONTAMINATION 700 02 = OBSERVED DATE 6/19/87 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

Ground water flow discharges to North Sea Harbor which is less than 2000 feet from old landfill.

01 = C CONTAMINATION OF AIR _____ 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

N/A

01 = D FIRE EXPLOSIVE CONDITIONS _____ 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

N/A

01 = E DIRECT CONTACT _____ 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

Potential leachate discharge to North Sea Harbor.

01 = F CONTAMINATION OF SOIL _____ 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 AREA POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

N/A

01 = G DRINKING WATER CONTAMINATION 4000 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

Area drinking water supplied by ground water which may be effected by plume leachate.

01 = H WORKER EXPOSURE INJURY 0 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 WORKERS POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

Old North Sea landfill has been closed for over twenty years, no workers at site.

01 = I POPULATION EXPOSURE INJURY _____ 02 = OBSERVED DATE _____ 03 POTENTIAL = ALLEGED
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

1 IDENTIFICATION
01 STATE: NYD 02 SITE NUMBER: 982531261

HAZARDOUS CONDITIONS AND INCIDENTS

1 = J DAMAGE TO FLORA 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
Some Plant life around Fish Cove has undergone stress, possibly from contamination.

1 = K DAMAGE TO FAUNA 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
Wildlife in Fish Cove are potentially exposed to ground-water contamination

1 = L CONTAMINATION OF FOOD CHAIN 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
N/A

1 = M UNSTABLE CONTAINMENT OF WASTES 4000 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
3 POPULATION POTENTIALLY AFFECTED 4 NARRATIVE DESCRIPTION
It is likely that no liner was installed in the landfill.

1 = N DAMAGE TO OFF-SITE PROPERTY 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
Mr. Sy Martin's private well has been contaminated ; he is now on municipal water supply. Contamination possible from Old landfill.

1 = O CONTAMINATION OF SEWERS STORM DRAINS WWTPs 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
No sewer system in the area.

1 = P ILLEGAL UNAUTHORIZED DUMPING 02 = OBSERVED (DATE _____) 1 = POTENTIAL 1 = ALLEGED
4 NARRATIVE DESCRIPTION
N/A

3 DESCRIPTION OF ANY OTHER KNOWN POTENTIAL OR ALLEGED HAZARDS
New Landfill has been monitored for leachate plume.
New Landfill located 1/4 mile northeast of Old landfill.

1 TOTAL POPULATION POTENTIALLY AFFECTED 2500
1 COMMENTS

SOURCES OF INFORMATION

H2M report: North Sea landfill ground water monitoring report
SHMP82-01 Mr. Sy Martin Resident Fish Cove Road.
Roux Associates Site inspection



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I IDENTIFICATION
01 STATE 02 SITE NUMBER
NYD 982531261

II PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A NPDES				
☐ B UIC				No Records
☐ C AIR				On site
☐ D RCRA				
☐ E RCRA INTERIM STATUS				
☐ F SPCC PLAN				
☐ G STATE Spec. #				
☐ H LOCAL Spec. # Southampton Town		1954-59	1960,61,62	Dumping Contract
☐ I OTHER Spec. #				
☐ J NONE				

III SITE DESCRIPTION

01 STORAGE/ DISPOSAL Check all that apply	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT Check all that apply	05 OTHER
☐ A SURFACE IMPOUNDMENT			☐ A INCINERATION	☐ A BUILDINGS ON SITE
☐ B PILES			☐ B UNDERGROUND INJECTION	
☐ C DRUMS ABOVE GROUND			☐ C CHEMICAL PHYSICAL	
☐ D TANK ABOVE GROUND			☐ D BIOLOGICAL	
☐ E TANK BELOW GROUND			☐ E WASTE OIL PROCESSING	
☒ F LANDFILL	unknown		☐ F SOLVENT RECOVERY	06 AREA OF SITE
☐ G LANDFARM			☐ G OTHER RECYCLING RECOVERY	10 Acres
☐ H OPEN DUMP			☐ H OTHER Spec. #	
☐ I OTHER Spec. #				

07 COMMENTS

No records on disposal
Landfill was closed over twenty years ago.

IV CONTAINMENT

01 CONTAINMENT OF WASTES Check one
☐ A ADEQUATE SECURE ☐ B MODERATE ☒ C INADEQUATE POOR ☐ D INSECURE UNSOUND DANGEROUS

02 DESCRIPTION OF DRUMS DRUMS LINERS BARRIERS ETC

Proper cap not installed after the landfill was closed, most likely no liner since it was open in 1930.

V ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☐ NO

02 COMMENTS

N/A

VI SOURCES OF INFORMATION Can include references to other reports, etc.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NYD 982531261

II DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check all that apply)			02 STATUS			03 DISTANCE TO SITE	
COMMUNITY	SURFACE	WELL	ENDANGERED	AFFECTED	MONITORED		
NON-COMMUNITY	A = C =	B X D X	A = D =	B = E X	C X F X	A 1 mile (mi) B 1000' (ft)	

III GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check all that apply)

☒ A ONLY SOURCE FOR DRINKING ☒ B DRINKING (FOR RESIDENTIAL USE)
☐ C COMMERCIAL INDUSTRIAL IRRIGATION ☐ D NOT USED (UNSEALABLE)

02 POPULATION SERVED BY GROUNDWATER 4000		03 DISTANCE TO NEAREST DRINKING WATER WELL 1 mile (mi)	
04 DEPTH TO GROUNDWATER 30' (ft)	05 DIRECTION OF GROUNDWATER FLOW North/Northwest	06 DEPTH TO AQUIFER OF CONCERN 30' (ft)	07 POTENTIAL YIELD OF AQUIFER (gpd)
08 DESCRIPTION OF WELLS (Name, depth, type, etc.)		09 SOLE SOURCE AQUIFER ☒ YES ☐ NO	

13 drinking wells within a 3 mile radius of the site

RECHARGE AREA

☒ YES ☐ NO	COMMENTS	☒ YES ☐ NO	COMMENTS
			Ground water discharge into North Sea Harbor

IV SURFACE WATER

01 SURFACE WATER USE (Check all that apply)

☒ A RESERVOIR RECREATION DRINKING WATER SOURCE ☐ B IRRIGATION ECONOMICALLY IMPORTANT RESOURCES ☐ C COMMERCIAL INDUSTRIAL ☐ D NOT CURRENTLY USED

02 AFFECTED POTENTIALLY AFFECTED BODIES OF WATER

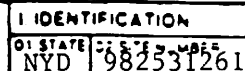
NAME	AFFECTED	DISTANCE TO SITE
Fish Cove	☐	2000' (ft)
North Sea Harbor	☐	1/2 mile (mi)
	☐	

V DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN			02 DISTANCE TO NEAREST POPULATION
ONE (1) MILE OF SITE A 1200 (NO. OF PERSONS)	TWO (2) MILES OF SITE B 3700 (NO. OF PERSONS)	THREE (3) MILES OF SITE C 8000 (NO. OF PERSONS)	1/4 mile (mi)
03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 1150			04 DISTANCE TO NEAREST OFF-SITE BUILDING 1/4 mile (mi)

05 POPULATION WITHIN VICINITY OF SITE (Within two-mile radius of site, or radius of population center, whichever is larger)

Sparsely populated residential area.
Residential area are concentrated into a few communities and there is vacant space between communities.



EPA FORM 2070-12(7-81)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NYD 982531261

II. SAMPLES TAKEN

None

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
	No measurements taken

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL	02 IN CUSTODY OF Roux Associates
03 MAPS ☐ YES ☐ NO	04 LOCATION OF MAPS

V. OTHER FIELD DATA COLLECTED

N/A

VI. SOURCES OF INFORMATION



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I IDENTIFICATION

G1 STATE G2 SITE NUMBER
NYD 982531261

II CURRENT OWNERS:				PARENT COMPANY			
01 NAME Howard Enterprises Inc.		02 D-B NUMBER		06 NAME		09 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc. P.O. Box 60554375		04 SIC CODE		10 STREET ADDRESS P.O. Box, RFD, etc.		11 SIC CODE	
05 CITY Southold		08 STATE 07 ZIP CODE NY 11971		12 CITY		13 STATE 14 ZIP CODE	
01 NAME		02 D-B NUMBER		06 NAME		09 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE		10 STREET ADDRESS P.O. Box, RFD, etc.		11 SIC CODE	
05 CITY		08 STATE 07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE	
01 NAME		02 D-B NUMBER		06 NAME		09 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE		10 STREET ADDRESS P.O. Box, RFD, etc.		11 SIC CODE	
05 CITY		08 STATE 07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE	
01 NAME		02 D-B NUMBER		06 NAME		09 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE		10 STREET ADDRESS P.O. Box, RFD, etc.		11 SIC CODE	
05 CITY		08 STATE 07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE	
01 NAME		02 D-B NUMBER		06 NAME		09 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE		10 STREET ADDRESS P.O. Box, RFD, etc.		11 SIC CODE	
05 CITY		08 STATE 07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE	
III. PREVIOUS OWNERS: (If none, skip to IV)				IV. REALTY OWNERS: (If none, skip to V)			
01 NAME Village of Southampton		02 D-B NUMBER		01 NAME Same		02 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc. Main Street		04 SIC CODE		03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE	
05 CITY Southampton		08 STATE 07 ZIP CODE NY 11946		05 CITY		08 STATE 07 ZIP CODE	
01 NAME Thomas Gill		02 D-B NUMBER		01 NAME		02 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc. 296 Hampton Road		04 SIC CODE		03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE	
05 CITY Southampton		08 STATE 07 ZIP CODE NY 11968		05 CITY		08 STATE 07 ZIP CODE	
01 NAME		02 D-B NUMBER		01 NAME		02 D-B NUMBER	
03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE		03 STREET ADDRESS P.O. Box, RFD, etc.		04 SIC CODE	
05 CITY		08 STATE 07 ZIP CODE		05 CITY		08 STATE 07 ZIP CODE	
V. SOURCES OF INFORMATION (If none, skip to VI)							
Assessors Office				Town of Southampton, NY, Hampton Road			



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART B - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NYD 982531261

