H2MGROUP

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VIA FEDERAL EXPRESS

August 4, 1989

Alice McCarthy, Esq.
New York State Dept. of Environmental Conservation
Division of Environmental Enforcement
202 Mamaroneck Avenue, Room 304
White Plains, New York 10601-5381

Re: Phase II Investigation Report
Rite-Off, Inc.
Bay Shore, New York
NYSDEC Site No. 152129

Dear Ms. McCarthy:

Enclosed please find two copies of the Phase II Investigation Report prepared by H2M for the Rite-Off site (NYSDEC Site No. 152129). The investigation was performed in accordance with a work plan approved by NYSDEC and dated April 1988.

Please call if you have any questions or comments.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

Michael V. Tumulty, P.E.

MVT/lc

Enclosures

cc: Michael J. O'Toole, NYSDEC (2 copies, w/o 12 vol. CLP data pkg.)
Harold Berger, NYSDEC (2 copies, w/o 12 vol. CLP data pkg.)
Ronald Tramontano, NYSDOH (2 copies, w/o 12 vol. CLP data pkg.)
Robert Fardella, Esq., Rite-Off
Howard Rapps, Rite-Off

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NYSDEC REGION 1
NYS DEC SOLID WASTE REMEDIATION

PHASE II INVESTIGATION

RITE-OFF, INC. SITE
BAYSHORE, NEW YORK
SUFFOLK COUNTY

NYSDEC SITE No. 152129

PREPARED FOR
RITE-OFF INC.

JULY 1989

H2MGROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. RIVERHEAD, N.Y. FAIRFIELD, N.J.

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PHASE II INVESTIGATION REPORT

RITE-OFF, INC.

BAY SHORE, NEW YORK

(NYSDEC Site No. 152129)

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(12 VOLUME CLP DATA PACKAGE)

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SCORING SHEETS

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PHASE II INVESTIGATION REPORT

RITE-OFF, INC.

BAY SHORE, NEW YORK

(NYSDEC Site No. 152129)

JULY 1989

1.0 - EXECUTIVE SUMMARY

1.1 - INTRODUCTION

Rite-Off, Inc. commissioned Holzmacher, McLendon & Murrell, P.C. (H2M) to perform this Phase II Investigation at the Rite-Off facility in Bay Shore, New York. The investigation was conducted in conformance with a Work Plan dated April 1988 and approved by the New York State Department of Environmental Conservation (NYSDEC). This report conforms to formats provided in NYSDEC guidance documents dated July 1985 (revised May 9, 1988) for Phase II Investigation Reports.

The report documents the investigations undertaken and presents the findings of the studies performed at the site including a Hazard Ranking System (HRS) score.

1.2 - PLANT OPERATIONS

Rite-Off, Inc. blends and packages spray lubricants, spray solvents, spray insecticides and other aerosol products. The company employs approximately 35 people.

The processes at the facility consist of blending raw materials in mixing vessels, transfer of these blended materials into aerosol cans and pressurizing the cans. The finished product is then "burst tested" at elevated temperature under controlled conditions. Once passed the "burst test", the cans are stenciled, or gummed labels are applied to the can surface. The cans are then transported to the 1555 Fifth Industrial Court warehouse for storage prior to shipping.

Other factory operations include the distilling/reclamation of solvents. Solvents which have become contaminated with products during cleaning operations are reclaimed for future use using an electrically heated still. This still boils the solvent then condenses the purified vapors. Non-contact water flowing through a condenser apparatus is used to condense the hot vapors. This water is then discharged to the sanitary leaching system. The residual still bottoms are then disposed of by a licensed industrial waste hauler.

1.3 - SITE DESCRIPTION

Rite-Off is located at 1545 and 1555 Fifth Industrial Court, Bay Shore, New York. The original building on the parcel is the

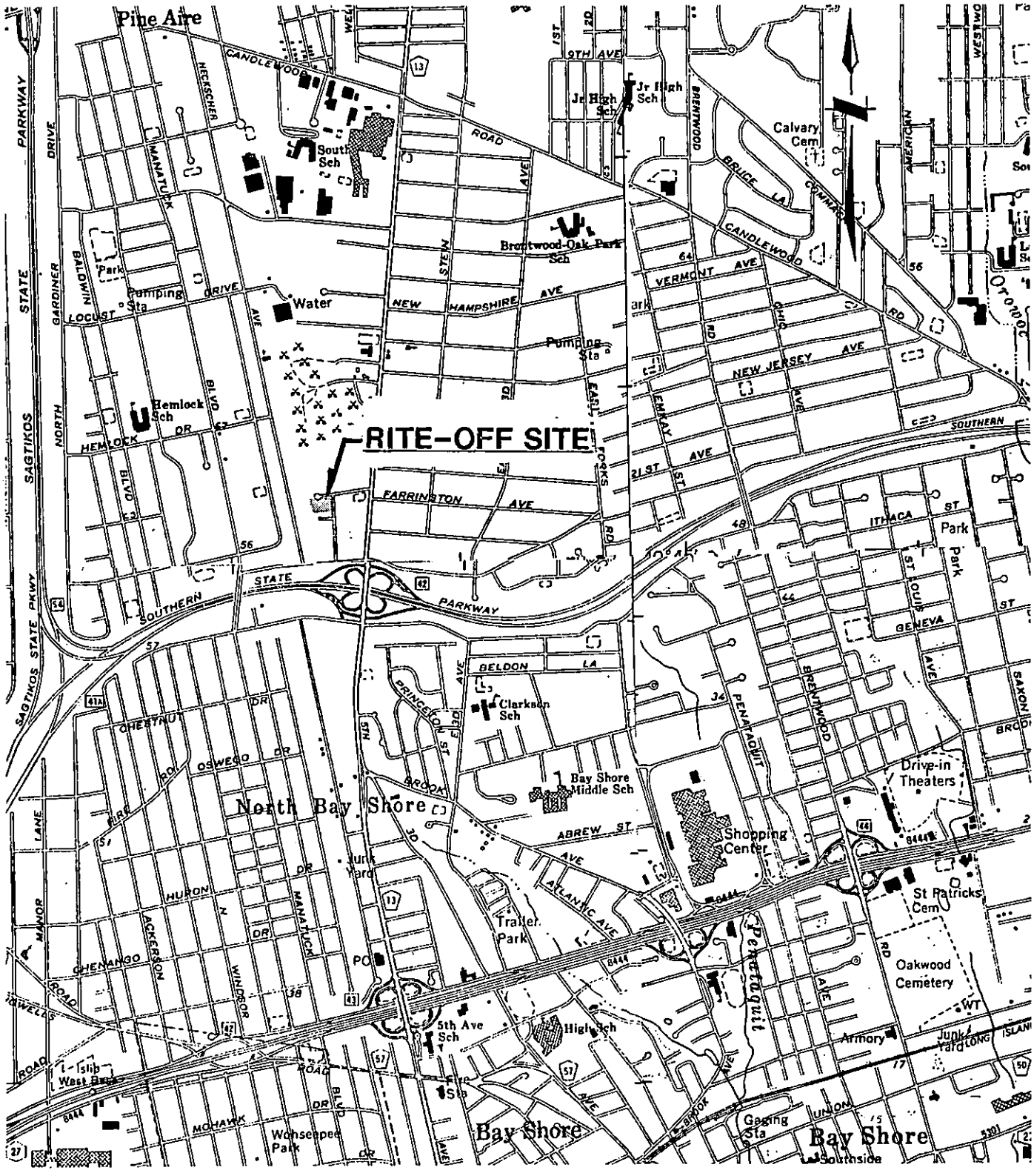
1545 location. This building was occupied by an electronics company and then a lamp company prior to occupancy by Rite-Off in 1974. Rite-Off purchased the parcel in 1984 and later expanded by building a warehouse, which is now referred to as 1555 Fifth Industrial Court. National Designs and Development Corp. (an architectural firm) rents a portion of the warehouse.

For the purposes of this report, the "site" refers to the parcel of land incorporating both buildings (Section 244, Block 2, Lots 60.2 and 61). See Figure 1, Location Map.

Two single-story industrial buildings occupy about half of the approximately 300 feet by 420 feet site. The property is bordered by chain link fencing on the south and west edges and by Fifth Industrial Court on the east and north. The site is level and partially paved.

The site is situated in a highly industrialized area. North of the site is a waste transfer station, a Sears & Roebuck Company warehouse, and a chemical company; to the east is an empty lot, office building and plastics manufacturing company; to the southeast is a garbage hauling company; to the south is another plastics manufacturing company; and to the west is a residential community.

A public water supply well field, the Thomas Avenue Well Field, is located approximately 4,550 feet downgradient from the Rite-Off site.


RITE-OFF SITE
Pine Aire
North Bay Shore
Bay Shore
Bay Shore
Southside
Brentwood-Oak Park Sch
Hemlock Sch
Clarkson Sch
Bay Shore Middle Sch
5th Ave Sch
High Sch
Jr High Sch
South Sch
Calvary Cem
St Patricks Cem
Oakwood Cemetery
Drive-in Theaters
Shopping Center
Trailer Park
Junk Yard
Junk Yard
Armory
Pumping Sta
Water
Pumping Sta
Gasing Sta
Fire Sta
Wohseepee Park
Park
Park
Park
PO
Slip
West Brook
Penataquit
Penataquit
Long Island
Sagtikos State Pkwy
Gardiner Parkway
State Parkway
Southern State Parkway
Candlewood Road
Brentwood Road
Brentwood Road
Brentwood Road
Pennsylvania Ave
Vermont Ave
New Hampshire Ave
New Jersey Ave
Southern Ave
Farrington Ave
Beldon La
Abrew St
Atlantic Ave
Atlantic Ave
Atlantic Ave
Ithaca St
Geneva St
Saxon Ave
Broadway
Penataquit Ave
Penataquit Ave
Penataquit Ave
Springson St
Brook
Brook
Brook

Water is supplied to Rite-Off by the Suffolk County Water Authority (SCWA). On-site there are no diffusion or supply wells. Non-contact cooling water from the reclamation still is discharged to the sanitary system.

Rite-Off is not within a sewer district. On-site there is one septic tank and leaching pool. Since Rite-Off's ownership, they have not required pumping.

A total of seven stormwater runoff dry wells drain the site and are located in the front and rear of the property in paved areas.

There is one underground 5,000 gallon fuel oil storage tank adjacent to the northwest corner of the manufacturing building. In addition, there are four above-ground tanks; one contains CO_2, one contains Freon-12, and two contain Freon-22; all four tanks are located behind (immediately south of) the manufacturing building. According to facility personnel, all these tanks are registered with the Suffolk County Department of Health Services (SCDHS). Rite-Off also holds an air emissions permit with the SCDHS, and maintains a United States Environmental Protection Agency (USEPA) identification number for waste disposal. Cycle Chemical Company of New Jersey provides Rite-Off, Inc. transportation and disposal services for spent solvents and still bottom materials.

The 55-gallon drums containing the spent solvents and still bottom materials are stored inside the buildup in an area specifically allocated for this purpose, until they are picked up

by Cycle for disposal. Historically, previous storage areas on-site included a fenced area behind the manufacturing building where drums were placed on pallets and an area in between the manufacturing building and the warehouse. Defective spray cans are disposed of by the facility by emptying of their contents, puncturing the bottom and storage for thirty (30) days in trailers behind the warehouse, which allows for volatilization prior to being placed in the dumpster as non-hazardous waste.

In September of 1983, the manufacturing building was vandalized and the trespassers opened tanks containing tetrachloroethene and mineral spirits. Although the mineral spirits spill was contained inside the building, approximately 120 gallons (per SCDHS) of tetrachloroethene drained outdoors to the storm drains in the rear of the building. Rite-Off reported the incident to the Suffolk County Police Department, SCDHS and USEPA. With SCDHS oversight, a contractor, RGM, Inc., was hired to cleanup the spill, which included pumping out the storm drain and excavation of soils where the tetrachloroethene was diverted.

1.4 - PHASE II EFFORT

The Phase II investigation at the Rite-Off site will provide data to help define hydrogeologic characteristics and the nature and extent of groundwater contamination, if any, that might be present beneath the site. The scope of the investigation was developed in consultation with the New York State Department of Environmental Conservation (NYSDEC) and is described in a work

plan approved by the NYSDEC dated April 1988, and amended in October 1988. The primary field activities are: (1) geophysical mapping; (2) soil gas probing; (3) subsurface soil sampling; (4) drilling and sampling five borings; (5) the installation of five groundwater monitoring wells; (6) water level monitoring; (7) groundwater sampling of the five new monitoring wells; (8) sampling of the septic system; and (9) sampling of seven storm-water runoff dry wells.

2.0 - PURPOSE OF INVESTIGATION

The NYSDEC performed sampling at Rite-Off on two occasions, and found elevated concentrations of solvents in on-site soils and waters. Based on this sampling data, concerns regarding the storage of hazardous wastes and the previous disposal practices at the facility, the NYSDEC and Rite-Off entered into an Order of Consent. This order requires Rite-Off to perform a Phase II Investigation.

2.1 - OBJECTIVES

The objectives of this Phase II hydrogeologic investigation were to:

- Perform a geophysical survey;
- Perform a soil gas probing program to identify "hot spots";
- Conduct a subsurface soil sampling program;
- Install five (5) groundwater monitoring wells;
- Perform an elevation survey of the five (5) newly installed wells;
- Perform groundwater elevation monitoring to identify flow direction;
- Determine the nature and extent of groundwater contamination that may be present beneath the Rite-Off site;

- Conduct sanitary system sampling to assess non-contact cooling water impacts, and discharges other than sanitary wastes to the system, if any;
- Conduct stormwater dry well sampling to identify runoff impacts, "housekeeping" practices, past disposal practices and chemical transfer practices;
- Evaluate neighboring land uses, and environmental investigation being conducted in the area; and
- Develop and submit a final report presenting the findings of these investigations.

3.0 - SCOPE OF WORK; PHASE II EFFORT

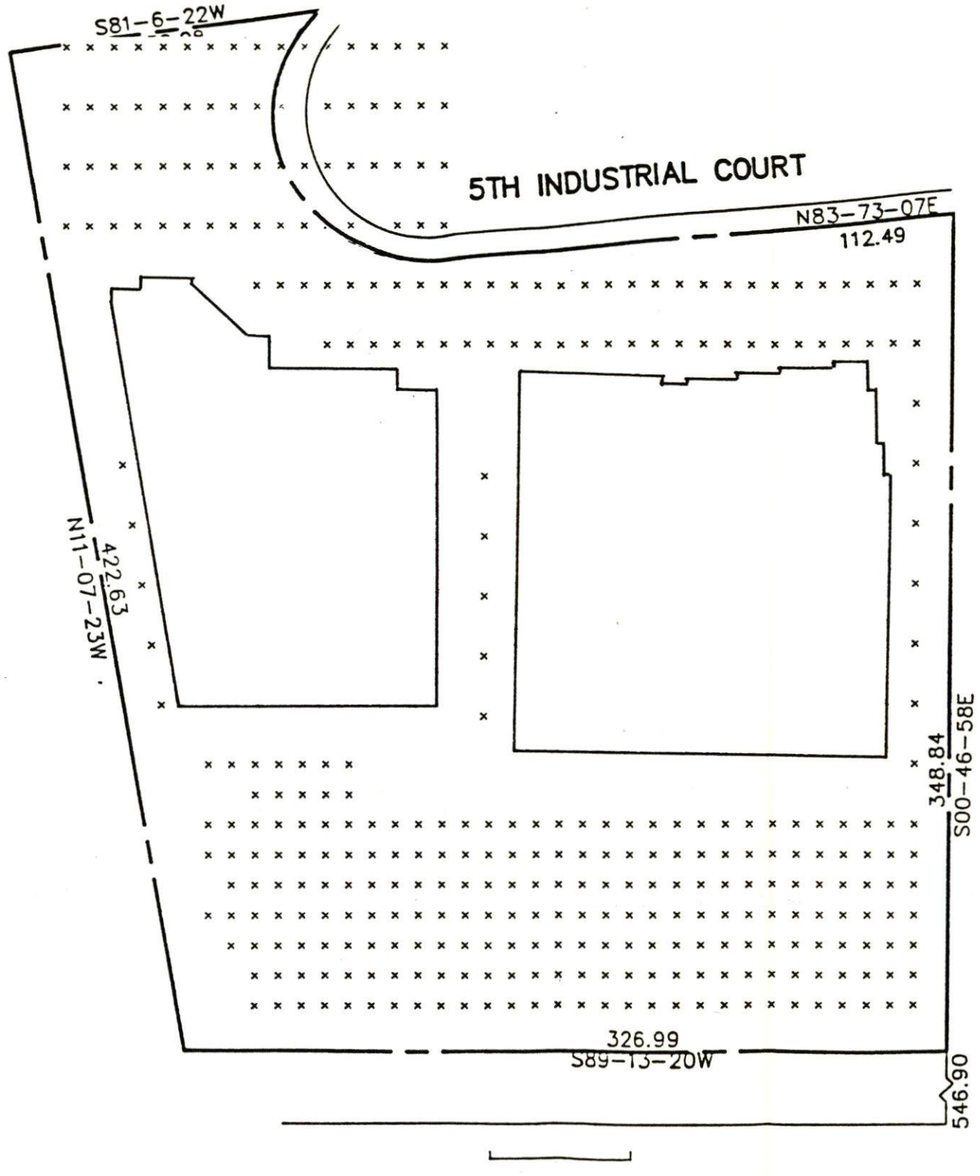
3.1 - GEOPHYSICAL SURVEY

Hager-Richter Geoscience, Inc., as a subconsultant to H2M, conducted a magnetic survey at the Rite-Off site on January 12, 1989. The magnetic survey was conducted only in the areas outside the two buildings. The survey was performed for the purposes of identifying subsurface anomalies (i.e., buried metallic objects), and to help assure that monitoring wells would not be drilled into buried utilities or other objects.

