PRELIMINARY INVESTIGATION OF THE HOOKER CHEMICAL AND PLASTICS SITE (CURRENTLY RUCO POLYMER CORPORATION) HICKSVILLE, NASSAU COUNTY, NEW YORK

PHASE I. SUMMARY REPORT

ECOLOGICAL ANALYSTS, INC.

EA Report DEC31A

PRELIMINARY INVESTIGATION OF THE HOOKER CHEMICAL AND PLASTICS SITE (CURRENTLY RUCO POLYMER CORPORATION) HICKSVILLE, NASSAU COUNTY, NEW YORK

PHASE I. SUMMARY REPORT

Prepared for

New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Prepared by

Ecological Analysts, Inc.
R.D. 2, Goshen Turnpike
Middletown, New York 10940

November 1983

CONTENTS

EXECUTIVE SUMMARY

The former Hooker Chemical and Plastics site (NY I.D. No. 130004, EPA I.D. No. NYD002920312), now owned by Ruco Polymer Corporation, is located on New South Road, Hicksville, Nassau County, New York. The site is an active plastics and synthetics plant located on 72 acres in an industrial park area of Hicksville. The surrounding area is highly urbanized. Major products are and have been polyesters, PVC compounds, polyurethanes, and plasticizers. Over the years of operation, Hooker/Ruco has employed a large number of waste disposal methods (Attachment 6-1 through 6-3), both onsite and offsite. Onsite disposal of liquid wastes has been through the use of sand sumps. These sumps have been in operation from 1951 to 1975, and received wastewater from PVC, latex, and ester manufacturing processes. The Plant 2 PVC (and latex) sumps received approximately 2 million gallons per year of waste water from 1956 to 1975. The primary wastes are 0.1% PVC resin solids, vinyl chloride (600-1,200 ppm), trichloroethylene, and vinyl acetate. In addition, styrene and butadiene was also discharged from latex processing, though the amount is unknown.

The Plant 1 ester sump received waste water containing "considerable" amounts of mixed glytcols and alcohols. The waste water also included perchloro-ethylene, methanol, and organic acids such as adipic, trimellitic, maleic, and phthalic. These sumps were in operation from 1951 to 1975, though the total amounts of waste water discharged are unknown.

Additionally, unknown wastes could enter these sumps due to plant upsets, spills, runoff, etc. Currently, these sumps are still exposed and subject to possible contamination.

The contamination of industrial wells at the neighboring Grumman Aerospace Corporation with vinyl chloride and other chlorinated hydrocarbons was verified in sampling during 1975 through 1980 at a maximum level of 50 ppb. The Nassau County Health Department had determined that Hooker was the only producer and user of vinyl chloride on Long Island. There are four public supply wells

within one mile of the site and more than 24 within three miles. As of April 1979, tests conducted in 60 public supply wells in neighboring water districts did not reveal the presence of vinyl chloride.

The preliminary HRS scores for the Hooker site are as follows: Migration Score (S_M) = 51; Direct Contact (S_{DC}) = 0. Ground water contamination has been well documented, and a large population is considered to be at risk.

Although existing data are adequate for purposes of generating HRS scores, a Phase II program of borings and soil sampling is recommended for purposes of evaluating options and costs for remedial action. The estimated cost of these Phase II activities is $27,400.

HOOKER CHEMICAL AND PLASTICS SITE
(CURRENTLY RUCO POLYMER CORPORATION)

The former Hooker Chemical and Plastics Site (NY I.D. No. 130004, EPA I.D. No. NYD002920312), now owned by Ruco Polymer Corporation, is located on New South Road, Hicksville, Nassau County, New York. The site is an active plastics and synthetics plant located on 72 acres in an industrial park area of Hicksville. The surrounding area is highly urbanized. Major products are and have been polyesters, PVC compounds, polyurethanes, and plasticizers. Onsite disposal through 1975 had been of liquid wastes containing vinyl chloride, trichloroethylene, glycols, organic acids, and many others discharged to sumps. Allegations of improper waste disposal activities have been numerous, and contamination of industrial wells at the neighboring Grumman Aerospace Corporation by vinyl chloride has been documented. Several public supply wells in the area may be threatened. The plant is apparently the only producer and user of vinyl chloride on Long Island.