II. CURRENT OPERATOR				OPERATOR'S PARENT COMPANY			
01 NAME None		02 D-B NUMBER		10 NAME		11 D-B NUMBER	
03 STREET ADDRESS		04 SIC CODE		12 STREET ADDRESS		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION		09 NAME OF OWNER					
III. PREVIOUS OPERATOR(S)				PREVIOUS OPERATORS' PARENT COMPANIES			
01 NAME Village of Southampton		02 D-B NUMBER		10 NAME		11 D-B NUMBER	
03 STREET ADDRESS Main Street		04 SIC CODE		12 STREET ADDRESS		13 SIC CODE	
05 CITY Southampton		06 STATE NY	07 ZIP CODE 11946	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 33		09 NAME OF OWNER DURING THIS PERIOD Same					
11 NAME		12 D-B NUMBER		10 NAME		11 D-B NUMBER	
13 STREET ADDRESS		14 SIC CODE		12 STREET ADDRESS		13 SIC CODE	
15 CITY		16 STATE	17 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
18 YEARS OF OPERATION		19 NAME OF OWNER DURING THIS PERIOD					
21 NAME		22 D-B NUMBER		10 NAME		11 D-B NUMBER	
23 STREET ADDRESS		24 SIC CODE		12 STREET ADDRESS		13 SIC CODE	
25 CITY		26 STATE	27 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
28 YEARS OF OPERATION		29 NAME OF OWNER DURING THIS PERIOD					
31 NAME		32 D-B NUMBER		10 NAME		11 D-B NUMBER	
33 STREET ADDRESS		34 SIC CODE		12 STREET ADDRESS		13 SIC CODE	
35 CITY		36 STATE	37 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
38 YEARS OF OPERATION		39 NAME OF OWNER DURING THIS PERIOD					
IV. SOURCES OF INFORMATION							



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - GENERATOR/TRANSPORTER INFORMATION

I IDENTIFICATION

01 STATE 02 SITE NUMBER
NYD 982531261

II ON-SITE GENERATOR

01 NAME N/A	02 D-B NUMBER
03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE

III OFF-SITE GENERATOR(S)

01 NAME N/A	02 D-B NUMBER	01 NAME	02 D-B NUMBER
03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE	03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER
03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE	03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME N/A	02 D-B NUMBER	01 NAME	02 D-B NUMBER
03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE	03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D-B NUMBER	01 NAME	02 D-B NUMBER
03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE	03 STREET ADDRESS P.O. Box, RFD, etc.	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION

01 SOURCE OF INFORMATION 02 DATE OF INFORMATION 03 SOURCE OF INFORMATION 04 DATE OF INFORMATION



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

1 IDENTIFICATION
01 STATE 02 SITE NUMBER
NYD 982531261

II. PAST RESPONSE ACTIVITIES

01 ☐ A WATER SUPPLY CLOSED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ B TEMPORARY WATER SUPPLY PROVIDED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ C PERMANENT WATER SUPPLY PROVIDED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ D SPILLED MATERIAL REMOVED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ E CONTAMINATED SOIL REMOVED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ F WASTE REPACKAGED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ G WASTE DISPOSED ELSEWHERE
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ H ON SITE BURIAL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ I IN SITU CHEMICAL TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ J IN SITU BIOLOGICAL TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ K IN SITU PHYSICAL TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ L ENCAPSULATION
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ M EMERGENCY WASTE TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ N CUTOFF WALLS
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ O EMERGENCY DIKING SURFACE WATER DIVERSION
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ P CUTOFF TRENCHES/SLUMP
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

01 ☐ Q SUBSURFACE CUTOFF WALL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

L IDENTIFICATION

01 STATE 02 SITE NUMBER
NYD 982531261

II PAST RESPONSE ACTIVITIES

01 = R BARRIER WALLS CONSTRUCTED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = S CAPPING COVERING
04 DESCRIPTION

02 DATE

03 AGENCY

01 = T BULK TANKAGE REPAIRED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = U GROUND CURTAIN CONSTRUCTED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = V BOTTOM SEALED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = W GAS CONTROL
04 DESCRIPTION

02 DATE

03 AGENCY

01 = X FIRE CONTROL
04 DESCRIPTION

02 DATE

03 AGENCY

01 = Y LEACHATE TREATMENT
04 DESCRIPTION

02 DATE

03 AGENCY

01 = Z AREA EVACUATED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = 1 ACCESS TO SITE RESTRICTED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = 2 POPULATION RELOCATED
04 DESCRIPTION

02 DATE

03 AGENCY

01 = 3 OTHER REMEDIAL ACTIVITIES
04 DESCRIPTION

02 DATE

03 AGENCY

III SOURCES OF INFORMATION (Can specify references to 10 CFR 192.103(a)(2)(ii) and 10 CFR 192.103(a)(3))



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

1 IDENTIFICATION

01 STATE	02 SITE NUMBER
NYD	982531261

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL STATE LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION Can include references to other data sources used.

6.0 DATA ADEQUACY AND RECOMMENDATIONS

6.1 Data Adequacy

The information gathered for completing the HRS score sheets for the Old North Sea landfill is incomplete. The scores for ground water, surface water and air are 0. No records could be found concerning the quality and quantity of the wastes buried at the landfill. These are important factors for evaluating the site which has a potential for ground water contamination.