The magnetic survey was conducted using an EG&G Model G856 Proton Precession Portable Magnetometer. The G856 is a micro-processor controlled instrument with a resolution of 0.1 gamma, accuracy of 1 gamma. A 10 feet by 25 feet station spacing for the northern part of the site and a 10 feet by 12.5 feet station spacing for the southern part of the site was used. The station grid was oriented perpendicular to the east border of the site. Magnetic data were collected at 369 stations. Figure 2 is a magnetic station map for the site. All locations are measured from the southeast corner.

A base magnetic station was occupied approximately every hour to obtain data necessary to remove the temporal variation in the Earth's magnetic field. The survey data were processed by correcting each reading for the temporal "drift" of the magnetic field based on the base station data. The corrected data were then plotted and contoured by a contouring program developed for

FIGURE 2



5TH INDUSTRIAL COURT

RITE-OFF SITE
BAY SHORE, NEW YORK

MAGNETIC STATIONS

Scale: 1 Inch = 60 Feet

use with spatial geophysical data such as those obtained in gravity, magnetic and certain other surveys.

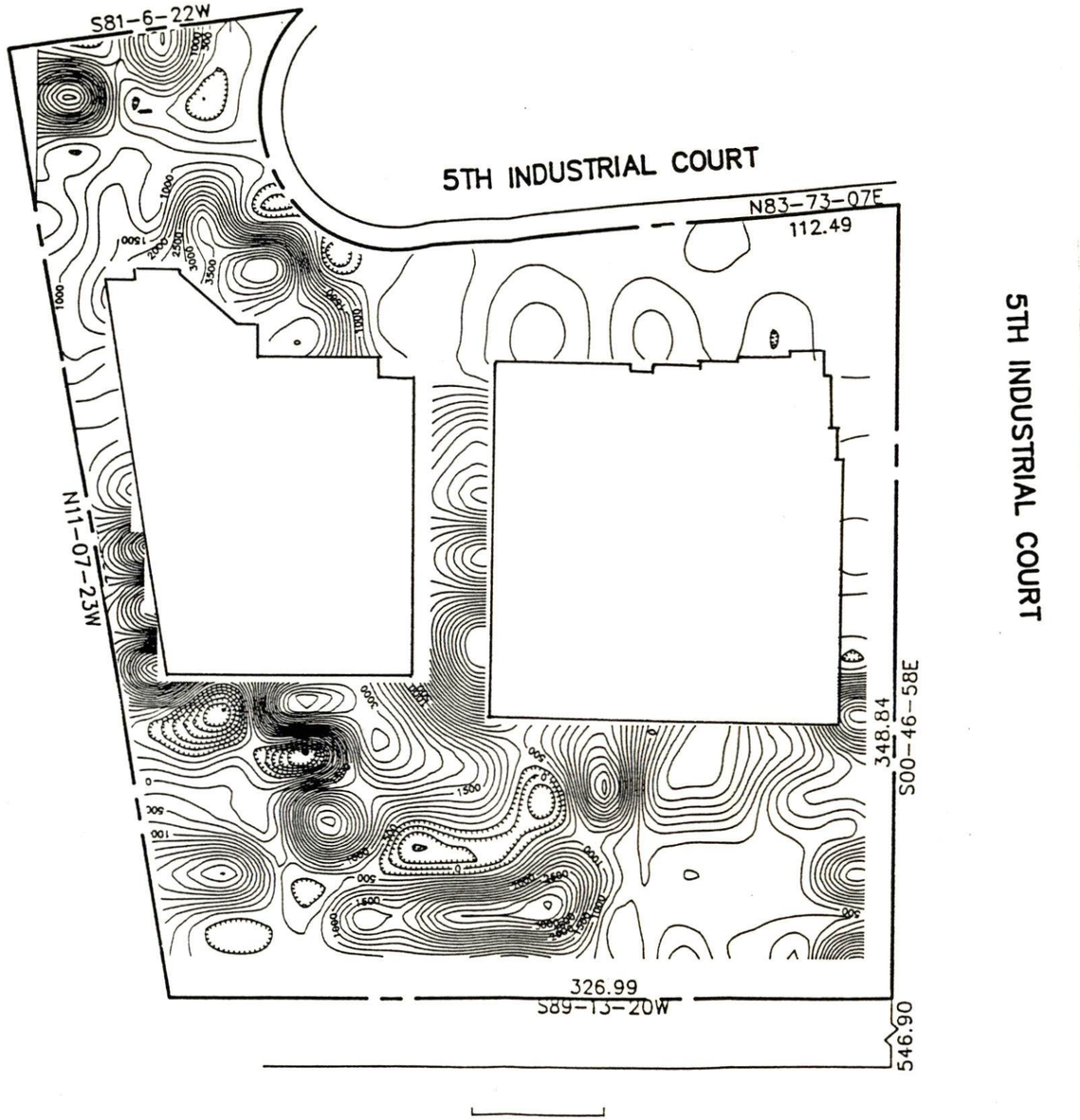
Figure 3 is a contour map of the magnetic data. The contour interval of 250 gammas was selected because of the large range in the magnetic data across the site. The contoured data are presented as total intensity above and below 54,000 gammas, an arbitrary value near the "normal" or undisturbed total magnetic field for the area.

In interpreting magnetic data, the broader the magnetic signature, the deeper the object. Magnetic disturbances with steep gradients are caused by objects at or near the surface. Note that the magnetic technique is limited to detecting ferrous metal objects. Magnetic data are strongly affected by surface metal features (i.e., power lines, chain link fences, automobiles).

According to Figure 3 there are several prominent magnetic disturbances in the magnetic field at the Rite-Off site. Most of the large anomalies can be correlated with surface metal objects. The anomalies on the south side of the buildings correlate with concrete pads and ramps, fenced tank areas, trailers, etc. Figure 4 is a sketch of the site annotated to show surface features that cause disturbances to the magnetic field.

The large magnetic anomaly at 50N and 150-240W of the southeast corner of the property correlates with storm sewer grates at the surface. There is one magnetic disturbance at the site that is not attributable to surface features or to the

FIGURE 3

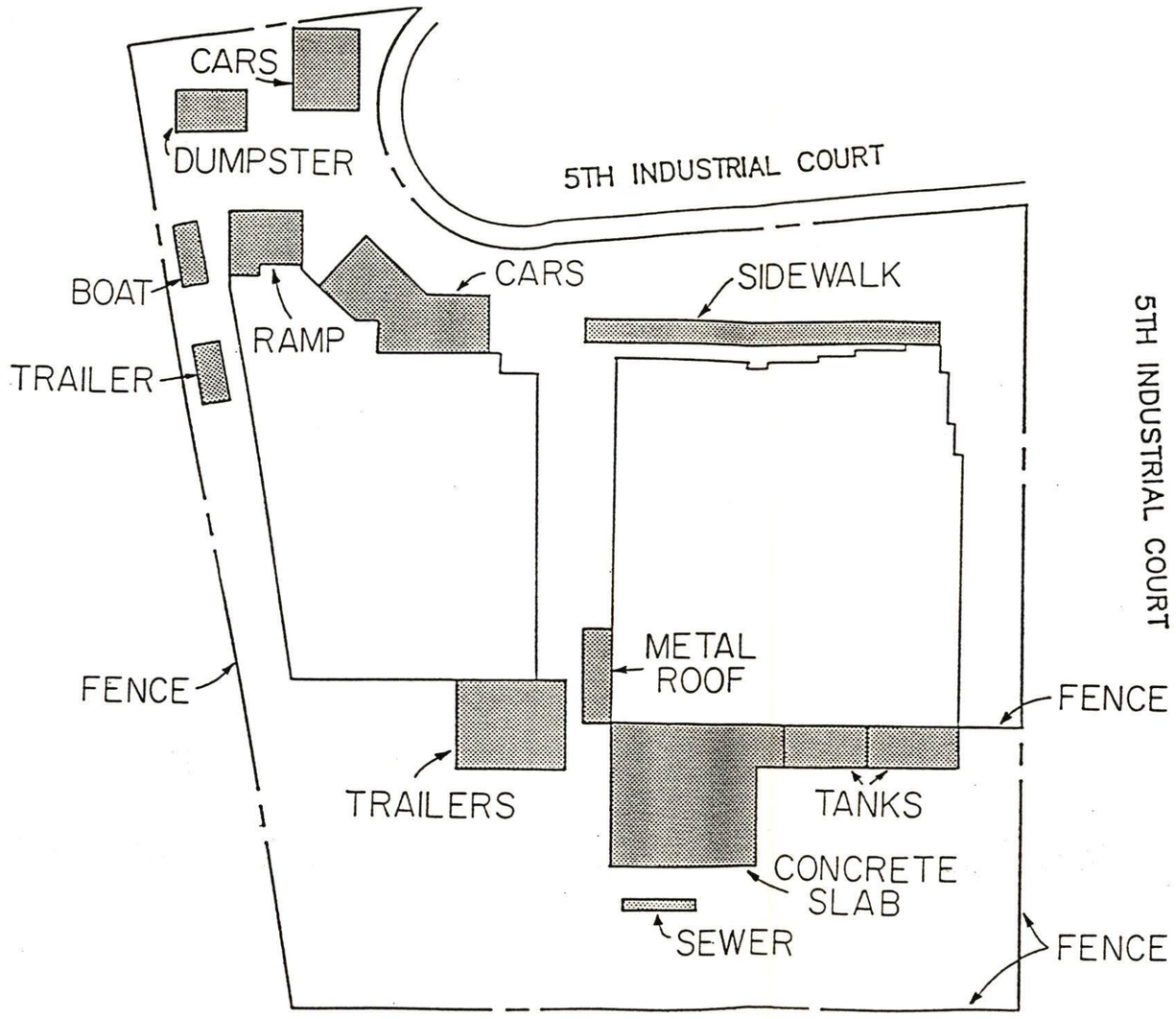


Scale: 1 Inch = 60 Feet

RITE-OFF SITE
BAY SHORE, NEW YORK

MAGNETIC FIELD

FIGURE 4



Scale: 1 Inch = 60 Feet

RITE-OFF SITE
BAY SHORE, NEW YORK

SURFACE METAL OBJECTS

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likely location of utilities. The anomaly is located at 80N and 245W of the southeast corner of the site. Hager-Richter interprets this anomaly to be due to a buried metal object(s). The anomaly exhibits very steep slopes, indicating that the object(s) causing it is likely within a few feet of the surface.

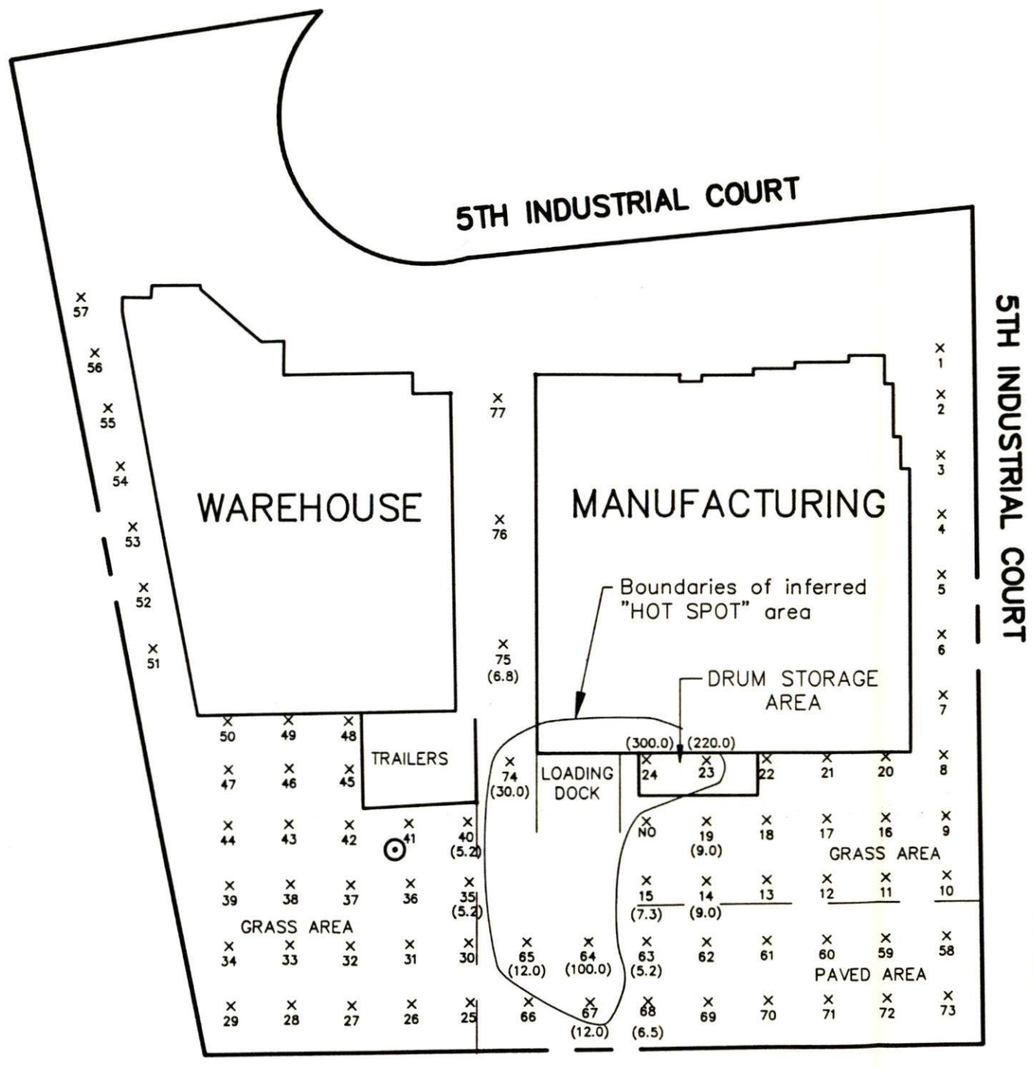
For the purpose of placing the monitoring wells, the safest course is to locate the wells in areas of low magnetic gradient. Doing so eliminates the possibility of drilling into objects that might occur in the vicinity of magnetic anomalies attributable to surface features.

3.2 - SOIL GAS PROBING PROGRAM/SURFACE SOIL SAMPLING

A soil gas probing survey, conducted on January 20, 1989 concentrated on the southern portion of the site. A 25 feet by 25 feet grid interval spacing was used throughout the southern portion of the site, with the exception of the loading dock area (constructed of reinforced cement). See Figure 5 for grid lay-out. Probing points 1-57 are in soil covered areas, while probing points 58-77 are in cement/concrete/asphalt areas. A 10.2 UV lamp HNu photoionization unit was used to perform the survey. A total of 77 locations screened the first 2 to 3 feet of soil for total volatile organic contaminants. Table 1 summarizes the soil gas survey results.