1 MILE

000 5000 6000 7000 FEET

1 KILOMETER

ROAD CLASSIFICATION

Heavy-duty ——— Light-duty ———

Medium-duty ——— Unimproved ———

State Route

NEW YORK

QUADRANGLE LOCATION

"EET
OF 1929
.d IS MEAN LOW WATER
TUMS IS VARIABLE
LINE OF MEAN HIGH WATER
MATELY 7.3 FEET

P ACCURACY STANDARDS
RESTON, VIRGINIA 22092
MBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1979

HICKSVILLE, N

N4045—W7330/7.

1967
PHOTOREVISED 1

HRC 001 0007

Hooker / RUCO

federal register

Friday
July 16, 1982

Part V

Environmental Protection Agency

National Oil and Hazardous Substances Contingency Plan

C2NY052

Facility name: Hooker Chemical + Plastics / Ruco Polymer Corp

Location: Hicksville Town of Oyster Bay, Nassau County, New York

EPA Region: II

Person(s) in charge of the facility: Joseph Ruffing, President
Bradley Harrison, Manager for Environmental Affairs

Name of Reviewer: ECOLOGICAL ANALYSTS, INC. Date: 10 JUNE 1983

General description of the facility:

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

The Ruco Polymer Corporation formerly owned by Hooker Chemical and Plastics manufactures plastics and synthetic organic compounds. The plant discharges to groundwater via recharge basins, and has been responsible for contamination of nearby wells

Scores: S_M = 51.13 (S_{gw} = 88.46 S_{sw} = 0 S_a = 0)

S_{FE} = 0

S_{DC} = 0

FIGURE 1
HRS COVER SHEET

BILLING CODE 6560-50-C

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			N/A	15	
3 Containment	0 1 2 3	1	N/A	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			23	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	40	40	
Total Targets Score			49	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			50,715	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =	88.46		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 (1) 2 3	2	2	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			7	15	
3 Containment	(0) 1 2 3	1	0	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			23	26	
5 Targets					4.5
Surface Water Use	(0) 1 2 3	3	0	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			0	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			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	0		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5 If line 1 is 45, then proceed to line 2					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	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		N/A	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		N/A	39	
4 Multiply 1 x 2 x 3			0	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =	0		

FIGURE 9
AIR ROUTE WORK SHEET

BILLING CODE 6560-50-C

HRC 001 0012

four-mile radius as well as transients such as workers in factories, offices, restaurants, motels, or students. It excludes travelers passing through the area. If aerial photography is used in making the count, assume 3.6 individuals per dwelling unit. Select the highest value for this rating factor as follows:

DISTANCE TO POPULATION FROM HAZARDOUS SUBSTANCE

Population	0–¼ miles	¼–½ mile	½–1 mile	1–2 miles
0	0	0	0	0
1 to 100	9	12	15	18
101 to 1,000	12	15	18	21
1,001 to 3,000	15	18	21	24
3,001 to 10,000	18	21	24	27
More than 10,000	21	24	27	30

Distance to sensitive environment is an indicator of the likelihood that a region that contains important biological resources or that is a fragile natural setting would suffer serious damage if hazardous substances were to be released from the facility. Assign a value from Table 10.

Land use indicates the nature and level of human activity in the vicinity of a facility. Assign highest applicable value from Table 13.

6.0 Computing the Migration Hazard Mode Score, S_M

To compute S_M, complete the work sheet (Figure 10) using the values of S_{gw}, S_{sw}, and S_a obtained from the previous sections.

7.0 Fire and Explosion

Compute a score for the fire and explosion hazard mode, S_{fe}, when either a state or local fire marshall has certified that the facility presents a significant fire or explosion threat to the public or to sensitive environments or there is a demonstrated fire and explosion threat based on field observations (e.g., combustible gas indicator readings). Document the threat.

7.1 Containment. Containment is an indicator of the measures that have been taken to minimize or prevent hazardous substances at the facility from catching fire or exploding. Normally it will be given a value of 3 on the work sheet (Figure 11). If no hazardous substances that are individually ignitable or explosive are present and those that may be hazardous in combination are segregated and isolated so that they cannot come together to form incompatible mixtures, assign this factor a value of 1.