6.2 Recommendations

A Phase II investigation is recommended to obtain analytical data on ground water to determine the presence, if any, of contamination. The ground-water within a three mile radius of the site serves as drinking water for approximately 4000 people.

6.2.1 Task 1 - Site Reconnaissance

After a review of the Phase I study and any further updated information, a site visit will be conducted to characterize site accessibility for the Phase II study. The site

reconnaissance is a rapid screening process for collection of preliminary information concerning:

- o The feasibility of a geophysical survey
- o Drill rig access
- o Subsurface utilities
- o Location of potential test borings and monitoring wells
- o Site hazards

6.2.2 Task 2 - Geophysical Survey

A preliminary screening of the site will be conducted using a geophysical method known as induction conductivity. This method utilizes the assumption that the electrical conductivity of various natural earth materials and artificial fill (or waste) can be significantly different.

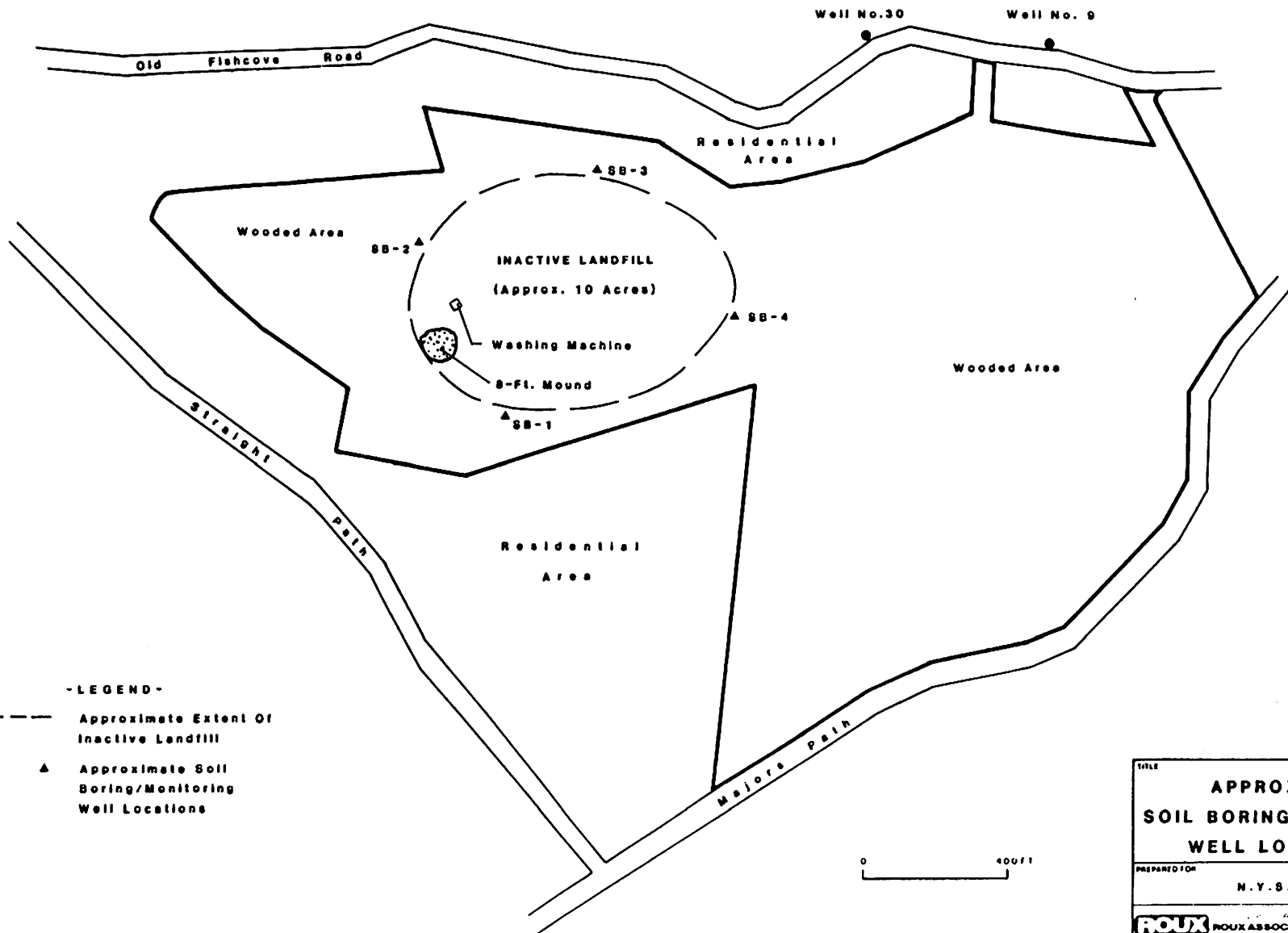
The conductivity equipment to be used is the EM-31, manufactured by Geonics, Ltd. The survey intends to provide preliminary screening of the site and help in locating buried metallic objects (pipes, drums, machine parts), as well as attempt to distinguish a leachate plume in ground water. The survey will also aid in the selection of locations for potential test borings and monitoring well

installations.