A small percent (16%) of the HNu responses is at least 5 ppm above ambient background concentrations, while only 6 percent of the responses exceeded 10 ppm above ambient background

FIGURE 5



N

RITE-OFF SITE
BAYSHORE, NEW YORK
January 1989

SOIL GAS PROBING LOCATION GRID

Emphasing HNu Concentrations 10 PPM Above Background

SCALE: 1" = 60'

NOTES:

Locations Recording 5.0 ppm above background:	Locations Recording 10.0 ppm above background:
14	64	23
15	65	24
23	67	64
24	68	67
35	74	74
63	75	

LEGEND

- × 10 — LOCATION
- (5.2) — HNu RESPONSE
- ⊙ — MAGNETIC ANOMOLY 25 FOOT GRID SPACING

TABLE 1

SOIL GAS PROBING RESULTS

(10.2 HNu Calibrated & Cleaned by KJC 1/19/89)

LOCATION	BACKGROUND	RESPONSE	ADJUSTED READING
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.2	0.2
4	0.0	1.2	1.2
5	0.8	1.1	0.3
6	0.0	0.0	0.0
7	0.0	0.5	0.5
8	0.0	0.0	0.0
9	0.0	0.3	0.3
10	0.0	0.0	0.0
11	0.0	0.2	0.2
12	0.0	0.1	0.1
13	0.1	0.2	0.1
14	0.0	9.0	9.0
15	0.0	7.3	7.3
16	0.0	0.2	0.2
17	0.0	0.3	0.3
18	0.0	1.0	1.0
19	0.2	1.7	1.5
20	0.3	0.0	-0.3
21	0.2	0.2	0.0
22	0.6	0.8	0.2
23	0.0	220.0	220.0
24	1.4	300.0	300.0
25	1.0	1.4	0.4
26	0.6	0.8	0.2
27	0.3	0.4	0.1
28	0.3	0.5	0.2
29	0.3	0.8	0.5
30	0.2	0.3	0.1
31	0.2	0.4	0.2
32	0.2	0.2	0.0
33	0.2	0.2	0.0
34	0.1	0.2	0.1
35	0.1	5.3	5.2
36	0.0	0.2	0.2
37	0.0	0.1	0.1
38	0.0	0.0	0.0

TABLE 1 (CONT'D.)

LOCATION	BACKGROUND	RESPONSE	ADJUSTED READING
39	0.0	0.4	0.4
40	0.1	0.2	0.1
41	0.0	0.0	0.0
42	0.0	0.1	0.1
43	0.0	0.0	0.0
44	0.1	0.6	0.5
45	0.2	0.3	0.1
46	0.1	0.3	0.2
47	0.2	0.2	0.0
48	0.2	0.2	0.0
49	0.1	0.2	0.1
50	0.0	0.7	0.7
51	0.0	0.1	0.1
52	0.0	0.0	0.0
53	0.0	0.0	0.0
54	0.0	0.1	0.1
55	0.0	0.0	0.0
56	0.0	0.4	0.4
57	0.0	0.2	0.0
58	0.0	0.8	0.8
59	0.2	0.4	0.2
60	0.0	0.7	0.7
61	0.0	0.4	0.4
62	0.0	1.2	1.2
63	0.2	5.4	5.2
64	0.2	100.0	99.8
65	0.0	12.0	12.0
66	0.0	1.8	1.8
67	0.0	12.0	12.0
68	0.0	6.5	6.5
69	0.4	4.9	4.5
70	0.0	1.4	1.4
71	0.2	1.2	1.0
72	0.2	1.4	1.2
73	0.0	0.5	0.5
74	0.2	30.0	29.8
75	0.2	7.0	6.8
76	0.2	0.2	0.0
77	0.2	0.8	0.6

concentrations. All these elevated responses surround the loading dock and drum storage areas. Of the responses, 10 ppm above background concentrations (including B-23, B-24, B-64, B-67 and B-74), B-23 and B-24 are considered to be areas of elevated soil contamination. See Figure 5, Soil Gas Probing Location Grid, with inferred boundaries of the hot spot area.

Five surface soil samples were collected (from a depth of 18-inches) to quantify the soil gas probing responses that were at least, 10 ppm above background concentrations. Specifically, one sample was collected outside the higher response area to characterize background conditions, and four locations were selected in identified "hot spots" which predominantly surround the loading dock and chemical storage areas. The locations selected for laboratory testing and the justification for sampling are given in Table 2.

Dedicated stainless steel trowels used to collect samples. They were laboratory cleaned using procedures described in the work plan, and as outlined below:

- Non-phosphate detergent and tap water wash
- Tap water rinse
- Distilled/deionized water rinse
- Nitric acid (10%) rinse
- Distilled/deionized water rinse
- Total air dry
- Distilled/deionized water rinse
- Foil wrapped

TABLE 2

SURFACE SOIL SAMPLING LOCATIONS

LOCATION	JUSTIFICATION
B-1	Identify background conditions.
B-22½	Soil area adjacent to cement pad where drums had previously been stored on pallets; vicinity of high HNu response.
B-24	Highest HNu response obtained during survey.
B-64	High HNu response, south of loading dock in the direction of groundwater flow.
B-74	High HNu response, adjacent to loading dock and trailers where defective spray cans are stored.
B-75	Adjacent to the "inactive" loading dock area and in an area reported by NYSDEC to have had drums stored.

Each soil sample was collected from a depth of 18-inches below the surface. Locations 1 and 22½ were obtained by digging to a depth of 18-inches with a post hole digger, then cleaning out the hole and obtaining a soil sample with a dedicated stainless steel trowel. The remaining locations were covered by asphalt and/or cement. At these locations a drill bit was used to penetrate the surface covering and boring down approximately 18-inches. A dedicated stainless steel trowel was then used to clean out the hole and obtain a sample.

Each sample collected was analyzed using Contract Laboratory Program (CLP) protocols for:

- Target Compound List (TCL) Volatiles
- TCL Pesticides/PCBs
- Malathion and Diazinon (non-CLP)
- Total Organic Halides
- Total Cyanide
- Total Phenols

3.3 - BORINGS AND SUBSURFACE SOIL SAMPLING

Five boreholes were constructed utilizing a hollow stem auger drilling rig. A split barrel core sampler retrieved soil samples at 5 foot intervals as the augers advanced to the depth of approximately 35 feet. Each 5 foot interval soil sample was field screened for volatile organic constituents (see Table 3). Samples were selected for laboratory analyses based upon a criteria of registering a highest HNu response or being from a

TABLE 3

BOREHOLE HNu RESPONSES

(10.2 Photoionization Lamp)

DEPTH (FEET)	B-1	B-2	B-3	B-4	B-5**
0 to 2	(0.0)0.0	(0.0)0.0	Asphalt	Asphalt	NR
5 to 7	(0.0)0.0	(0.0)0.0	Fill	(0.1)0.5	Fill
10 to 12	(0.0)0.0	(0.0)0.0	(0.1)0.2	(0.1)0.5	(0.1)0.2
15 to 17	NR	(0.0)0.1	(0.1)0.2	*(0.2)230	(0.3)0.3
20 to 22	*(0.0)0.0	*(0.0)0.2	*(0.0)0.2	(0.0)9.0	(0.2)0.2
25 to 27	NR	NR	NR	NR	*(0.1)0.2

NOTES:

(0.0) - Background
0.0 - Heated Response
* - Sample submitted for laboratory analysis
** - Boring B-5 was recorded in field notes as B-6
NR - Sample not taken because of no recovery or other reason

depth equivalent to the water table interface. The soils which emanated from the boreholes (as return) which revealed elevated HNu responses were placed in secure 55-gallon drums. Each drum was labeled indicating boring number and depth interval. Currently, these barrels are stored near the southern fence at the facility. Subsequent testing confirmed these soils are not characteristically hazardous, as defined by USEPA (40 CFR 261.2) and NYSDEC (6 NYCRR 371.3).

All drilling tools, augers and split spoons were steam cleaned prior to use. Each split spoon was steam cleaned prior to the collection of each soil sample in each boring.

Soil sampling and on-site quality testing was conducted as follows:

1. Assemble the soil sampler by aligning both sides of barrel and then screwing the bit on the bottom and the heavier headpiece on top.
2. Place the sampler in a perpendicular position on the material to be sampled.
3. Drive the tube utilizing a drilling rig.
4. Record the length of the tube that penetrated the material being sampled at the number of blows required to obtain this depth.
5. Withdraw the sampler and open by unscrewing bit and head and splitting barrel.
6. Place the soil in the two (2) prescribed sample containers and label the containers.

7. The first sample was prepared for delivery to the laboratory.
8. The second sample was capped with aluminum foil and heated for approximately two minutes with a portable Sterno stove.
9. The second sample was then field tested with an HNu photoionization meter by inserting the probe through the foil cap. The HNu reading was recorded.

The collected split barrel samples were classified by the on-site geologist and logged on a test boring log. A copy of the geologist log are provided in Appendix A.

The surficial soils found in the general vicinity of the site are composed of Haven loam which have a 0 to 2 percent slope. Beneath the surficial soils, the site is underlain by predominantly medium and fine sands with much smaller quantities of fine gravel and course sands with a touch of silt/clay. The site-specific geology throughout the borings is consistent.

Selected split spoon samples, which were representative of the subsurface conditions in each borehole, were utilized to determine site-specific grain size distribution and moisture content. This data is provided in Appendix A. The unconsolidated deposits encountered consist predominantly of glacial outwash. Based upon the grain size distribution results, the gravel content ranges from 0 to 8 percent by dry weight, and a sand content from 38 to 44 percent. The percentage of silts and clay is less than 3 percent. Based upon the site-specific geologic

profile, a relationship between grain size distribution and estimated hydraulic conductivity can be made. These hydraulic parameters will be discussed in the groundwater section.

Soil Quality

Soil samples submitted for laboratory analysis included:

B-1 (20-22') water table interface

B-2 (20-22') water table interface/elevated HNu response

B-3 (20-22') water table interface

B-4 (15-17') elevated HNu response

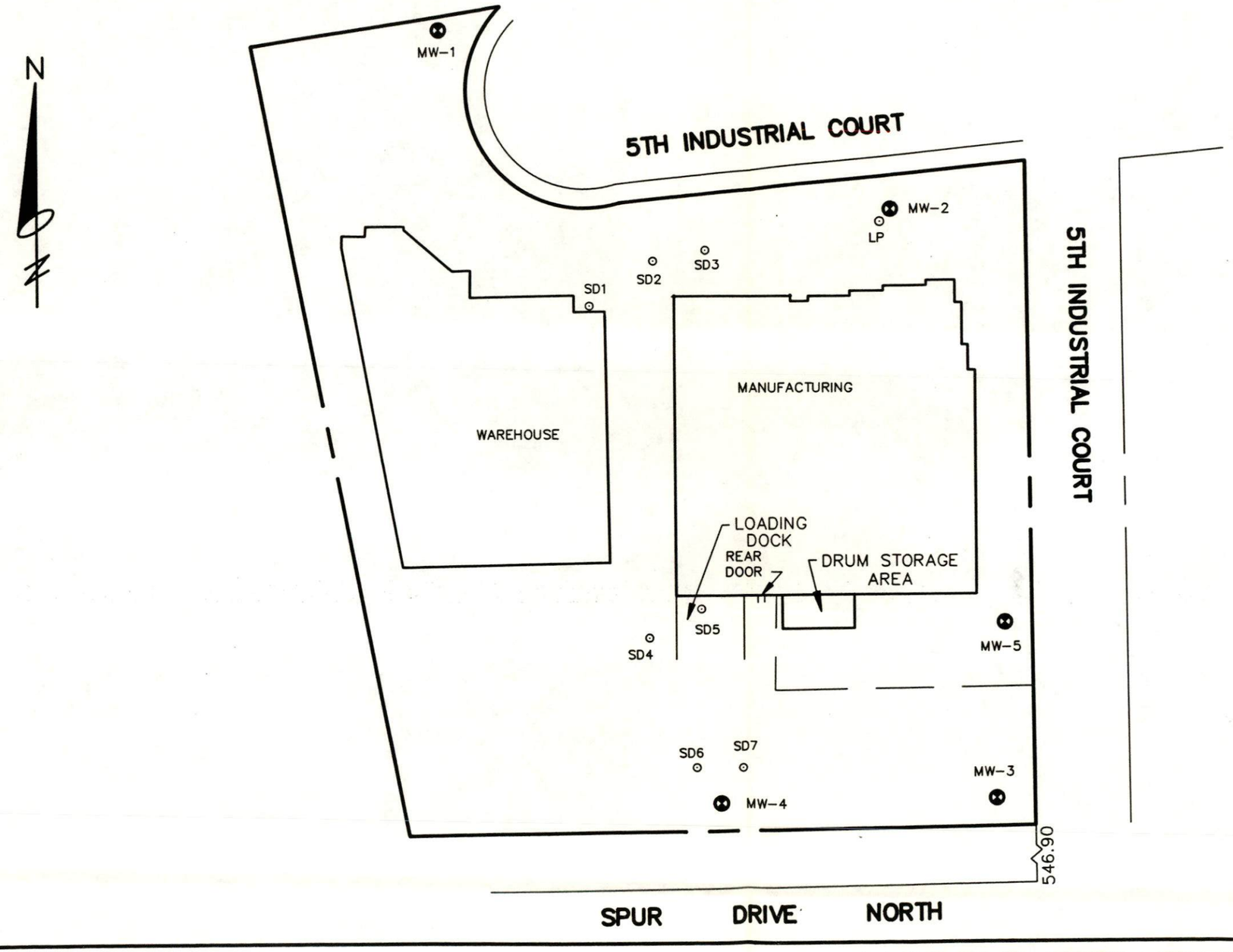
B-5 (25-27') water table interface/elevated HNu response

In the analytical data packages, the soil samples from the boreholes are labeled MW-1, MW-2, MW-3, MW-4, MW-6 (actually MW-5). Soil samples selected for analyses were from the borings where monitoring wells were to be installed. See Figure 6, Monitoring Well Location Plan.

Each sample submitted to the laboratory was analyzed using CLP protocols for:

- Target Compound List (TCL) Volatiles
- TCL Pesticides/PCBs
- Malathion and Diazinon (non-CLP)
- Total Organic Halides
- Total Cyanide
- Total Phenols

FIGURE 6



MONITORING WELL LOCATION MAP

SCALE 1" = 60'

SD = STORM DRAIN
LP = LEACHING POOL

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3.4 - GROUNDWATER MONITORING WELL INSTALLATION

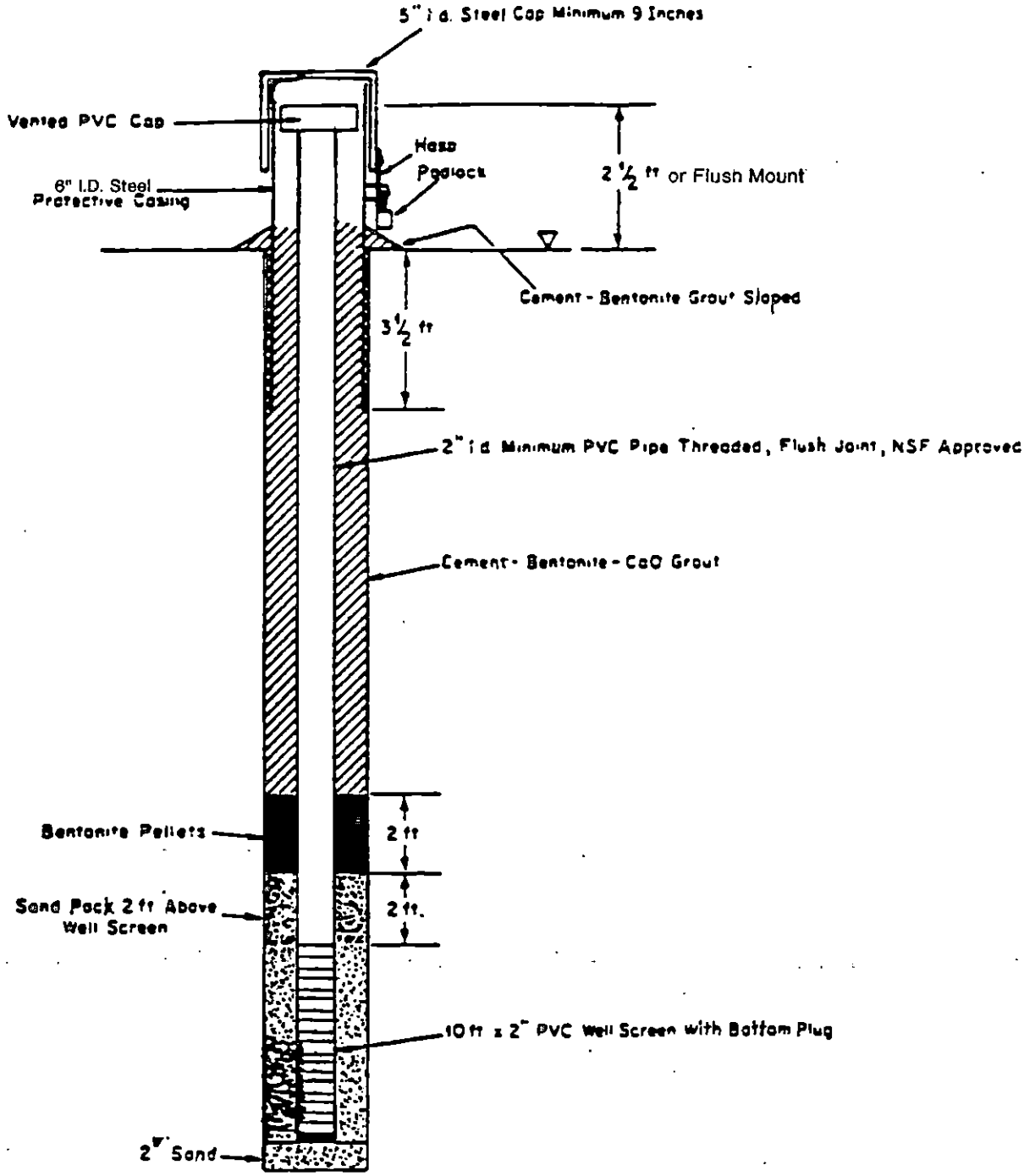
Five groundwater monitoring wells were installed on-site at Rite-Off between January 25th and January 26th, 1989. The purpose of installing the monitoring wells was:

1. To provide groundwater and soil quality profiles with the HNu photoionization meter during drilling.
2. To evaluate subsurface conditions.
3. To determine groundwater flow direction and rate of flow.
4. To evaluate groundwater quality.