7.2 Waste Characteristics. Direct evidence of ignitability or explosion potential may exist in the form of measurements with appropriate instruments. If so, assign this factor a value of 3; if not, assign a value of 0.

TABLE 13.—VALUES FOR LAND USE (AIR ROUTE)

Assigned value—	0	1	2	3
Distance to Commercial-Industrial	>1 mile	½ to 1 mile	¼ to ½ mile	<¼ mile.
Distance to National/State Parks, Forests, Wildlife Reserves, and Residential Areas.	>2 miles	1 to 2 miles	½ to 1 mile	<½ mile.
Distance to Agricultural Lands (in Production within 5 years):				
Ag land	>1 mile	½ to 1 mile	¼ to ½ mile	<½ mile.
Prime Ag Land [1]	>2 miles	1 to 2 miles	½ to 1 mile	<½ mile.
Distance to Historic/Landmark Sites (National Register of Historic Places and National Natural Landmarks).				Within view of site or if site is subject to significant impacts.

[1] Defined in the Code of Federal Regulations, 7 CFR 657.5, 1981.

	S	S^2
Groundwater Route Score (S_{gw})	28.46	7825.17
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		88.46
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		51.13

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1	0	3	8.2
3 Containment	0 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	NA	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			N/A	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 0			

FIGURE 12
DIRECT CONTACT WORK SHEET

BILLING CODE 6560-50-C

June 28, 1982

CONYC52

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. 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 that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Ruco Polymer Corporation

LOCATION: New South Rd., Hicksville, NY

HRC 001 0015

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):
Vinyl Chloride
1,1,2 Trichloroethylene
Tetrachloroethylene
Phenols

(See Sections 6 + 7)

Rationale for attributing the contaminants to the facility:
Facility discharged liquid wastes to groundwater containing these wastes and others for a number of years. Vinyl chloride

(See Section 6)

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:
Upper Glacial Aquifer : sand and gravel deposits
Magothy Aquifer : sand deposits

(See Section 7)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:
Approx. 60 ft

(See Section 7)

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

Net Precipitation

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

45

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

30

Net precipitation (subtract the above figures):

15 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sandy soil associated with recent glacial deposits (See Section 7)

Permeability associated with soil type:

Very high

Physical State

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

Liquid

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

No waste containment

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:	Toxicity	Persistence	Score
Vinyl Chloride	3	3	18
1, 1, 2 Trichloroethylene	2	2	12
Tetrachloroethylene	2	2	15
Phenols	3	1	12

Compound with highest score:

Vinyl Chloride

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):

80,000 gallons (See Section 6)

Basis of estimating and/or computing waste quantity:

$(2 \times 10^4$ gal/yr) (20 yrs) (0.2 % conc.) = 80,000 (1600 drums)

Score = 5

* * *

5 TARGETS

Ground Water Use

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

Aquifer serves as sole source aquifer for Nassau County.

Numerous public and private water supply wells within 3 miles

Distance to Nearest Well

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

Grumman Aerospace Corporation Wells (Industrial and Drinking)

Hicksville water district wells.

Distance to above well or building:

< 1,000' to Grumman Wells

< 2,000' to Hicksville public supply wells

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:

Several Municipal, industrial wells

Total population on public supplies is >100,000 (NYSDOH 1982, New York State Atlas of Community Water System Sources)

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):

None Known

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

>100,000 Score = 5

FRC 001 0019

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

N/A None (contaminants only detected in standing water within the basins, site drainage is routed to the basins also).

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

N/A Closed basin

Name/description of nearest downslope surface water:

N/A Small stream approx 1 mile from site. Not considered to be "downhill" with respect to site

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

N/A

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

N/A

HRC 001 0020

Is the facility completely surrounded by areas of higher elevation?

N.A.

1-Year 24-Hour Rainfall in Inches

N.A. 2.5

Distance to Nearest Downslope Surface Water

N.A. ~ 1 Mile

Physical State of Waste

N.A. Liquid

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Discharged to groundwater, via sump, below-grade.