6.2.3 Task 3 - Soil Borings and Monitoring Wells

Roux Associates recommends that four soil borings be drilled and four monitoring wells installed to NYSDEC specifications. Approximate locations of proposed test borings are shown on Figure 3. The soil borings will be used to evaluate the subsurface geology of the site and determine the horizontal and vertical extent of soil contamination, if present. Installation of monitoring wells will characterize the ground-water regime at the site. One monitoring well location will be located upgradient (south) of the site. This well will monitor the quality of ground water entering the site. The other three wells will be located around the perimeter of the site to determine the direction of ground-water flow and presence of contamination downgradient of the landfill.

A truck mounted hollow stem auger rig will be used to drill soil borings. Soil samples will be collected at 5 foot intervals, or at a major stratigraphy change, with a split-spoon sampler. The spoon is driven 2 feet ahead of the auger flytes into undisturbed sediments using a 140 lb weight. A geologist will open the spoon, log the core in



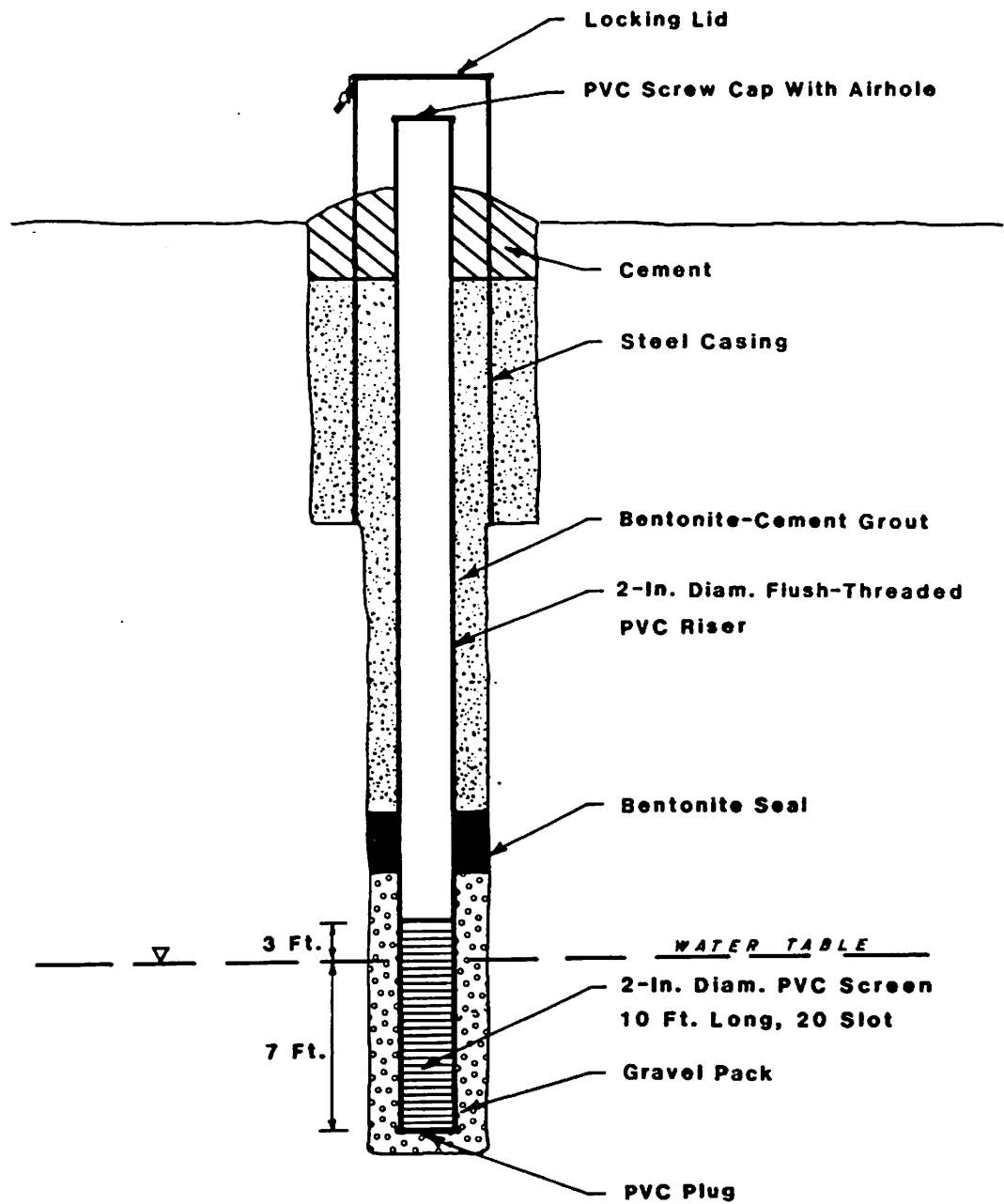
TITLE	
APPROXIMATE SOIL BORING/MONITORING WELL LOCATIONS	
PREPARED FOR	
N.Y.S.D.E.C.	
ROUX	ROUX ASSOCIATES INC.
SCALE Sheet 100'	FIGURE 3

detail, and place the sample in a clean glass jar. After each sample is collected and logged the auger flytes are advanced another five feet where the sampling process is repeated. A photoionization meter or organic vapor instrument will be used to screen soil samples and possible organic vapor emissions from drilling operators.