The locations of these wells MW-1 through MW-5 are shown in Figure 6. A schematic cross-section of the monitoring wells is shown in Figure 7.

MW-1 was installed in the northwest corner of Rite-Off's property. This well was installed in a low magnetic gradient to a depth of 32 feet from grade and installed flush with the grassed surface. The purpose of this well is to identify the incoming or upgradient groundwater quality.

MW-2 was installed in the northeast corner of Rite-Off's property. This well was installed in a utility cleared area to a depth of 31 feet from grade and installed flush with the grassed surface. The sanitary system leaching pool (immediately adjacent to MW-2) was located after installing this well. The purpose of this well was also to identify incoming or upgradient groundwater quality.



MONITORING WELL CONSTRUCTION DETAILS
RITE-OFF

MW-3 was installed in the southeastern property corner. This well was installed in the downgradient direction from the drum storage area, to a depth of 31 feet below-grade, flush with the asphalt surface.

MW-4 was installed in the middle portion of the southern property border. This well was installed in the downgradient direction from the loading dock storm drain, to a depth of 31 feet below-grade flush with the asphalt surface.

MW-5 was installed slightly southeast of the manufacturing building corner. This well was installed in the downgradient direction from the manufacturing building, to a depth of 31 feet below-grade raised 2 feet above the surface.

The final placement of all the monitoring wells was dependent on the geophysical survey findings utility clearances and physical obstructions.

Materials of Construction

The construction method used to install the monitoring wells consisted of drilling an 8-inch hole to the desired depth with a hollow stem auger and placing the well casing and screen through the hollow stem. Soils emanating from the hole which exhibited elevated HNu responses were placed in secure 55-gallon drums and are currently stored on-site. The casing and screen consist of Schedule 40, 2-inch diameter PVC, screw joint, threaded casing and 10 feet of 2-inch diameter 10 slot screen. Joint compound was not used. A bentonite seal approximately 2 feet thick was placed above the screened zone. The open space around the

bentonite seal was filled with a sand pack, and the remainder of the open space above the screened zone was backfilled with a bentonite/cement slurry. Following installation, each well was adequately developed by bailing. The wells were developed until samples displayed a turbidity of 50 HNu or less as measured with a turbidity meter. A 6-inch protective steel casing with locking cover was installed around the PVC casing and cemented into place. The procedures used in well installation followed NYSDEC monitoring well installation protocols.

All drilling tools, augers and other drilling equipment were steam cleaned prior to use. Between holes, all foreign matter was removed prior to steam cleaning. Steam cleaning was conducted in one designated location.

Well construction details including survey elevations for each well are provided in Table 4.

3.5 - GROUNDWATER MONITORING PROGRAM

A geodetic survey establishing top of casing elevations (to the nearest 0.01 foot) at all five on-site monitoring wells, as well as relative locations of all points, was conducted on March 16, 1989. The survey crew tied the site wells into a United States Geologic Survey (USGS) bench mark located approximately one mile north of the site, and established an on-site monument. Each monitoring well have a reference mark located either on the PVC collar (MW-4 and MW-5) or on the metal rim (MW-1, MW-2 and MW-3).

TABLE 4

MONITORING WELL CONSTRUCTION DETAILS AND WATER ELEVATIONS

WELL NO.	TOTAL DEPTH (FT)	SCREENED DEPTH (FT)	ELEVATION OF TOP OF PVC CASING (FT-NGVD)	WATER ELEVATION (2/16/89)	WATER ELEVATION (3/28/89)
MW-1	32	22 - 32	60.49	37.00	37.81
MW-2	31	21 - 31	58.41	36.75	37.47
MW-3	31	21 - 31	58.75	36.23	37.01
MW-4	31	21 - 31	57.09	36.35	37.09
MW-5	31	21 - 31	62.34	36.37	37.11

NOTE: Wells are constructed of 2-inch PVC with 10 feet of No. 10 slot screen

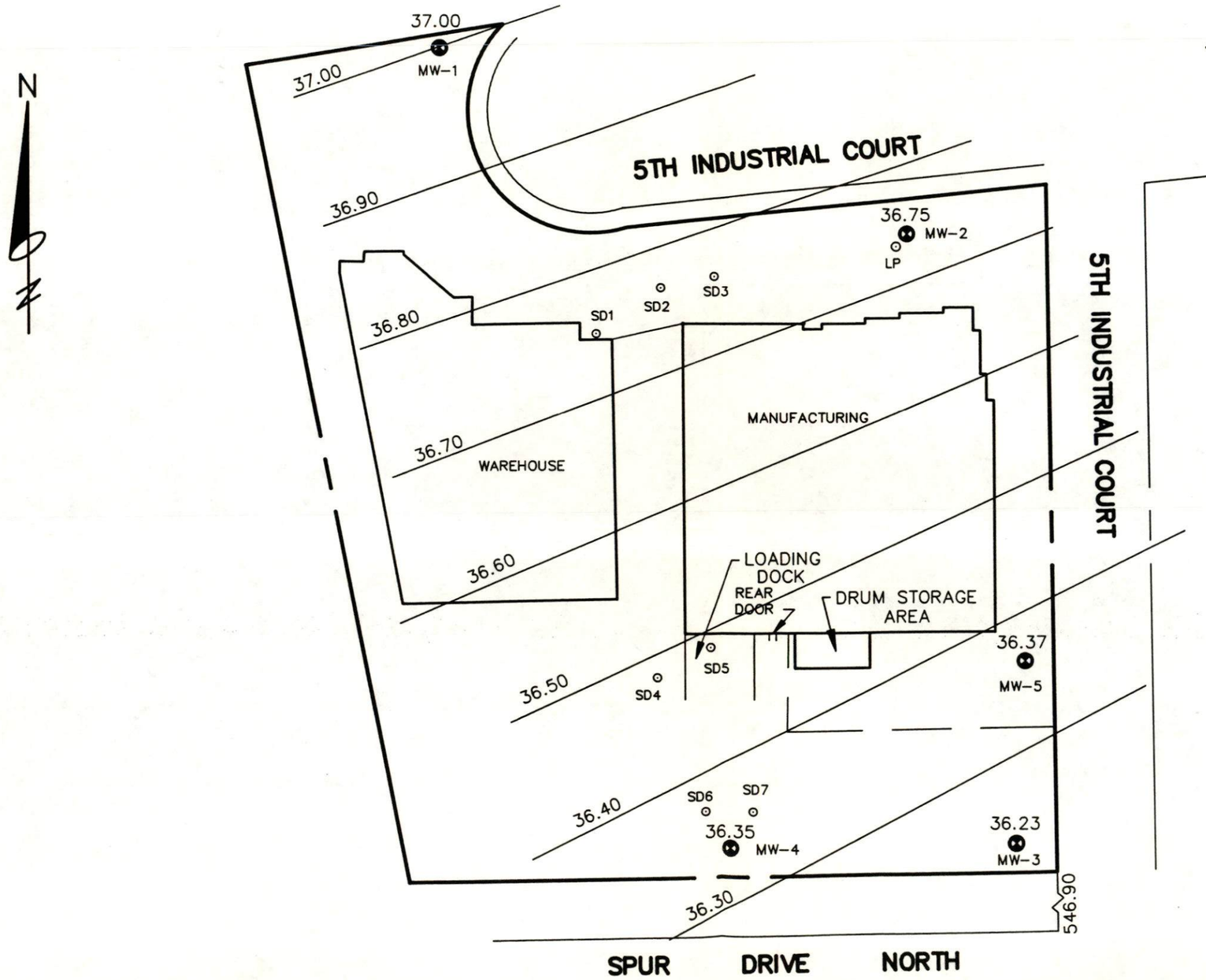
The groundwater monitoring program involved two (2) site visits on February 16, 1989 and March 23, 1989 (see Table 4). During each visit the water levels in the wells were measured using a water sensitive probe. The depth to water in each well is subtracted from the reference mark elevation to establish the elevation of the water surface in each well. The water surface elevations are used to develop water table maps in order to evaluate the groundwater flow direction, hydraulic gradient and velocity of flow. According to the two (2) water table maps, groundwater is flowing in a south-southeasterly direction. Utilizing a published hydraulic conductivity value of 2,000 gpd/ft^2 (Jensen & Soren, Hydrogeologic Investigations Atlas, 1974), a porosity of 30 percent and a calculated gradient ranging between .0015 and .0016 ft/ft, the groundwater on-site is flowing at a rate between 1.4 and 1.5 feet per day. Figures 8 and 9 depict water table contours and flow direction for February 16 and March 28, 1989 field measurements.

3.6 - GROUNDWATER SAMPLING

Water quality samples were collected from the on-site monitoring wells on February 16, 1989. A NYSDEC representative (Christopher Anderson) observed the sampling procedures and retained split samples from monitoring wells MW-3 and MW-4.

Dedicated stainless steel bailers were used for sampling. Bailers were laboratory cleaned according to the procedures outlined in Section 3.2.

FIGURE 8



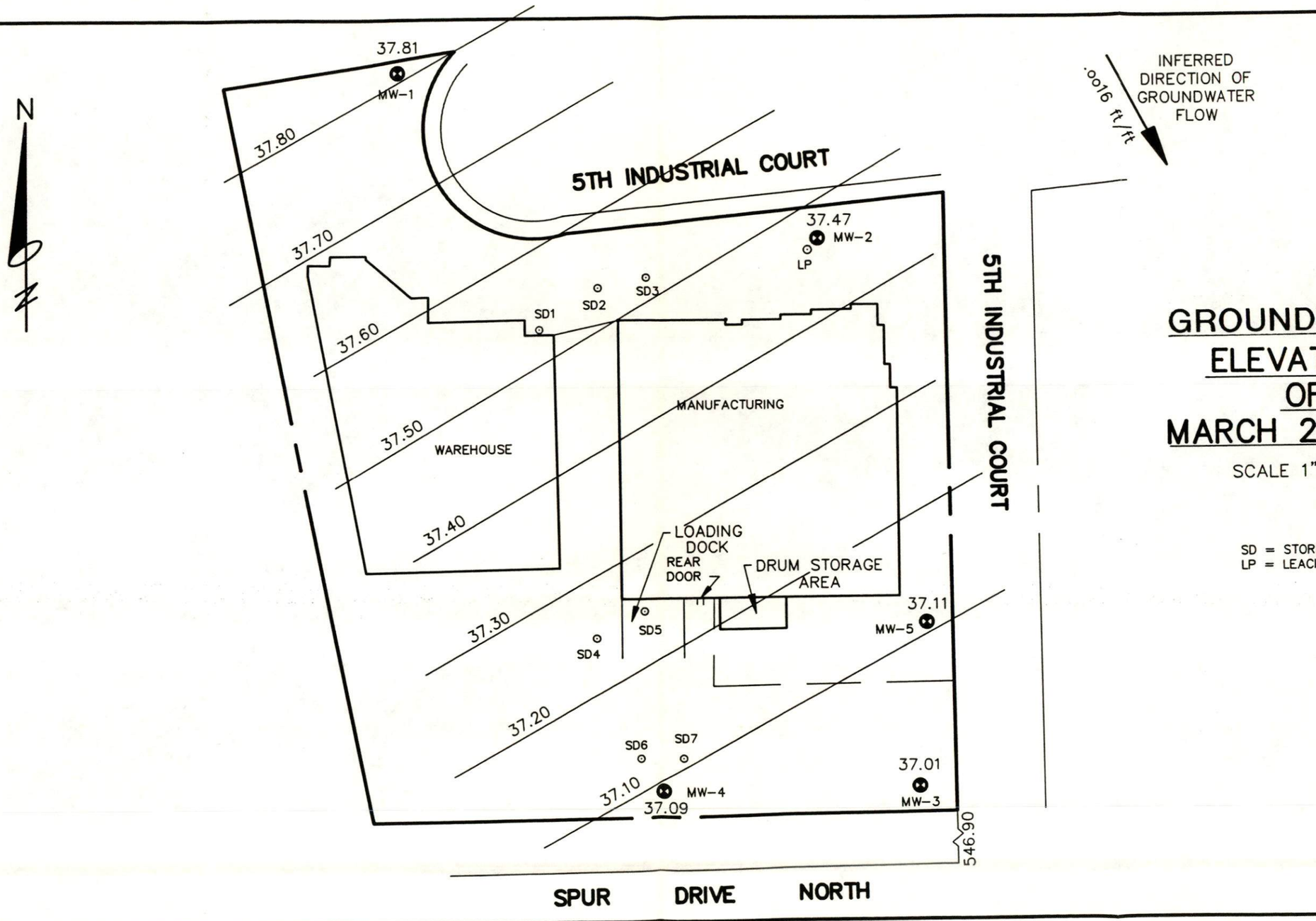
GROUNDWATER ELEVATIONS OF FEBRUARY 16, 1989

SCALE 1" = 60'

SD = STORM DRAIN
LP = LEACHING POOL

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FIGURE 9



GROUNDWATER ELEVATIONS OF MARCH 28, 1989

SCALE 1" = 60'

SD = STORM DRAIN
LP = LEACHING POOL

The depth to water was measured in each well, and used to calculate the volume of water to be removed prior to sampling. All measurements, calculations and observations regarding the sampling event are contained on the sampling records (see Appendix B). Each well was purged three to six well volumes prior to sampling. Purging was accomplished by bailing each well until the pH stabilized and a minimum of three well volumes were removed.

Sample bottles were labeled prior to filling each bottle, then secured in the cooler and covered with ice. The chain-of-custody form was filled in and placed in the cooler with the sample.

Each sample submitted to the laboratory was analyzed using CLP protocols for:

- Target Compound List (TCL) Volatiles
- TCL Pesticides/PCBs
- Malathion and Diazinon (non-CLP)
- Total Organic Halides
- Total Cyanide
- Total Phenols

3.7 - STORM DRAIN AND LEACHING POOL SAMPLING

Seven on-site stormwater runoff drains and one sanitary leaching pool were sampled at Rite-Off on February 27, 1989. On two previous occasions (December 1986 and March 1987), NYSDEC collected water and sediment samples at Rite-Off's storm drains.

Those results indicated soil contamination existed at some of these locations. However, the laboratory reports do not clearly identify each storm drain location. Therefore, they could not be compared directly to the results of this investigation.

The sanitary system leaching pool's access manhole was brought up to grade to provide access for sampling. Sanitary discharge lines were followed out from the building to locate the septic tank. From this point, a leaching pool was located, in a northeasterly direction 16 feet from the tank. Monitoring well MW-2 is located close to the outer edge of the pool's ring.

The leaching pool was covered with a cement top which was buried 6-inches below-grade. The pool has four rings and a 2 foot dome which together measures a depth of approximately 18½ below-grade.

Each of the stormwater dry wells varied in depth. However, according to site plans they are constructed similarly. The variable depth in each drain is attributed to accumulation of sediment from runoff.

A stainless steel Eckman dredge was used to collect all the soil/sludge samples. The dredge was decontaminated in the field between sampling locations.

The storm drains were sampled in the following order: SD#7, SD#6, SD#4, SD#5, SD#2, SD#3, SD#1 and the sanitary leaching pool. Locations are shown in previous figures.