Method with highest score:

Insofar as wastes are now contained in groundwater (below the land surface) they can be considered to be fully contained with respect to surface water contamination.

HRC 001 0021

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

N.A.

Compound with highest score:

Vinyl chloride

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):

80,000 gals.

Basis of estimating and/or computing waste quantity:

See page 4

* * *

5 TARGETS

Surface Water Use

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

N.A. No surface route identified; nearest water is small stream about 1 mile from site.

Is there tidal influence?

N.A.

Distance to a Sensitive Environment

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

N.A. (None)

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

N.A. (None)

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

N.A. (None)

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:

Zero

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

N.A.

Total population served:

Zero

Name/description of nearest of above water bodies:

N.A.

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

N.A.

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No confirmed release to air

Date and location of detection of contaminants

N.A.

Methods used to detect the contaminants:

N.A.

Rationale for attributing the contaminants to the site:

N.A.

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N.A.

Most incompatible pair of compounds:

N.A.

Toxicity

Most toxic compound:

N.A.

Hazardous Waste Quantity

Total quantity of hazardous waste:

N.A.

Basis of estimating and/or computing waste quantity:

N.A

* * *

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

N.A.

Distance to a Sensitive Environment

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

N.A

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

N.A

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

N.A.

Land Use

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

N.A

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

N.A.

Distance to residential area, if 2 miles or less:

N.A.

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

NA.

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

NA.

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

NA

A

Hooker Site

HRC 001 0028

SCALE 1:250,000

5 0 5 MILES

NORTH

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-12
July, 1981

5.1

Hooker/Ruco

EPA

Potential Hazardous Waste Site

Preliminary Assessment

Preliminary Assessment

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Hooker Chemicals + Plastics Corp.	New South Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Hicksville	NY	11802	Nassau		
09 COORDINATES LATITUDE	**LONGITUDE**				
40 45 ___.__	073 30 ___.__				

10 DIRECTIONS TO SITE (Starting from nearest public road)
From Old Country Rd, turn south on New South Rd.; site is approx. 1/2 mile south.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Ruco Polymer Corporation	New South Road		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Hicksville	NY	11802	(516) 931-8100
07 OPERATOR (If known and different from owner)	**08 STREET (Business, mailing, residential)**		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
	-		( )

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: / / (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / / (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☑ YES ☐ NO DATE 05 / 03 / 83 (MONTH DAY YEAR)

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☑ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): Ecological Analysts, Inc.

02 SITE STATUS (Check one)
☑ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
BEGINNING YEAR _____ ENDING YEAR _____ ☑ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Wastewater containing vinyl chloride, trichloroethylene, glycols, organic acids

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Site is underlain by sole source aquifer; is located in a highly urbanized area.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☑ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)		03 TELEPHONE NUMBER
H. Schaefer L. Sama	Nassau County Department of Health (NCDOH)		(516) 535-2406
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER** / **08 DATE**
			( ) / / (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

HRC 001 0031

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☑ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

- TONS: >300
- CUBIC YARDS:
- NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

- ☑ A. TOXIC
- ☑ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☑ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	Unknown		
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Vinyl Chloride	75-01-4	Discharged to groundwater	Unknown	
SOL	1,1,2 Trichloroethylene	79-01-6	"	"	
SOL	Tetrachloroethylene	127-18-4	"	"	
SOL	1,2 Dichloroethylene	75-25-4	"	"	
SOL	1,1,1 Trichloroethane	156-60-5	"	"	
OCC	Phenol	108-95-2	"	"	
SOL	Vinyl Acetate	N.A.	"	"	
ACD	Trimellitic Acid	"	"	"	
ACD	Phthalic Acid	"	"	"	
ACD	Maleic Acid	"	"	"	
ACD	Adipic Acid	"	"	"	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NCDOH files
NYSDEC files

EPA FORM 2070-12 (7-81)

HRC 001 0032

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYC0029203 12

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☑ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: 1974-?) ☐ POTENTIAL ☑ ALLEGED
04 NARRATIVE DESCRIPTION
Documented groundwater contamination in area is alleged to have originated from on-site disposal of liquid wastes.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
NONE
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: _____
None reported
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
None reported
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: _____
NONE. Site secure
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☑ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☑ ALLEGED
04 NARRATIVE DESCRIPTION
Spill incidents have been numerous, several documented, high potential for contamination.