After each boring is completed, a ten-foot two-inch diameter, flush joint, threaded PVC screen will be set to bridge the water table. Blank PVC pipe will be installed above the screen zone to land surface through the hollow stem auger flytes.

A gravel pack will be placed around and above the screen zone. A bentonite seal will then be placed above the gravel pack, the remaining annular space will be grouted with a cement/bentonite slurry to within three feet of land surface. A steel protective casing, with locking lid, is then cemented over the wells for protection (Figure 4).

After well installation, the wells are developed by an air compressor to remove fine sediments and ensure a good hydraulic connection between the screen and the formation. The wells are then surveyed to a vertical precision of .01 feet using designated measuring points on the PVC casings.



TITLE		
MONITORING WELL CONSTRUCTION DETAILS		
PREPARED FOR		
N. Y. S. D. E. C.		
ROUX	Consulting Ground-Water Geologists	SCALE
	ROUX ASSOCIATES INC.	None
	DATE	FIGURE
	7/87	4

Water levels in the monitoring wells are recorded using a steel measuring tape and electric probe.

6.2.4 Task 4 - Well Sampling and Analyses

A Quality Assurance/Quality Control (QA/QC) plan will be developed and approved by the NYSDEC before work is started.

No records of previous sampling at the landfill have been found, therefore it is recommended that analysis of ground water samples include the 130 organic and 25 inorganic parameters listed in Statement of Work No. 784, New York State Department of Environmental Conservation Superfund and Contract Laboratory Protocol, January 1985. Also, all additional non-priority pollutant GC/MS major peaks will be identified and quantified.

One set of water samples will be collected and analyzed from each monitoring well. The analytical data will be used to indicate the presence or absence of a contaminated ground water.

6.2.5 Task 5 - Quality Assurance/Quality Control

On a daily basis, a Project Manager will be responsible for

the supervision, direction and review of project activities. A Quality Assurance Officer will be responsible for QA/QC protocols which will be developed in accordance with NYSDEC guidelines and approval.

6.2.6 Task 6 - Health and Safety Plan

A Health and Safety Plan provides an integrated approach for reducing the potential for harm to workers on site. The level of protection selected would be based on the type and measured concentration of the chemical substance(s) in the ambient atmosphere and its toxicity, potential to exposure or direct contacts. At this site however, type of chemicals, concentration and possibilities of contact are unknown. The appropriate level of protection shall be selected based on field measurement of organic vapors and judgement until the hazards are better identified. Air quality will be monitored intermittently using a photoionization meter (HNU) or equivalent instrument.

During Phase II operations the site Health and Safety Plan will be in accordance with OSHA Standards as stated in 29 CFR 1900 to 1999 and the U.S. EPA office of Emergency and Remedial Response Interim Standard Operating Safety Guide.

6.2.7 Task 7 - Phase II Assessment

Utilizing data obtained from Phase II investigations the following will be completed:

- o EPA Form 2070-13
- o EPA Form 2070-12 (Part I)
- o HRS scores
- o Discussion on potential risks to human health or the environment if contamination is confirmed.

6.2.8 Task 8 - Phase II Report

The Phase II report will be prepared in accordance with current NYSDEC guidelines. Included in this report are:

- o Phase II field results
 - a. Site reconnaissance
 - b. Geophysics
 - c. Soil borings and monitoring wells
 - d. Sampling and analysis
 - e. Maps/plans
 - f. Other collected information.

- o Final HRS Scores and EPA Forms
- o A Discussion of Remedial Alternatives

APPENDIX A

APPENDIX A

BIBLIOGRAPHY

- A-1 J. Yeary (Roux Associates) telephone conversation regarding Old North Sea Landfill. (6/12/87)
- A-2 J. Yeary telephone conversation with Ken Thoman, Town Clerk, Town of Southampton. (6/15/87)
- A-3 B. Thomas telephone conversation with Water Authority concerning population served. (7/8/87)
- A-4 Notes from NYSDEC files on Old North Sea Landfill.
- A-5 Memorandum from Southampton Town files regarding ground-water conditions near active landfill.
- A-6,7,8 Notes from NYSDEC files regarding Old North Sea Landfill.
- A-9 Letter to Sy Martin in reference to an interview conducted on 6/19/87.

A-1

ROUX ASSOCIATES, INC.

Telephone Conversation Sheet

Caller Joanne Yeary

Company _____

Contact _____

Telephone # _____

in Ref. to Old North Sea Landfill

DATE

COMMENTS

June 12 '87	① Called TOS Highway dept 728-3600 Said I would have to speak w/ Brian Gilbride at active Landfill - 283-5210 ② Brian Gilbride knows nothing about old landfill - never worked there. Call Southampton village - they own land. Speak with village clerk Geo Andrews @ 283-0247 because the town maintained the site, but owned by village. ③ Geo. Andrews says the town owns it not the village. He said he hasn't the foggiest idea who I should call next - maybe try Town Clerk - Ken Thoman @ 283-6000. OK.
June 15 '87	④ Ken Thoman - he knows nothing either, but says to visit ^{Town Hall} & look for files. continued . . .