Each sample submitted to the laboratory was analyzed using CLP protocols for:

- Target Compound List (TCL) Volatiles
- TCL Pesticides/PCBs
- Malathion and Diazinon (non-CLP)
- Total Organic Halides
- Total Cyanide
- Total Phenols

4.0 - SITE ASSESSMENT

4.1 - SITE HISTORY

Rite-Off is located at 1545 and 1555 Fifth Industrial Court, Bay Shore, New York. Manufacturing activities occur at the 1545 location (Section 244, Block 2, Lot 61) and the warehouse is located at the 1555 location (Section 244, Block 2, Lot 60.2).

The ownership transactions at the two parcels are outlined below:

Manufacturing (Lot 61)

June 1, 1970
Jerry Krinsky Associates Inc.
sell to:
Fifth Industrial Associates

January 25, 1984
Fifth Industrial Associates
sell to:
Rite-Off Inc.

January 1, 1985
Rite-Off Inc.
sell to:
Howard Rapps

Warehouse (Lot 60.2)

June 12, 1973
Jerry Krinsky Associates Inc.
sell to:
Samuel Cherno

May 9, 1979
Samuel Cherno
sell to:
Samuel Cherno & Sylvia Cherno

August 28, 1985
Samuel Cherno & Sylvia Cherno
sell to:
K & C Developers Inc.

(continued)

August 1, 1986
K & C Developers Inc.
sell to:
Howard Rapps

According to the current property owner, the manufacturing building was occupied by an electronic company and then a lamp company prior to occupancy by Rite-Off in 1974. Rite-Off rented the building for ten years prior to purchasing it in 1984. As Rite-Off expanded they purchased the adjacent parcel and built the warehouse in 1986.

Two types of wastewater are generated at this facility. They are sanitary wastewaters generated by the 35 employees of Rite-Off and non-contact cooling water used by a small distillation unit used to reclaim solvents. Since no additives are used in this cooling water stream, the water being discharged should contain no other contaminants than those found within the tap water.

According to representatives of Rite-Off, in September of 1983, the manufacturing building was vandalized and the trespassers opened tanks containing tetrachloroethene and mineral spirits. Rite-Off reported the incident to the Suffolk County Police Department, SCDHS and the USEPA. With regulatory agency oversight, a contractor was hired to cleanup the spill, which included pumping out the storm drain where the tetrachloroethene was diverted.

In December 1986, the NYSDEC performed sampling at Rite-Off and found elevated concentrations of solvents, including tetrachloroethene, in a sample collected at the loading dock storm drain. A subsequent sampling event in June 1987 did not reveal

as high a contaminant level, but did confirm the presence of contaminants in on-site soils and waters.

As a result of these findings, the NYSDEC issued an Order on Consent to Rite-Off and assigned a Class 2A designation to the site.

On March 30, 1988, the NYSDEC and Rite-Off, Inc. entered into an Order on Consent. The goals of the order are to implement a field investigation to determine the nature of contamination, if any, present in the soil and groundwater, the areal extent and distribution of these contaminants.

4.2 - OTHER GROUNDWATER INVESTIGATIONS

Rite-Off is located in a highly industrialized area. Within a one-half mile radius north and hydraulically upgradient of Rite-Off are two (2) NYSDEC listed inactive hazardous waste sites; the Hubbard-Wilson Landfill (NYSDEC Site No. 1-52-008) and Serv-All Laundry (NYSDEC Site No. 1-52-077). The Hubbard-Wilson Landfill has been classified as a Class 2A site, and has been under investigation by the NYSDEC and SCDHS since about 1980. A leachate plume emanating from the landfill has been documented, but its full extent not yet identified. The Serv-All Laundry is listed as a Class 2 site and is under investigation as a reported source for a plume containing vinyl chloride which was estimated to extend over one mile in length.

Existing SCWA well fields are located approximately one-third of a mile to the northwest (upgradient) and approximately one mile to the southeast (downgradient). The upgradient

wells, the Locust Drive well field, consists of three wells (S-15898, S-16175 and S-3646) with depths of 128 feet, 130 feet and 610 feet, respectively. The downgradient wells, the Thomas Avenue well field, consists of two wells (S-46235 and S-50546) which are 712 feet and 666 feet deep, respectively.

The Hubbard-Wilson Landfill (Hubbard Sand & Gravel) consists of 19 acres which are bounded by Fifth Avenue to the east, a residential area to the west, light industry to the south, and an auto wrecking yard to the north. The wrecking yard is reportedly over an inactive Town of Islip landfill.

Sand and gravel was reportedly mined at Hubbard's over a 30 year period. However, there is currently no sand mining at the site. It is used as a transfer station for brush and demolition debris.

Two water quality studies have been conducted by SCDHS near the landfill. The first was performed in March of 1983 and the second in November of 1983. The first study identified a plume from the landfill based on temperature and conductivity measurements at seven monitoring wells (one upgradient and six downgradient). The second study identified a narrow plume of volatile organic contamination attributed to the Serv-All cleaning facility.

Sampling by the SCDHS as of January 1988 indicates that the volatile organic plume had moved about one-third of a mile during the four year period between November 1983 and January 1988. This is equivalent to a rate of just over one foot per day.

Significant concentration of contamination (over 8,500 ppb total VOCs) was at that time documented within approximately one block of the Thomas Avenue well field.

Additional monitoring work is being conducted by the SCDHS to further define the downgradient limits of the plume within the Upper Glacial aquifer, which is approximately 80 feet thick and underlain by Gardiners clay in the region. Monitoring below the clay awaits the completion of a joint SCDHS/USGS/SCWA program to determine the extent to which this unit protects the Magothy aquifer.

5.0 - INVESTIGATIVE FINDINGS

5.1 - SITE TOPOGRAPHY AND ECOLOGY

The Rite-Off site is situated on a level outwash plain. The topography of the site is nearly flat.

The ecology of the Rite-Off site is limited due to the past usage of the property. However, small mammals common to Long Island are expected to occur here (i.e., mice, rabbits). There are no unique ecosystems, critical habitats or food sources. No rare or endangered species of flora or fauna were noted, nor would they be expected to occur here.

5.2 - GEOLOGIC CHARACTERISTICS

The geology of the Islip area can be described as consisting of unconsolidated Late Cretaceous and Pleistocene deposits which overlie crystalline bedrock. The bedrock is composed of rocks of Precambrian age which slopes slightly to the southeast. The bedrock surface is about 1,450 feet below-grade.

Directly on top of the bedrock lies the Lloyd aquifer, which consists of beds of fine to coarse quartzose sand and gravel, generally in a clayey matrix, with interbedded lenses of sandy clay and clay. The Lloyd aquifer is an artesian aquifer, being confined by the overlying Raritan clay. The surface of the Lloyd aquifer is about 1,050 feet below the surface.

The Raritan clay is located approximately 850 feet from the surface and consists mostly of clay, sandy clay and silt. This

formation has a very low permeability and acts an effective confining layer on the Lloyd aquifer.

On top of the Raritan clay lies the Magothy aquifer, which consists of sand, gravel, silt and clay. The saturated thickness of the Magothy aquifer in the vicinity of the study site is approximately 700 feet (the surface of the Magothy is about 100 feet below-grade).

In the study area, on top of the Magothy aquifer lies the Gardiners clay. This clay is approximately 20 feet thick, has a very low permeability and acts as an effective confining layer to the Magothy aquifer.

The uppermost deposits are the Upper Pleistocene deposits which are approximately 80 feet thick in the study area. This formation is the result of the latest glaciation, and consists of stratified sand and gravel on glacial outwash.

5.3 - BORINGS: SUBSURFACE SOIL QUALITY

On January 25, 1989, borings were drilled to the depth of the water table on-site for the purpose of screening the vertical soil column for total volatile contaminants and identifying the subsurface geology across the site. Upon completion of the soil borings, groundwater monitoring wells were installed in the boreholes.

One soil sample from each borehole (where a monitoring well was proposed) was submitted for laboratory analyses based upon its having the highest levels of organic vapor concentrations as

determined in the field with an HNu. When organic vapor concentrations were negligible in all soil samples, the sample from the water table interface was chosen for analysis. The borehole soil samples are identified according to the monitoring well number assigned to the borehole and depth of the sample (i.e., MW-1; 20-22').

These samples along with quality assurance/quality control (QA/QC) blanks were analyzed using full Contract Laboratory Program (CLP) protocols.

QA/QC blanks provided a control to help identify if contaminants were introduced by the laboratory or carried over on sampling devices. There are three types of blanks which were run with the samples. These include the trip, field and method blanks. Trip blanks are filled in the laboratory and accompany the samples throughout the sampling episode. The purpose of the blank is to provide a mechanism of control on sample bottle preparation, blank water quality, as well as sample handling. Field blanks serve the same purpose as a trip blank and are also used to indicate potential contamination from ambient air, and from field equipment used to collect and transfer samples from point of collection into sample containers. Method blanks are a demonstration that the laboratory is not a contaminant source. The laboratory runs a "clean" water sample to identify lag contamination from previous samples run on the instrument, and/or laboratory induced contamination.

The depths of each location selected for analysis were:

MW-1 (20-22')
MW-2 (20-22')
MW-3 (20-22')
MW-4 (15-17')
MW-5 (25-27')

Each sample was analyzed for:

TCL Volatiles
TCL Pesticides/PCBs
Total Organic Halides
Total Cyanide
Total Phenol

The laboratory reports for these samples are contained in Appendix C. A summary is provided in Table 5.

5.3.1 - Compounds Quantified in Subsurface Soils

- TCL Volatile Organics

Seven volatile organic compounds are quantified in the subsurface soil samples. Of the seven compounds quantified, three are also found in the quality assurance/quality control blank samples.

Acetone is present in the method, trip and field blanks. However, it is present at higher concentrations in MW-2, 3, 4 & 5. Concentrations at MW-2, 3 and 4 are considered comparable to the concentration found in the field blank. However, the concentration at MW-5 is significantly higher. Given the past sampling data performed by the NYSDEC, acetone is suspected to be present at this location. 2-Butanone was found in the method blank, trip blank and field blank. The concentrations quantified in the blanks are higher than found across the site, therefore, this

TABLE 5

SUMMARY OF COMPOUNDS QUANTIFIED IN SUBSURFACE SOILS

Volatiles	MW-1 (20-22)	MW-2 (20-22)	MW-3 (20-22)	MW-4 (15-17)	MW-5 (25-27)	Field Blank	Trip Blank	Method Blank
Acetone	10JB	25B	31B	26B	51B	20B	6JB	7J
2-Butanone	--	6B	6JB	6JB	21B	57B	8JB	5J
Methylene Chloride	64	40	31	34	24	11	8	5U
Trichloroethene	--	--	--	--	4J	5U	5U	5U
Benzene	--	--	--	--	4J	5U	5U	5U
Tetrachloroethene	--	6	4J	5J	6J	5U	5U	5U
Toluene	3J	2J	7	11	22	5U	5U	5U
Pesticides/PCBs								
Endosulfan I	--	10	--	--	--	NA	NA	5J
4,4'-DDT	11J	19	9J	10J	11J	NA	NA	16U
Aldrin	--	2J	--	--	--	NA	NA	8U
Miscellaneous Analytical Tests								
Total Solids (%)	82.0	90.0	90.0	86.0	81.0	NA	NA	NA
Cyanide (mg/kg)	--	--	--	--	--	<10.0	NA	NA
Phenols	--	--	--	--	--	<1.0	NA	NA
TOX (mg/kg)	<77	<70	<70	<73	<78	NA	NA	NA

LEGEND:

All concentrations reported in ug/kg except as noted.

NA = Not analyzed
B = Found in blank
J = Estimated value - lower than detection limit
U = Not detected - detection limits in blanks
< = Less than
-- = Not detected

contaminant is assumed to not be present at these locations. Methylene chloride is present in the field and trip blanks at concentrations of 11 and 8 ppb, respectively. However, methylene chloride is present at higher concentrations in MW-1 through MW-5 ranging from 24 to 64 ppb.

Trichloroethene and benzene may be present in MW-5, but were reported by the lab at estimated concentrations below the detection limit. Tetrachloroethene was also quantified in the same way, below the detection limit, in MW-3, MW-4 and MW-5. At MW-2, however, tetrachloroethene is quantified above the detection limit at a concentrations of 6 ppb. Toluene was quantified below the detection limit in MW-1 and MW-2. However, in MW-3, MW-4 and MW-5 toluene is quantified above the detection limit at concentrations ranging from 7 to 22 ppb.

- Pesticides/Organophosphates/PCBs

Two pesticides (endosulfan I and 4,4'-DDT) were quantified above instrument detection limits in samples from the on-site subsurface soil sampling locations. Neither of the two organophosphate pesticides (malathion and diazinon) or any PBC contaminants were quantified.

Although endosulfan I was reported in the method blank below the detection limit, a higher concentration (10 ppb), above the detection limit was identified in MW-2. 4,4'-DDT was reported at locations MW-1, 3, 4 and 5 below the detection limit, but at MW-2 it was quantified above the detection limit at a concentration of 19 ppb.

- Miscellaneous Analytical Tests

Four miscellaneous tests were performed on the subsurface soil samples. These include total solids, total cyanide, total phenol and total organic halides (TOX). The total solids percentages ranged from 81 to 90 percent. The cyanide, phenol and TOX results indicated these compounds were not detectable.

5.4 - SURFACE SOIL QUALITY

On January 25, 1989 six surface soil samples were collected in areas identified as possibly contaminated areas from the soil gas probing program. All six samples were collected from a depth of approximately 18-inches below-grade. The surface soil locations are identified as B-1, B-22½, B-24, B-64, B-74 and B-75.

Each sample was analyzed for:

TCL Volatiles
TCL Pesticides/PCBs
Total Organic Halides
Total Cyanide
Total Phenol

The laboratory reports for these samples are contained in Appendix C. Table 6 provides a summary of the results.

5.4.1 - Compounds Quantified in Surface Soils

- TCL Volatile Organics

Ten volatile organic compounds were quantified in the surface soil samples. Of the ten compounds quantified, four of them were also found in the quality assurance/quality control blank samples.

TABLE 6

SUMMARY OF COMPOUNDS QUANTIFIED IN SURFACE SOILS

Compounds Quantified in Soil:										Dilutions	
Volatiles	B-1 (18")	B-22½ (18")	B-24 (18")	B-64 (18")	B-74 (18")	B-75 (18")	Field Blank	Trip Blank	Method Blank	B-24(DL)	Method Blank
Acetone	11B	28B	28B	26B	74B	21B	20B	6JB	7J	1000B	11
2-Butanone	--	7JB	4JB	4JB	13B	10JB	57B	8JB	5J	950JB	5J
Methylene Chloride	26	40	36	19	40	42	11	8	5U	810B	15
2-Hexanone	--	--	--	--	3J	--	10U	2J	10U	--	10U
Trichloroethene	--	--	4J	--	7	4J	5U	5U	5U	650D	5U
Tetrachloroethene	3J	11	1800D	5J	260	240	5U	5U	5U	3800	5U
Toluene	12	16	3J	7	10	5J	5U	5U	5U	650D	5U
1,1,1-Trichloroethane	--	--	--	--	10	--	5U	5U	5U	--	5U
Benzene	--	--	--	--	2J	--	5U	5U	5U	--	5U
Xylenes (Total)	--	--	--	--	2J	--	5U	5U	5U	--	5U
Pesticides/PCBs											
Endosulfan I	--	--	--	2JB	6JB	--	NA	NA	5J		
4-4'-DDT	4J	25	18	4J	10J	--	NA	NA	16U		
Heptachlor	--	--	2J	--	--	--	NA	NA	8U		
4,4'-DDE	--	--	2J	--	--	--	NA	NA	16U		
Aldrin	--	2J	--	--	--	--	NA	NA	8U		
Miscellaneous Inorganics											
Total Solids (%)	98	100	96	99	93	89	NA	NA	NA		
Cyanide (mg/kg)	--	--	--	--	--	--	--	NA	NA		
Phenols	--	250	--	--	269	--	--	NA	NA		
TOX (mg/kg)	--	--	--	--	--	--	NA	NA	NA		

LEGEND:

All concentrations reported in ug/kg except as noted.

< = Less than
B = Found in blank
DL = Diluted sample
J = Estimated value - lower than detection limit
NA = Not analyzed
D = Outside calibration range; diluted and re-analyzed
-- = Not detected
U = Not detected; detection limits in blanks

Acetone is present in the instrument method blank, trip blank and field blank at comparable concentrations to the results of soil samples obtained across the site, with the exception of B-74 where the concentration was 74 ppb. 2-Butanone was also found in the blank samples. The concentrations quantified in the blanks are equivalent or higher than found across the site, therefore, 2-Butanone is not suspected to be present at any of the surface soil sampling locations. Methylene chloride is present in the trip blank and field blank. However, it is present at higher concentrations in B-1, B-22½, B-24, B-74 and B-75. 2-Hexanone is present in the trip blank at about the same concentration as found in B-74, which was the only location where this compound was detected. It is, therefore, assumed to be not present.

Trichloroethene is estimated at a concentration of 4 ppb below the detection limit in B-24 and at a concentration of 7 ppb at B-75. Only B-74 identifies quantities above the detection limit. Borings B-22½, B-24, B-74 and B-75 identify tetrachloroethene above the detection limit. Analyses of B-24 fell outside the calibration range, and therefore, were diluted and re-analyzed. The diluted analyses identified the quantity of tetrachloroethene in B-24. Toluene is quantified in borings B-1, B-22½, B-64 and B-74. 1,1,1-Trichloroethane is present in B-74. Trace quantities below the detection limit of benzene and total xylenes are also present in B-74.

A diluted sample was run on B-24 due to the concentration of tetrachloroethene in the sample. The diluted analyses confirms the presence of acetone, methylene chloride, trichloroethene, tetrachloroethene and toluene at this location. Acetone, 2-Butanone and methylene chloride were found in the method blank run with this sample at significantly lower concentrations.

- Pesticides/Organophosphates/PCBs

Trace concentrations of five pesticides were quantified in the on-site surface soil sampling locations, while no organophosphates were identified. Of the five pesticides identified, one was identified in the method blank.

Endosulfan I was identified in the method blank, B-64 and B-74 below the instrument detection limit. 4,4'-DDT was also identified below the detection limit in B-64, B-74 and B-1. At B-22½ and B-24, however, concentrations above the detection limit were quantified. Trace quantities (2 ppb) of Heptachlor and 4,4'-DDE below detection limits were identified in B-24. While aldrin was also found below the detection limit in B-22½ at a trace concentration of 2 ppb. The organophosphates (malathion and diazinon) were all identified below the detection limits.

Of all the pesticide/PCBs and organophosphates data obtained, only 4,4'-DDT was quantified above the detection limit in borings B-22½ and B-24.

- Miscellaneous Analytical Tests

Four miscellaneous inorganic tests were run on the surface soil samples. These include total solids, total cyanide, total

phenol and total organic halides. The total solids percentages ranged from 89 to 100 percent. All the cyanide and total organic halide (TOX) results were non-detectable. However, phenols were detected in B-22½ and B-74.

B-22½ and B-24 are located within an old drum storage area. B-22½ was collected beneath pallets which were placed directly on the ground. B-24 was collected in between the cracked cement, just outside the rear door of the facility. At both of these locations, residual chemicals from drum handling could be the cause of the contamination present.

B-64 is located just south of the loading dock and north of two storm drains. To obtain the sample at B-64, the pavement had to be broken. Acetone, methylene chloride and toluene were identified at this location.

Based upon the variety of compounds identified in B-74 and the depth at which it was obtained (18-inches) it is likely the contamination present at this location are a result of a spill, mainly composed of tetrachloroethene. The tetrachloroethene contamination in B-75 is suspected to be associated with the contamination at B-74.

5.5 - GROUNDWATER QUALITY

Five groundwater monitoring wells installed on-site at Rite-Off, screen the water table aquifer (Upper Glacial). This aquifer at the site is approximately 80 feet thick and reportedly

separated from the Magothy aquifer by the Gardiners clay confining unit.

Two water table monitoring events on February 16th and March 28th, 1989 confirmed the assumed regional southeasterly direction of groundwater flow at the site. Therefore, contaminants originating from the site would generally move in a southeasterly direction upon reaching the water table (at a depth ranging from 20 to 26 feet). Table 4 in Section 3.4 provides construction details of all the monitoring wells and a summary of observed water table elevations during the monitoring period.

The average component of horizontal velocity, based upon a horizontal hydraulic conductivity of 2,000 gpd/ft^2 is 1.4 feet/day.

5.5.1 - Compounds Quantified in Groundwater

Groundwater quality samples were collected on February 16, 1989. Samples were collected at each of the monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-5) and were analyzed for:

TCL Volatiles
TCL Pesticides/PCBs (including Malathion and Diazinon)
Total Organic Halides
Total Cyanide
Phenols

The laboratory reports for these samples are contained in Appendix C. The results are summarized in Table 7.

- TCL Volatile Organics

Eight volatile organic compounds were identified in the groundwater samples. Of the eight compounds found, two (methylene chloride and 1,1,1-trichloroethane) were also found in

TABLE 7

SUMMARY OF COMPOUNDS QUANTIFIED IN GROUNDWATER

Volatiles	MW-1	MW-2	MW-3	MW-4	MW-5	Field Blank	Trip Blank	Method Blank	MW-3DL Dilution	MW-4DL Dilution	Method Blank
Methylene Chloride	--	--	2JB	--	13B	5U	2JB	2J	180JB	--	3J
1,1-Dichloroethene	--	--	12	120	--	5U	5U	5U	--	1200D	5U
1,1-Dichloroethane	--	--	3J	320D	5	5U	5U	5U	500D	1200D	5U
1,1,1-Trichloroethane	--	--	1100D	4200D	40	2J	5U	5U	14000	23000	5U
Trichloroethene	--	--	15	590D	--	5U	5U	5U	170J	330J	5U
Tetrachloroethene	--	--	210D	1900D	16	5U	5U	5U	2200	1500	5U
Chloroethane	--	--	--	8J	--	10U	10U	10U	--	2500D	10U
1,2-Dichloroethene	--	--	--	2100D	2J	5U	5U	5U	--	990J	5U
Pesticides/PCBs											
Dieldrin	0.02J	--	--	--	--	0.10U	NA	0.10U			
Endosulfan I	--	0.04J	0.03J	0.07	--	0.03J	NA	0.05U			
4-4'-DDT	--	0.12	0.14	0.18	--	0.12	NA	0.10U			
Aldrin	--	--	--	--	0.04J	0.05U	NA	0.05U			
Miscellaneous Analytical Tests											
Cyanide	--	--	--	--	--	--	NA	NA			
Phenols	--	--	--	--	--	--	NA	--			
TOX	109	308	333	297	156	<50	NA	NA			

LEGEND:

All results in ug/l

DL = Diluted sample
NA = Not analyzed
-- = Not detected

B = Found in blank
J = Estimated value - lower than detection limit.
D = Outside calibration range; diluted and re-analyzed.
U = Not detected; detection limits in blanks.

the blanks. Methylene chloride was found in the trip blank, method blank and MW-3 at estimated concentrations below the instruments detection limit. However, methylene chloride was quantified at 13 ug/l (ppb) in MW-5. 1,1-Dichloroethene was quantified in MW-3 at 12 ug/l and 120 ug/l in MW-4. 1,1-Dichloroethane was quantified in MW-4 at 320 ug/l and 5 ug/l in MW-5. MW-3 identified a trace quantity below the detection limit. 1,1,1-Trichloroethane was quantified in MW-3 and MW-4 at elevated concentrations that fell out of the instrument calibration range. In MW-5 40 ug/l was identified, and a trace quantity below the detection limit was found in the field blank. Samples MW-3 and MW-4 were diluted and re-analyzed in order to quantify the 1,1,1-trichloroethane concentrations. 14,000 ug/l and 23,000 ug/l were identified in the respective groundwater samples after dilution. Trichloroethene was quantified in MW-3 at 15 ug/l and 330 ug/l in MW-4 after dilution. Tetrachloroethene was detected outside the calibration range in MW-3 and MW-4. A diluted sample quantified 2,200 ug/l in MW-3 and 1,500 ug/l in MW-4. In addition, 16 ug/l was quantified in MW-5. Chloroethane was identified below the detection limit in MW-4; 1,2-Dichloroethene was detected below the detection limit in MW-5, and estimated at 990 ug/l in MW-4 after dilution.

- Pesticides/Organophosphates/PCBs

Four pesticides were identified at trace levels in the groundwater samples. Of the four compounds identified, two were found in the QA/QC blanks. Dieldrin was identified in MW-1 below

the detection limit; endosulfan I was identified in MW-2, MW-3 and the field blank below the detection limit and in MW-4 at 0.07 ppb. 4-4'-DDT was identified in MW-2 at 0.12 ppb, 0.14 ppb in MW-3, 0.18 ppb in MW-4, and 0.12 ppb in the field blank (all within the approximate same order of magnitude). Aldrin was found in MW-5 below the detection limit.

As these pesticides found in the groundwater samples at trace concentrations are also found in the field blank sample at an equivalent concentration, or in the case of the aldrin found in MW-4 below detection levels, it is concluded that significant pesticide contamination of groundwater does not exist.

No PCBs, malathion and diazinon were detected.

- Miscellaneous Analytical Testing

Cyanide and phenols were not detected in any groundwater samples. However, TOX concentrations ranged from 109 to 333 ppb in all the samples. MW-1 contained 109 ug/l, MW-2 contained 308 ug/l, MW-3 contained 333 ug/l, MW-4 contained 297 ug/l and MW-5 contained 156 ug/l.

CLP protocols follow stringent reporting requirements. These requirements establish the detection limits each compound must be reported at. Therefore, if a compound is reported as less than a given number, it can be stated that the particular compound is non-detected at a quantifiable concentration. Given this, Table 8 is formulated to illustrate the groundwater quality at the site as can be quantified above detection levels.

TABLE 8

COMPARISON TO WATER QUALITY STANDARDS

	MW-1	MW-2	MW-3	MW-4	MW-5	NYS DRINKING WATER STANDARD	USEPA MCL	NYS PART 703 GROUNDWATER STANDARD
Methylene chloride	--	--	--	--	13	5	--	--
1,1-Dichloroethene	--	--	12	120	--	5	7	--
1,1-Dichloroethane	--	--	--	320	5	5	--	--
111-Trichloroethane	--	--	14,000	23,000	40	5	200	--
Trichloroethene	--	--	15	590	--	5	5	10
Tetrachloroethene	--	--	2,200	1,500	16	5	--	--
1,2-Dichloroethene	--	--	--	2,100	--	5	--	--

NOTES:

All concentrations in ppb
MCL indicates Maximum Contaminant Level
-- indicates below detection level

The Upper Glacial aquifer beneath Rite-Off is part of Long Island's soil source aquifer system. As a source of drinking water the groundwater quality at the site is compared to: New York State Code of Rules and Regulations (NYCRR) Part 703, Chapter X, Groundwater Standards; New York State Department of Health Drinking Water Standards (effective 1/89) and USEPA Maximum Contaminant Levels (see Table 8).

As indicated in Table 8, groundwater quality at monitoring well locations MW-3, 4 and 5 is deteriorated such that all three classes of water quality standards are violated. Upgradient monitoring well locations MW-1 and MW-2 generally show no impact indicating that the sources of groundwater contamination at MW-3, 4 and 5 are on-site.

The predominant compounds found in the downgradient wells (MW-3, 4 and 5) at one to two orders of magnitude higher than any other compounds are 1,1,1-trichloroethane and tetrachloroethene. 1,1,1-Trichloroethane was the compound found at the highest concentrations on-site. It was quantified at 14,000 ppb at MW-3 and 23,000 ppb at MW-4. Tetrachloroethene had the second highest concentrations, 2,200 ppb and 1,500 ppb, respectively, at MW-3 and MW-4. These compounds exceed New York State and Federal Drinking Water Standards.

Considering groundwater flow direction in a southeasterly direction, the drum storage area and storm drains located in the rear of the building are considered the most likely source of the

elevated concentrations of groundwater contaminants found at MW-3 and MW-4.

There are no established MCL standards, New York State Drinking Water Standards, or Part 703 Groundwater Standards established for the two pesticides (endosulfan I and 4,4'-DDT) quantified in the on-site groundwater samples. In addition, considering the very low concentrations detected and the presence of these pesticides in the field blank, it is probable that these pesticides are in fact not indicative of the groundwater quality at the Rite-Off site.

5.6 - STORM DRAIN/LEACHING POOL QUALITY

Soil/sludge samples were collected on February 22, 1989 at each of the seven storm water runoff dry wells and one sanitary leaching pool (refer to Figure 6 in Section 3.4 for Sample Location Map). Each sample was analyzed for:

TCL Volatiles
TCL Pesticides/PCBs (including Malathion and Diazinon)
Total Organic Halides
Total Cyanide
Phenols

The laboratory reports for the sampling event are contained in Appendix C. For ease of interpretation, Table 9 provides a summary of data.

- TCL Volatile Organics

Eleven volatile organic compounds were identified in the storm drains and leaching pool. Of the eleven compounds identified, three were in the blanks. Methylene chloride was

TABLE 9

SUMMARY OF COMPOUNDS QUANTIFIED IN STORM DRAINS/LEACHING POOLS

Volatiles	SD-1	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7	L.P.	Field Blank	Trip Blank	Method Blank	Dilutions SD-5(DL)	Dilutions SD-6(DL)	Dilutions SD-7(DL)	Method Blank
Methylene Chloride	11B	8B	6B	11B	17B	17B	20B	6JB	5B	4J	5J	150	17JB	86	5U
1,1,1-Trichloroethane	10B	12B	6B	70B	900BD	160B	540BD	7JB	7B	10U	5J	930	430B	710	5U
Tetrachloroethene	5J	5J	--	11	280	850D	130	--	5U	10U	10U	900	1100	170	5U
Toluene	2J	--	2J	4J	6J	3J	46	7J	5U	5U	5U	32J	25J	75	5U
Acetone	--	55B	--	--	34B	13JB	90B	--	11B	10U	9J	120D	81D	91D	10U
1,1-Dichloroethane	--	2J	--	--	8J	13	44	--	5U	5U	5U	62D	19J	50	5U
2-Butanone	--	9J	--	--	--	--	12J	--	10U	10U	10U	--	--	91D	10U
Trichloroethene	--	--	--	--	8J	2J	19	--	5U	5U	5U	28J	17J	30J	5U
Carbon Disulfide	--	--	--	--	--	7J	6J	--	5U	5U	5U	--	16J	45D	5U
1,2-Dichloroethene	--	--	--	--	--	--	4J	--	5U	5U	5U	--	--	45D	5U
Ethylbenzene	--	--	--	--	--	--	7J	--	5U	5U	5U	--	--	14J	5U
Pesticides/PCBs															
Aldrin	--	3J	--	--	--	--	--	--	NA	NA	8U				
Endosulfan I	--	5J	2J	--	--	7J	--	--	NA	NA	8U				
4,4'-DDE	--	--	--	5J	23J	--	7J	--	NA	NA	16U				
Heptachlor	--	--	--	--	7J	4J	--	7J	NA	NA	8U				
Heptachlor Epoxide	--	--	--	--	7J	--	5J	--	NA	NA	8U				
4-4'-DDD	--	--	--	--	10J	--	--	--	NA	NA	16U				
Gamma-BHC (Lindane)	--	--	--	--	--	--	11J	--	NA	NA	8U				
Miscellaneous Analytical Tests															
Total Solids (%)	81.0	74.0	85.0	75.0	50.0	54.0	61.0	85.0	NA	NA	NA				
Cyanide (mg/kg)	--	--	--	--	--	--	--	--	NA	NA	NA				
Phenols	432	--	118	400	700	648	820	176	NA	NA	NA				
TOX (mg/kg)	--	--	--	--	--	--	--	--	NA	NA	NA				

LEGEND:

All results reported in ug/kg except as noted.

SD = Storm drain
LP = Leaching pool
NA = Not analyzed
-- = Not detected

B = Found in blank
J = Estimated value - lower than detection limit.
D = Outside calibration range; diluted and re-analyzed.
U = Not detected; detection limits in blanks.

identified in all the sampling locations, and in all three blanks. The trip and method blanks, and the leaching pool sample identified concentrations below the detection limits, while the remaining locations including the field blank identified concentrations above the detection limit. Methylene chloride is a common laboratory contaminant and may in this case be present in all samples because of its presence in the laboratory. 1,1,1-Trichloroethane was identified in the method blank and the leaching pool below the detection limit. This compound was also quantified above the detection limit in the field blank and all seven storm drain samples. In SD#5 and SD#7 the concentrations were elevated and fell out of the instrument detection limits. Therefore, these samples had to be diluted and re-analyzed. It was quantified at concentrations of 930 ppb and 710 ppb, respectively, at SD#5 and SD#7. Tetrachloroethene was identified below the detection limit in SD#1 and SD#2, and above the detection limit in SD#4, SD#5, SD#6 and SD#7. The concentrations in SD#6 fell out of the instrument detection limits, and had to be diluted and re-analyzed. Elevated concentrations were found in SD#5, SD#6 and SD#7, ranging from 130 ppb to 1,100 ppb. Toluene was identified below the detection limit in SD#1, SD#3, SD#4, SD#5, SD#6 and the leaching pool. Only SD#7 quantified a concentration (46 ppb) above the detection limits. Acetone was identified in the method blank and SD#6 at concentrations below the detection limit. However, it was identified above the detection limit in SD#2, SD#5, SD#7 and the field blank.