ROUX ASSOCIATES, INC.

Telephone Conversation Sheet

Caller Joanne Yeary
 Company Town of Southampton Town Clerk
 Contact Ken Thoman Telephone # 283-6000
in Reference to Old North Sea Landfill

DATE

COMMENTS

June 15'87 Says he knows nothing about an old landfill - he has been there for 7 years. Doesn't know if they have any files, but says to come out & have a look. They are open from 8:30 to 4:00 PM. Someone in office says the Old Landfill is across the Street from the active landfill before its entrance, and on the West Side of Majors Path. Bring camera. Will meet at town hall Friday morning June 19th.

ROUX' ASSOCIATES, INC.

Telephone Conversation Sheet

Caller Brian Thomas

Company Suffolk County Water Authority East Hampton office

Contact _____ Telephone # 516 324 0959

DATE _____

COMMENTS

7/2/87 I called to inquire how many people are served by ~~the~~ public water in the town of Southampton. The person at the Water Authority said it would take some time to research. I asked if it was less than 10,000 people. She said she recently had done some work for her boss on this and that the number of homes was roughly 2500.

MEMORANDUM
Department of Health Services

A5

TO: James C. Maloney, P.E.
FROM: Steven J. Kramer
DATE: March 7, 1983
REF: Town of Southampton Annual Groundwater Monitoring Report
- 1982.

A review of this document indicates that:

- (1) A lead plume continues to exist as part of the overall leachate plume. Concentrations have increased in Well #1 from .085 to 0.20 Mg/l. The drinking water standard is .050 Mg/l.
- (2) That a well defined leachate plume exists and has contaminated Wells #1, 9 and 30.
- (3) Iron concentration remains high within the plume. Total organic carbon and specific conductivity have increased over the year from 5.2 to 68.7 Mg/l and 700 to 1,100 uhos/cm. Chlorides also increased from 60 to 87 Mg/l. Ph also fell to 6.4 and 5.9 as evidenced on Table 3-7 but not noted or identified as such in the document.
- (4) That the upgradient well was not constructed for this report so no background true data exists.
- (5) That N.Y. State Drinking Water Standards were exceeded in Well #1 for lead and Well #9 for cadmium, mercury and lead. N.Y. State Ground Water Standards were exceeded in Well #1 for iron, lead, manganese and vcm; Well #9 for cadmium, mercury, lead, manganese and iron, Well #30 for iron and manganese. Ph values were depressed in

A-6

360 Facility No. _____ Inactive Hazardous Waste Site No. 152051, 2a
Date of Next Inspection or Action _____ Reference No. 529
Date of Last Inspection _____ Compliance Status 7
☒ Landfill _____ Construction and Demolition Sites _____ Other _____
Facility Name Old N. Sea
Facility Address MAJORS PATH Wagon wgt of Majors
Facility Owner(s) S. Hamp. Hwy Dep. N of St. Vincent Port.
Mailing Address 16 S. Vincent Port. Camp 22 ye 11116
Telephone No. _____
Facility Contact _____ NYSDEC Contact _____
Site Description: Acres 28 Lined Area 102
Date Opened 1940 Date Closed 1964
Permit No. _____ Permit Issued _____ Permit Expired _____
Types of Wastes Accepted:
☒ Brush _____ ☐ Compost _____ ☐ Incineration Waste _____ ☐ Demolition
☒ Municipal _____ ☐ Scavenger _____ ☐ Agricultural _____ ☐ Waste Oil
☒ Sewage _____ ☐ Other _____
Consent Orders: _____

Date	Number	Active	Inactive	In Compliance?		
				Yes	No	Unknown

Groundwater Monitoring System _____
Depth to Groundwater _____
Direction of Groundwater Flow _____
Most Recent Groundwater Analysis _____

Methane/Odor Problems _____

Methane Monitoring _____ Venting _____ Recovery _____ Notes _____

Leachate Problems _____

Leachate Collection System? _____

Leachate Treatment? _____

Notes _____

owned by village during that

A-7

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a

REGION: 1

SITE CODE: 152051

NAME OF SITE : Old North Sea Landfill

STREET ADDRESS: Majors Path

TOWN/CITY:

North Sea

COUNTY:

Suffolk

ZIP:

11946

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 10 +/- Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME....: ~~Town of~~ Southampton, Village of

CURRENT OWNER ADDRESS.: ~~Hampton Road~~ - Southampton, NY 11946, Main St

OWNER(S) DURING USE....: ~~Town of~~ Southampton, Village of

OPERATOR DURING USE....: ~~Town of~~ Southampton, ~~Port of Highways~~ Village of

OPERATOR ADDRESS.....: ~~20 Jackson Ave. Hampton Bays, NY 11740~~ Main St, S

PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From

To Unknown

SITE DESCRIPTION:

Inactive landfill and septage lagoon. ?