1,1-Dichloroethane was identified in SD#2 and SD#5 at concentrations below the detection limits, and in SD#6 and SD#7 at concentrations above the detection limit. 2-Butanone was identified below the detection limit in both SD#2 and SD#7. Trichloroethene was quantified above the detection limit in SD#7, but below the detection limit in SD#5 and SD#6. Carbon disulfide was identified in SD#6 and SD#7 below the detection limits while, 1,2-dichloroethene and ethylbenzene were found below the detection limits in SD#7.

Twenty-four non-target compounds were identified at the eight sample locations. With the exception of SD#1, all the locations identified some type of non-target compounds, however, all the non-target compounds identified were all quantified below the detection limit for the specified compound.

- Pesticides/Organophosphates/PCBs

Seven pesticides were identified in the storm drains and leaching pool locations. Aldrin was identified in SD#2 below the detection limit. Endosulfan I was identified in SD#2, SD#3 and SD#6 below the detection limit. 4,4'-DDE was identified in SD#4, SD#5 and SD#7 below the detection limit. Heptachlor was identified in SD#5, SD#6 and the leaching pool below the detection limit. Heptachlor epoxide was detected in SD#5 and SD#7 below the detection limit. 4,4'-DDD was identified in SD#5 below the detection limit. Gamma-BHC (lindane) was detected in SD#7 below the detection limit.

Neither malathion nor diazinon were detected in any of the storm drains or leaching pool samples.

- Miscellaneous Analysis

Total solids percentages ranged from 50 to 85 percent. Cyanide and TOX concentrations are below detection levels. However, phenol concentrations are elevated ranging from non-detectable at SD#2 to 820 ppb at SD#7.

None of the pesticide/PCB data or organophosphate data are quantified above the detection limits.

SD#7 contains most of the volatile organic compounds quantified. Storm drains SD#7, SD#6, SD#5 and SD#4 are all located in the rear (south) of the facility and might be impacted due to chemical transfer and storage practices. Concentrations of 1,1,1-trichloroethane and tetrachloroethene were elevated enough at SD#5, SD#6 and SD#7 to require re-analysis with diluted samples to quantify concentrations. Storm drains SD#1, SD#2 and SD#3 are located in the front of the property and are generally not impacted significantly.

6.0 - SUMMARY AND CONCLUSIONS

A Phase II investigation of the Rite-Off site was conducted to determine the environmental hazards of the site. To accomplish this goal, the tasks performed included:

- geophysical survey;
- soil gas study and surface soil sampling;
- subsurface boring and sampling program;
- installation and sampling of monitoring wells; and
- sampling of storm drains and leaching pool.

Laboratory analyses of samples obtained at the site indicate that volatile organic contamination is present in surface soils near the center of the site. The primary contaminant is tetrachloroethene which is present at concentrations ranging up to 3,800 ppb in surface soil at the rear drum storage area. It is also present beneath the paved driveway at two locations sampled between the two on-site buildings at concentrations of 240 and 260 ppb.

In addition to certain surface soil locations, significant volatile organic contamination was quantified in three of the on-site storm drains located in the rear of the property (SD#5, SD#6 and SD#7). The compounds 1,1,1-trichloroethane and tetrachloroethene were the primary contaminants.

Both 1,1,1-trichloroethane and tetrachloroethene were the dominant compounds found in the groundwater at the site. Downgradient monitoring wells MW-3 and MW-4 showed the most

significant impact with concentrations of 1,1,1-trichloroethane of 14,000 ppb and 23,000 ppb, respectively. Tetrachloroethene concentrations were 2,200 ppb at MW-3 and 1,500 ppb at MW-4. These concentrations are above applicable water quality standards.

The probable source areas for on-site groundwater contamination are contaminated soils in the rear drum storage area and contaminated sediments in the rear storm drains. The probable source of contamination in the rear storm drains is the spill of tetrachloroethene that occurred in September of 1983, when the manufacturing building was vandalized and the trespassers opened tanks containing this solvent. Rite-Off reported the incident to the Suffolk County Police Department, SCDHS and USEPA. With SCDHS oversight, a contractor was hired to cleanup the spill, which included pumping out the storm drains and excavation of soils where the tetrachloroethene was directed.

A Hazard Ranking Score (HRS) of 4 was computed based upon the data obtained in this study. The Thomas Street public water supply well field located approximately 4,550 feet downgradient of the site is considered a possible receptor of on-site contamination. Groundwater contamination in the vicinity of the Thomas Street Well Field has been previously documented with several industries identified as sources of contamination at the well field.

H2MGROUP

APPENDIX A

BORING LOGS, GRAIN SIZE ANALYSES

H2M GEOLOGIC LOG JOB NO. RITE8801

WELL DATA: Hole Diam: 6" TD: 32' Screen Setting: 22'-32' Slot: #10
Casing Diam: 2" Length: ____ Well Status: complete & developed

Borehole Location: MW-1
Contractor: Water Resources
Driller: J Barnes
Elevation: 60.49 Ref Point: TOC

Completion Depth: 32'
Date Started: 1/25/89 Finished: 1/25/89
Weather: ____
Logged by: KFS Checked by: MS

Type of Rig: Truck X Trailer Mounted ___ Tripod ___ Other ____
Drilling Method: Hollow Stem Auger Bit type: Carbide
Sampler Hammer Weight: 140 (lbs).
Average Hammer Fall (inches): 24"

Depth to Groundwater: 23.5 Date: 2/3/89 Time: ____ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
.5	①	51	0(0)	12"	3" wet fill, 9" dry fill	SW
1						
1.5						
2.0						
2.5						
3.0						
3.5						
4.0						
4.5						
5.0	②	32	0(0)	14"	.5" fill; 13.5" fine to coarse	SW
5.5					tan/gray sands, some	
6.0					gravel	
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5					similar; no fill; top 2" brown	
10.0	③	29	0(0)	13"	sand; 11" gray, tan	SW

SIGNATURE: DATE:

PAGE 2 of 2 H2M GEOLOGIC LOG (CONTINUED) JOB NO. RITE80

Borehole Location: MW-1 Completion Depth: 32'
Elevation: 60.49 Ref Point: TOC Logged by: KFS Checked by: ~~KFS~~

Depth to Groundwater: 23.5 Date: 2/3/89 Time: ____ Aquifer: ____

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
11						
13						
15	④	39	—	0	No recovery - rock stuck in spoon	
17						
19						
21						
	⑤	20			wet; fine to coarse sands; some gravel	SW
23						
25						
27						
29						
31						

SIGNATURE: DATE:

H2M GEOLOGIC LOG JOB NO. RITE8801

WELL DATA: Hole Diam: 6" TD: 31' Screen Setting: 21'-31' Slot: #10
Casing Diam: 2" Length: ____ Well Status: complete & developed

Borehole Location: MW-2
Contractor: Water Resources
Driller: S Barnes
Elevation: 58.41 Ref Point: TOC

Completion Depth: 31'
Date Started: 1/25/89 Finished: 1/25/89
Weather: ____
Logged by: KFS Checked by: MEJ

Type of Rig: Truck X Trailer Mounted ___ Tripod ___ Other ___
Drilling Method: Hollow Stem Auger Bit type: Carlside
Sampler Hammer Weight: 140 (lbs).
Average Hammer Fall (inches): 24"

Depth to Groundwater: 21.3 Date: 2/3/89 Time: ___ Aquifer: Upper Glorieta

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
.5	(1)	—	0(0)	14"	4" fill, 10" soil; med/fine grain; SW	
1					tan qtz/feld sand w/cobble	
1.5						
2.0						
2.5						
3.0						
3.5						
4.0						
4.5						
5.0	(2)	9	0(0.1)	4"	similar	SW
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0	(3)	17	0(0)	10"	similar	SW

SIGNATURE: DATE:

PAGE 2 of 2 H2M GEOLOGIC LOG (CONTINUED) JOB NO. A1TE8801

Borehole Location: MW-2 Completion Depth: 31'
Elevation: 58.41 Ref Point: TOC Logged by: KFS Checked by: MC

Depth to Groundwater: 21.3 Date: 2/3/89 Time: ____ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
11						
13						
15	④	31	0(0.1)	5"	similar; some rust colored fine sands	SW
17						
19						
	⑤	55	0(0.2)		similar	SW
21						
23						
25						
27						
29						
31						

SIGNATURE: DATE:

H2M GEOLOGIC LOG JOB NO. RITE8801

WELL DATA: Hole Diam: 6" TD: 31' Screen Setting: 21'-31' Slot: #10
Casing Diam: 2" Length: ____ Well Status: Complete & developed

Borehole Location: MW-3
Contractor: Water Resources
Driller: J Barnes
Elevation: 58.75 Ref Point: TOC

Completion Depth: 31'
Date Started: 1/25/89 Finished: 1/25/89
Weather: ____
Logged by: KFS Checked by: MJS

Type of Rig: Truck X Trailer Mounted ___ Tripod ___ Other ___
Drilling Method: Hollow Stem Auger Bit type: Carbide
Sampler Hammer Weight: 140 (lbs).
Average Hammer Fall (inches): 24"

Depth to Groundwater: 22.55 Date: 2/3/89 Time: ___ Aquifer: Upper Gloucester

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
.5	①			0	FILL	
1						
1.5						
2.0						
2.5						
3.0						
3.5						
4.0						
4.5						
5.0	②			0	no recovery	
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0	③	35	.1(.2)	16"	well graded; f-c sand; tan/gray	SW

SIGNATURE: DATE:

PAGE 2 of 2 H2M GEOLOGIC LOG (CONTINUED) JOB NO. RITE8801

Borehole Location: MW-3 Completion Depth: 31'
Elevation: 58.75 Ref Point: TOC Logged by: KES Checked by: LMT

Depth to Groundwater: 22.55 Date: 2/3/89 Time: ____ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
11						
13						
15	(4)	29	.1(.2)	4"	similar w/cobble	SW
17						
19						
	(5)		0(.2)	4"	similar, no cobble	SW
21						
23						
25						
27						
29						
31						

SIGNATURE: DATE:

H2M GEOLOGIC LOG JOB NO. RITE8801

WELL DATA: Hole Diam: 6" TD: 31' Screen Setting: 21'-31' Slot: #10
Casing Diam: 2" Length: ____ Well Status: complete & developed

Borehole Location: MW-4
Contractor: Water Resources
Driller: J. Barnes
Elevation: 5709 Ref Point: TOC

Completion Depth: 31'
Date Started: 1/25/89 Finished: 1/25/89
Weather: ____
Logged by: KES Checked by: MT

Type of Rig: Truck X Trailer Mounted ___ Tripod ___ Other ___
Drilling Method: Hollow Stem Auger Bit type: Carbide
Sampler Hammer Weight: 140 (lbs).
Average Hammer Fall (inches): ~24"

Depth to Groundwater: 20.72 Date: 2/3/89 Time: ___ Aquifer: Upper Glover

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
.5	①	ASP	-		ASPHALT	
1						
1.5						
2.0						
2.5						
3.0						
3.5						
4.0						
4.5						
5.0	②	64	.1(.5)	14"	tan/gray; fine to coarse	SW
5.5					sands; well graded w/	
6.0					gravel	
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5						
10.0	③	31	.1(.5)	13"	tan to gray w/some rust color	SW

SIGNATURE: DATE:

PAGE 2 of 2 H2M GEOLOGIC LOG (CONTINUED) JOB NO. RITE8801

Borehole Location: MW-4 Completion Depth: 31'
Elevation: 57.09 Ref Point: TOC Logged by: KPS Checked by: MM

Depth to Groundwater: 20.72 Date: 2/3/89 Time: ___ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
11						
13						
15	④	32	.1(20)		tan/gray, fine to coarse sand w/some gravel	SW
17						
19						
	⑤	42	0(9)	16"	similar, wet	SW
21						
23						
25						
27						
29						
31						

SIGNATURE: DATE:

H2M GEOLOGIC LOG JOB NO. RITE 8801

WELL DATA: Hole Diam: 6" TD: 31 Screen Setting: 21'-31' Slot: #10
Casing Diam: 2" Length: ____ Well Status: complete & developed

Borehole Location: MW-5 (6)
Contractor: Water Resources
Driller: J. Barnes
Elevation: 62.34 Ref Point: TOC

Completion Depth: 31'
Date Started: 1/25/89 Finished: 1/25/89
Weather: ____
Logged by: KFS Checked by: [illegible]

Type of Rig: Truck X Trailer Mounted ___ Tripod ___ Other ___
Drilling Method: Hollow Stem Auger Bit type: Carbide
Sampler Hammer Weight: 140 (lbs).
Average Hammer Fall (inches): 24"

Depth to Groundwater: 25.95 Date: 2/3/89 Time: ___ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
.5						
1						
1.5						
2.0						
2.5						
3.0						
3.5						
4.0						
4.5						
5.0	①				Fill	
5.5						
6.0						
6.5						
7.0						
7.5						
8.0						
8.5						
9.0						
9.5					tan/gray, fine to coarse sands	SW
10.0	②	21	.1(.2)	24"	w/some gravel, well sorted, trace cobbles	

SIGNATURE: DATE:

PAGE 2 of 2 H2M GEOLOGIC LOG (CONTINUED) JOB NO. RITE880/

Borehole Location: MW-6 Completion Depth: 31'
Elevation: 62.34 Ref Point: TOC Logged by: KFS Checked by:

Depth to Groundwater: 25.95 Date: 2/3/89 Time: ____ Aquifer: Upper Glacial

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology
11						
13						
15	③	25	.1(.3)	12"	similar	SW
17						
19						
	④	32	.1(.2)	17"	similar	SW
21						
23						
25	⑤	35	.1(.2)	8"	similar	SW
27						
29						
31						

SIGNATURE: DATE:

H2M GROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
Consulting Engineers, Architects
Planners and Scientists

JOB RITE-OFF SITE
SHEET NO. 1 OF 2
CALCULATED BY KEN COTTRELL DATE 1-30-89
CHECKED BY DATE
SCALE

SIEVE ANALYSIS

SAMPLE LOCATION RITE-OFF MW-2 & MW-4 1/25/89
DEPTH 15 FEET to 17 FEET ANALYST(S) KEN COTTRELL
CONTAINER + SAMPLE WEIGHT 266.2 grams
WEIGHT OF CONTAINER 83.4 gms
TOTAL DRY SAMPLE WEIGHT 182.8 gms

SIEVE OPENING	US STD. SIEVE #	DESIGNATION	WT. OF CONTAINER + CUM. WT. OF SAMPLE	PREVIOUS WT. BEFORE ADDITION OF SIEVE	FRACTIONAL WEIGHT	WEIGHT PERCENT	CUMULATIVE SAMPLE WEIGHT	CUMULATIVE WEIGHT PERCENT
19.0mm		COARSE GRAVEL	83.4g	83.4g	ϕ	ϕ	ϕ	ϕ
4.75mm	4	FINE GRAVEL	97.6g	83.4g	14.2g	7.77	14.2g	7.77
2.00mm	10	COARSE SAND	110.5g	97.6g	12.9g	7.06	27.1g	14.82
.425mm	40	MED. SAND	190.0g	110.5g	79.5g	43.49	106.6g	58.32
.075mm	200	FINE SAND	259.9g	190.0g	69.9g	38.24	176.5g	96.55
<.075mm	PAN	SILTS/CLAYS	264.2g	259.9g	4.3g	2.35	180.8g	98.91

PRE-ANALYTICAL WEIGHT OF SAMPLE 182.8 grams
MINUS POST-ANALYTICAL SAMPLE WEIGHT 180.8 grams
EQUALS SIEVE LOSS 2.0 grams
% SIEVE LOSS 1.09

COMMENTS: Samples collected 1/25/89 by KJC/KFS, from the unsaturated zone. Before placed in drying oven, container + (wet) sample wt = 272.1 gms. Total (wet) sample weight = 188.7 grams. Therefore, moisture content at this depth in the unsaturated zone is about 3.13%

PRODUCT 335-1 ACCO Inc. Groton, Mass. 01471. To Order PHONE TOLL FREE 1-800-225-4238

H2M GROUP
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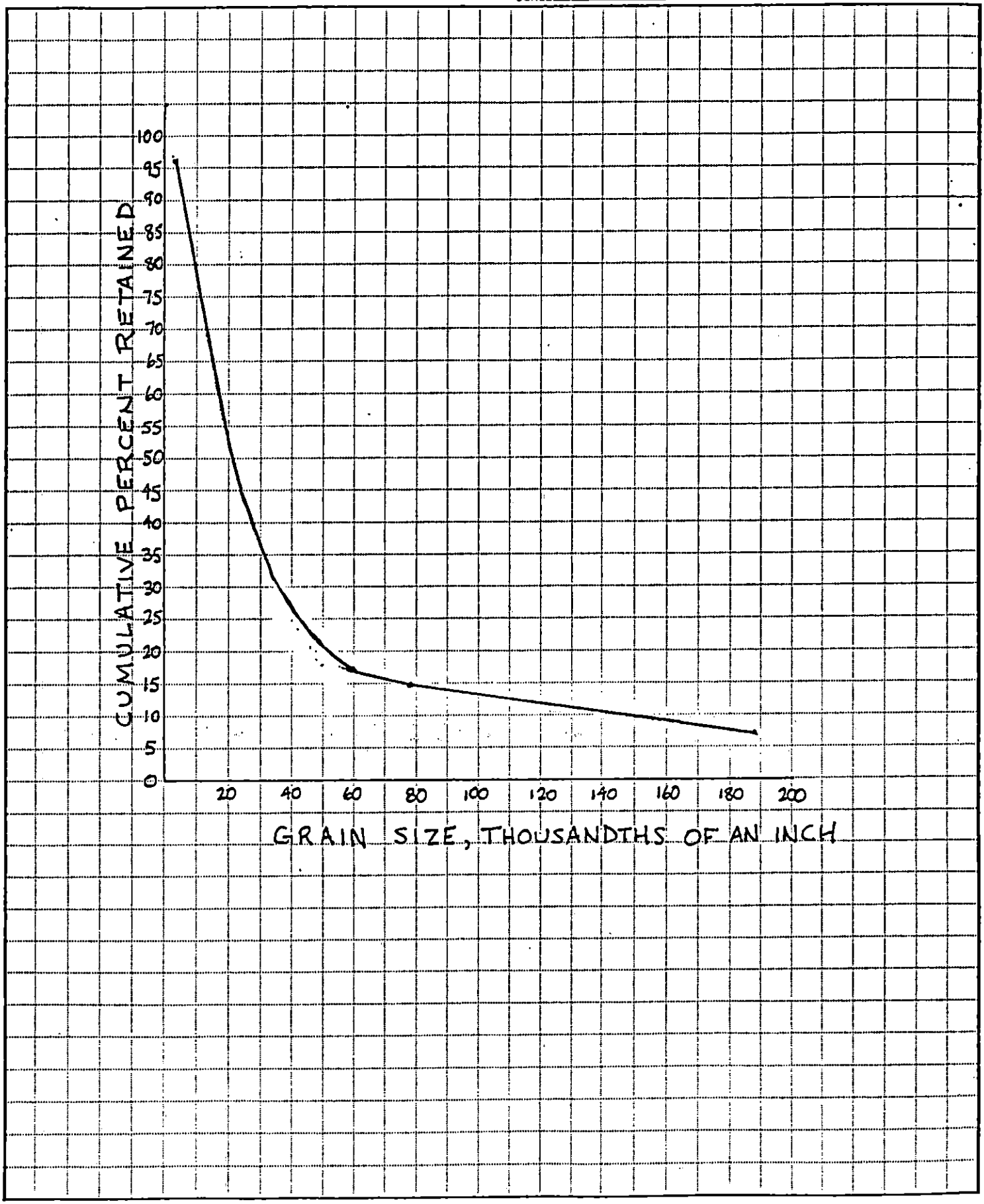
JOB RITE 8801 SA

SHEET NO. 2 OF 2

CALCULATED BY KEN COTTRELL DATE 1-30-89

CHECKED BY _____ DATE _____

SCALE _____



PRODUCT 215-1 / NCS Inc., Groton, Mass. 01471. To Order PHONE TOLL FREE 1-800-225-6350

APPENDIX B

GROUNDWATER SAMPLING RECORDS

FIELD SAMPLING RECORD

SITE RITE-OFF JOB# RITE8801SA

DATE 2-16-89 TIME 10:00

SAMPLE LOCATION MW-1

SAMPLERS KJC / KFS

WEATHER cloudy, damp, 40°-45°F, wind 5-8 mph

DEPTH TO H20 23.55 MEAS. POINT 31.26 DTB Top of Casing

STATIC H20 LEVEL 7.71 STATIC VOLUME 1.26 gallons

VOLUME H20 TO BE REMOVED 3.8 gallons || 5 gallons removed

EVACUATION TECHNIQUE:

BAILED ☑ # OF BAILS

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S (9) According to Chain of custody forms

SAMPLE CHARACTERISTICS: cloudy, murky

REFRIGERATION: Yes

DATE 2/16/89 TIME 10:20 COOLER # 1 of 4

FIELD PARAMETERS:

pH 6.25 TEMP — CONDUCTIVITY 224

H2M HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE RITE-OFF JOB# RITE 8801SA

DATE 2-16-89 TIME 14:40

SAMPLE LOCATION MW-2

SAMPLERS KJC / KFS

WEATHER 40°F cloudy, breezy

DEPTH TO H2O 21.72' MEAS. POINT Top of casing DTB = 31.59'

STATIC H2O LEVEL 9.87' STATIC VOLUME 1.6 gallons

VOLUME H2O TO BE REMOVED 4.8 gallons || 5 gallons

EVACUATION TECHNIQUE:

BAILED ☑ # OF BAILS

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S (9) Filled as
According to Chain-of-custody form

SAMPLE CHARACTERISTICS: bit cloudy

REFRIGERATION: Yes

DATE 2/16/89 TIME 3:05 COOLER # 4 of 4

FIELD PARAMETERS: Yes

pH	TEMP	CONDUCTIVITY
6.95 / 6.70		215 / 215

H2M HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE Rite-Off JOB# Rite 8801 SA

DATE 2-16-89 TIME 10:50

SAMPLE LOCATION MW 3 Corner - dangradient

SAMPLERS KJC | KFS

WEATHER 35° Cold - Rainy

DEPTH TO H20 22.58' MEAS. POINT DTB 30.10 top of casing

STATIC H20 LEVEL 7.52' STATIC VOLUME 1.23 gal.

VOLUME H20 TO BE REMOVED 3.7 gallons || 5 gallons removed

EVACUATION TECHNIQUE:

BAILED ☑ # OF BAILS 5 Gallons removed

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S (9) Filled according to chain-of-custody

SAMPLE CHARACTERISTICS: CLEAR

REFRIGERATION: Yes

DATE 2/16/89 TIME 11:30 COOLER # 1 of 4

FIELD PARAMETERS: Yes

pH	TEMP	CONDUCTIVITY
6.63 / 6.73		132 / 132

H2M HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE RITE-OFF JOB# RITE8801 SA

DATE 2-16-89 TIME 12:00

SAMPLE LOCATION MW-4

SAMPLERS KJC/KFS

WEATHER 40°F cloudy, wind 5-8 mph

DEPTH TO H20 20.80' MEAS. POINT top of casing DTB = 29.71'

STATIC H20 LEVEL 8.91' STATIC VOLUME 1.45 gallons

VOLUME H20 TO BE REMOVED 4.36 gal 11 5 gallons rmvd.

EVACUATION TECHNIQUE:

BAILED ☑ # OF BAILS

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: clear - slightly cloudy

REFRIGERATION:

DATE TIME COOLER #

FIELD PARAMETERS:

pH TEMP — CONDUCTIVITY

6.84 185

H2M HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE RITE-OFF JOB# RITE 8801 5A

DATE 2-16-89 TIME 15:20

SAMPLE LOCATION MW-5

SAMPLERS KC / KFS

WEATHER Cloudy 35:40°F brisk wind

DEPTH TO H2O 26.03' MEAS. POINT top of casing DTB 34.07'

STATIC H2O LEVEL 8.04' STATIC VOLUME 1.3 gallons

VOLUME H2O TO BE REMOVED 3.9 gallons / 5 gallons

EVACUATION TECHNIQUE:

BAILED ☑ # OF BAILS

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S (9) As per Chain-of-custody forms

SAMPLE CHARACTERISTICS: CLOUDY

REFRIGERATION: Yes

DATE 2/16/89 TIME 3:45 COOLER # 4 of 4

FIELD PARAMETERS: Yes

pH 6.13 TEMP — CONDUCTIVITY 310

6.06 350

H2MGROUP

APPENDIX C

LABORATORY DATA
(12 VOLUME CLP DATA PACKAGE)

APPENDIX D

HAZARDOUS RANKING SYSTEM (HRS) SCORING SHEETS

Facility name: RITE-OFF, INC.

Location: 1545 5th INDUSTRIAL COURT, BAYSHORE, N.Y.

EPA Region: II

Person(s) in charge of the facility: MR. HOWARD RAPPS - PRES.

Name of Reviewer: _____ Date: July 1989

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.)

Rite-off, Inc. blends and packages spray lubricants, solvents, insecticides, and other aerosol products for the retail market.

Scores: $S_M = 4.26$ ($S_{gw} = 7.37$ $S_{sw} = N/A$ $S_a = N/A$)

$S_{FE} = N/A$

$S_{DC} = N/A$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	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	2	6	
Net Precipitation	0 (1) 2 3	1	1	3	
Permeability of the Unsaturated Zone	(0) 1 2 3	1	0	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			6	15	
3 Containment	0 (1) 2 3	1	1	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 (15) 18	1	15	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			16	26	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 (35) 40	1	35	40	
Total Targets Score			44	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			4,224	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 7.37		

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		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		3	
1-yr. 24-hr. Rainfall	0 1 2 3		1		3	
Distance to Nearest Surface Water	0 1 2 3		2		6	
Physical State	0 1 2 3		1		3	
Total Route Characteristics Score					15	
3 Containment	0 1 2 3		1		3	4.3
4 Waste Characteristics						4.4
Toxicity/Persistence	0 3 6 9 12 15 18		1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score					26	
5 Targets						4.5
Surface Water Use	0 1 2 3		3		9	
Distance to a Sensitive Environment	0 1 2 3		2		6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40		1		40	
Total Targets Score					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					64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} =			

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		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	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	7.37	54.32
Surface Water Route Score (S_{sw})	N/A	N/A
Air Route Score (S_a)	N/A	N/A
$S_{gw}^2 + S_{sw}^2 + S_a^2$		54.32
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		7.37
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		4.26

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1		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	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				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				21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =			

FIGURE 12
DIRECT CONTACT WORK SHEET

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} =		

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: RITE - OFF, INC.

LOCATION: 1545 5th Industrial Court, Bayshore, NY

DATE SCORED: May 1989

PERSON SCORING: Holzmacher, Mcleudon & Murrell, P.C. (Hzm)
KFS/SYL

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):
Phase II Hydrogeologic Investigation
Hzm Files, Melville, NY

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

—

COMMENTS OR QUALIFICATIONS:

—

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No observed release. Contaminants detected in on-site downgradient monitoring wells (MW-3, MW-4 and MW-5). These wells are screened in the upper glacial aquifer. No. wells screened in the Magothy aquifer.

Rationale for attributing the contaminants to the facility:

Assigned Value = 0

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

ref # 7: (USGS, Jensen & Soren)
3: (H2M, 1989)

Name/description of aquifers(s) of concern:

Aquifer of concern is the Magothy aquifer since the Magothy is used as a public water supply for area residents. The Magothy is characterized as being composed of fine sands, sandy clays, and silty clays. The gardiner's clay which exists along the south shore of Long Island and serves as an impermeable barrier between the Magothy and the shallower Upper glacial aquifer, is found at an approximate depth of 70 to 90 feet below the water table.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

The Magothy aquifer is located at approximately 90 feet below grade.

ref #

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

Wastes are stored above ground at the facility.

Depth from waste to water: 90 feet

∴ Distance 76 to 150 feet

Assigned value = 1

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

37 inches

Ref # 4 (NOAA, Climatological Data - Annual Summary, 1987)

Mean annual lake or seasonal evaporation (list months for seasonal):

34 inches

Ref # 1 (HRS User's Manual)

Net precipitation (subtract the above figures):

37 inches - 34 inches = 3 inches

Assigned Value = 1

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

This refers to both unsaturated soils as well as the Upper glacial deposits and gardiners clay above the Magothy aquifer.

a) Soil type in unsaturated zone and Upper glacial deposit - fine to medium course sand with gravel

b) Gardiners Clay - Silty clay, clay loams,

Permeability associated with soil type:

a) fine to medium sand, gravel - $> 10^{-3}$ cm/sec (3)

b) Clays - $< 10^{-7}$ cm/sec (0)

Assigned Value = 0

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Sludges - Still bottoms,

Liquids - solvents used in packaging, lubricants.

* * *

Assigned Value = 3

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

a) Wastes generated at the facility are placed into 55-gallon drums which are stored on top of wooden pallets in the drum storage area. The designated drum storage area is not paved.

b) Aboveground indoor process tanks - containers sealed, in sound condition, with adequate liner.

Method with highest score:

Containers (55 gallon drums) sealed and in sound condition, no liner.

ref #1 (HRS User's Manual)
#3 (H2M, 1989)

Assigned Value = 1

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:	Toxicity / Persistence
Methylene Chloride	12
1,1-Dichloroethene	15
1,1-Dichloroethane	12
1,1,1-Trichloroethane	12
Tetrachloroethene	15

Compound with highest score:

Tetrachloroethene	15

Assigned Value = 15

ref #1 (HRS User's Manual)
#3 (H2M, 1989)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Up to 40 drums

Assigned Value = 1

Basis of estimating and/or computing waste quantity:

Amount of waste generated for off-site disposal at a TSD facility within the 90-day period under RCRA.

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Primary use of the Magothy Aquifer is as a public drinking water supply.

Assigned Value = 3

Distance to Nearest Well

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

Suffolk County Water Authority (SCWA) well field is located at Thomas Avenue. SCWA Well S-46235 (712 feet deep)
S-50546 (666 feet deep)

Distance to above well or building:

Thomas Avenue well field is located approximately 4,550 feet from the site in a downgradient direction.

Assigned Value = 3

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Suffolk County Water Authority public supply wells within a 3-mile radius include: Thomas Avenue well field,

Assigned Value = 5

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

N/A - The area is developed with primarily residential and industrial.

Total population served by ground water within a 3-mile radius:

Groundwater used as a public drinking water supply. Population served is estimated to be greater than 10,000.

Assigned Value = 5

Matrix Value = 35

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Rationale for attributing the contaminants to the facility:

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Name/description of nearest downslope surface water:

Average slope of terrain between facility and above-cited surface water body in percent:

Is the facility located either totally or partially in surface water?

Is the facility completely surrounded by areas of higher elevation?

1-Year 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Compound with highest score:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Basis of estimating and/or computing waste quantity:

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Is there tidal influence?

Distance to a Sensitive Environment

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

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Total population served:

Name/description of nearest of above water bodies:

Distance to above-cited intakes, measured in stream miles.

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

Date and location of detection of contaminants

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

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

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

1 CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

* * *

3 CONTAINMENT

Type of containment, if applicable:

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Compound with highest score:

* * *

5 TARGETS

Population within one-mile radius

Distance to critical habitat (of endangered species)

REFERENCES

If the entire reference is not available for public review in the EPA regional files on this site, indicate where the reference may be found:

Reference Number	Description of the Reference
1	Uncontrolled Hazardous Waste Site Ranking System; A Users Manual. National Oil and Hazardous Substances Contingency Plan, Appendix A (40 CFR 300)(47 FR 31219), July 16, 1982.
2	United States Geological Survey, Topographical Map, 1967, Greenlawn, Bayshore East, Bayshore West, Central Islip Quadrangles.
3	Holzmacher, McLendon & Murrell, P.C. Phase II Investigation, Rite-Off, Inc. Site, July 1989 (Draft)
4.	National Oceanic and Atmospheric Administration - Climatological Data - Summary, 1987.
5.	Suffolk County Department of Health Services (SCDHS) Interim Report #2, Vinyl Chloride Contamination of Ground Water North Bay Shore, New York, November, 1983.
6	SCDHS Correspondence -
7	USGS - Hydrogeology of Suffolk County, Long Island, New York. Jensen and Soren, 1974.