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected -X

-----TYPE----- QUANTITY (units)-----
Mixed municipal wastes Unknown

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

A-8

CLASSIFICATION CODE: 2a

REGION: 1

SITE CODE: 152051
EPA ID:

NAME OF SITE : Old North Sea Landfill

STREET ADDRESS: Majors Path

TOWN/CITY:

North Sea

COUNTY:

Suffolk

ZIP:

11946

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 10 +/- Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME....: Town of Southampton

CURRENT OWNER ADDRESS.: Hampton Road - Southampton, NY 11946

OWNER(S) DURING USE....: Town of Southampton

OPERATOR DURING USE....: Town of Southampton Dept. of Highways

OPERATOR ADDRESS.....: 20 Jackson Ave, Hampton Bays, NY 11946

PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To Unknown

SITE DESCRIPTION:

Inactive landfill and septage lagoon.

Municipal Waste ID# 52S71

HAZARDOUS WASTE DISPOSED: Confirmed-
TYPE

Suspected-X
QUANTITY (units)

Mixed municipal wastes

Unknown

CONSULTING GROUND-WATER
GEOLOGISTS AND ENGINEERS
ROUX ASSOCIATES INC



11 STEWART AVENUE
HUNTINGTON, NEW YORK 11743 516 673-7200

A-9

July 31, 1987

Mr. Sy Martin
Old Fish Cove Road
North Sea, NY 11968

Dear Mr. Martin:

On June 19, 1987 you may recall that Joanne Yeary and myself visited your home and informed you that we are from Roux Associates. We stated that we were performing a Phase I investigation on the old landfill. The interview that you have us has been recorded and we would like to use the interview as a reference for a report that is currently being assembled. In order for us to use your interview, we need your permission. Please review what is recorded below and sign the document if you agree to let us use the information.

We would very much appreciate your help in this matter. If there are any questions you may have, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Thomas", with a long, sweeping horizontal line extending to the right.

Brian Thomas
Geologist

BT:jd

On June 19, 1987

Spoke with Mr. Sy Martin, resident nearby Old North Sea landfill. Mr. Martin says he's lived here for 60 years and remembers the old landfill. The approximate location of the site was shown to us by Mr. Martin. He said that a pit was dug 10 - 15 feet deep and the people of Southampton village used to dispose of their trash here. Approximately 1500 people used to use the landfill. It opened around 1930 and closed down in 1963. The new landfill opened up in 1964. Mr. Martin and some of the neighbors signed a petition against the opening of the new landfill at its present location. His private drinking well had been contaminated 7 - 8 years ago and is now connected to the town public water. Mr. Martin then showed us the runoff and ground water contamination in Fish Cove, mostly likely from the new Landfill. Finally he pointed out a monitoring well near his home and says there are more around the corner. The wells are sampled approximately every 6 months.

Interviewee has not responded
to letter sent to him.

APPENDIX B

B1

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: _____ SITE CODE: 152051
NAME OF SITE: Old North Sea Landfill REGION: 1
STREET ADDRESS: Majors Path
TOWN/CITY: North Sea COUNTY: Suffolk
NAME OF CURRENT OWNER OF SITE: Howard Enterprises, Inc.
ADDRESS OF CURRENT OWNER OF SITE: P.O. Box 60554375, Southold, NY 11971
TYPE OF SITE: OPEN DUMP ☐ STRUCTURE ☐ LAGOON ☐
LANDFILL ☒ TREATMENT POND ☐
ESTIMATED SIZE: 10 ACRES

SITE DESCRIPTION:

Inactive landfill which has been backfilled with sand and gravel. There are junked parts of cars and other machines on site. Apparently dumped after the site was closed. Local residents use the site for a practice shooting range. The site is enclosed by woods. Vegetation grows sparsely on the covered fill.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐	SUSPECTED ☒
TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:	
TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
<u>Mixed municipal waste</u>	<u>Unknown</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

B2

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 19 30 TO _____, 19 64

OWNER(S) DURING PERIOD OF USE: Village of Southampton

SITE OPERATOR DURING PERIOD OF USE: Village of Southampton

ADDRESS OF SITE OPERATOR: Main Street, Southampton

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☐ GROUNDWATER ☐
SOIL ☐ SEDIMENT ☐ NONE ☒

CONTRAVENTION OF STANDARDS: GROUNDWATER ☒ DRINKING WATER ☒
SURFACE WATER ☐ AIR ☐

SOIL TYPE: Sand and gravel

DEPTH TO GROUNDWATER TABLE: Approximately 30 feet

LEGAL ACTION: TYPE: None

STATE ☐ FEDERAL ☐

STATUS: IN PROGRESS ☐

COMPLETED ☐

REMEDIAL ACTION: PROPOSED ☐

UNDER DESIGN ☐

IN PROGRESS ☐

COMPLETED ☐

NATURE OF ACTION: _____

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

The shallow depth of ground water at the site could lead to groundwater contamination by way of leachate.

ASSESSMENT OF HEALTH PROBLEMS:

Ground water within a 3 mile radius of the site is used as drinking water. There is a potential threat that drinking water could be contaminated

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

NAME _____
TITLE _____
NAME _____
TITLE _____
DATE: _____

NEW YORK STATE DEPARTMENT OF HEALTH

NAME _____
TITLE _____
NAME _____
TITLE _____
DATE: _____