01 ☑ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: > 100,000
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☑ ALLEGED
04 NARRATIVE DESCRIPTION
Documented closings of public and private water supply wells due to alleged contamination from on-site disposal.

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
Not evaluated
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
Not evaluated
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
None reported

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Not evaluated

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
None reported

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Not reported

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No evidence in available records.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
Several cases of buried wastes on-site that could contribute to groundwater contamination

III. TOTAL POPULATION POTENTIALLY AFFECTED: >100,000

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
NCDOH files
NYSDEC files

EPA FORM 2070-12 (7-81)

FRC 001 0034

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-13
July, 1981

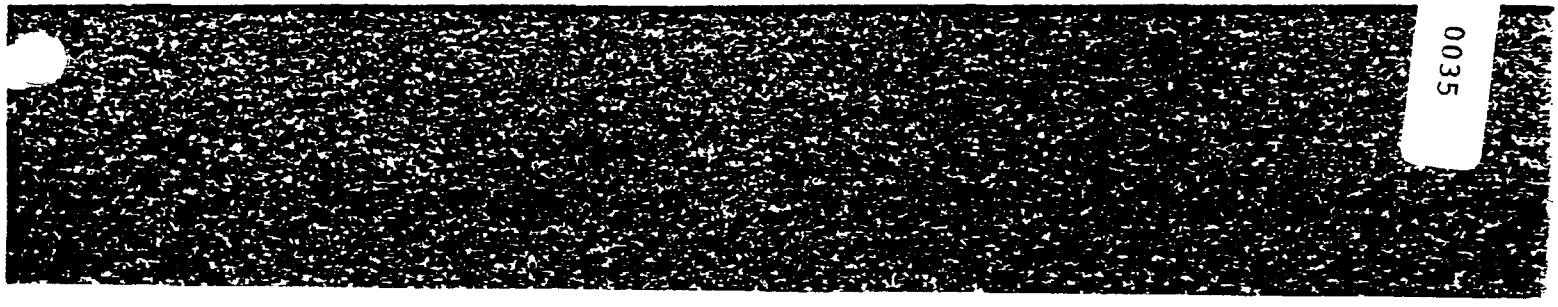
5.2

Hooker / Ruco

EPA

Potential Hazardous Waste Site

Site Inspection Report



Site Inspection Report

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Hooker Chemicals & Plastics Corp.	New South Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Hicksville	NY	11802	Nassau		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
40 45 --.-	073 32 --.-	☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
05 03 83 (MONTH DAY YEAR)	☑ ACTIVE ☐ INACTIVE	1 / Present (BEGINNING YEAR / ENDING YEAR) ☑ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☑ F. STATE CONTRACTOR Ecological Analysts, Inc. (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
J. Charles Brandmeir, Ph.D.	Senior Scientist	Ecological Analysts, Inc.	(301) 771-4455
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Robert H. Seela	Geologist	Ecological Analysts, Inc.	(301) 771-4455
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
J. Bradley Harrison	Manager for Environmental Affairs	Ruco Polymer Corp. New South Rd. Hicksville NY	(516) 931-8100
Joseph Ruffing	President, Ruco	New South Rd. Hicksville NY	(516) 931-8100
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☑ PERMISSION ☐ WARRANT	1000 - 1130	Overcast

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
H. Schaefer, L. Sama	Nassau County Department of Health	(516) 535-2401

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
				/ / (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☑ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☑ A. TOXIC
- ☑ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☑ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	Unknown		
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Vinyl Chloride	75-01-4	Discharge to groundwater	Unknown	
SOL	1,1,2 Trichloroethylene	79-01-6	"	"	
SOL	Tetrachloroethylene	127-18-4	"	"	
SOL	1,2 Dichloroethylene	75-25-4	"	"	
SOL	1,1,1 Trichloroethane	156-60-5	"	"	
OCC	Phenols	108-95-2	"	"	
ACD	Trimethyl Acid	N.A.	"	"	
ACD	Phthalic Acid	N.A.	"	"	
ACD	Maleic Acid	110-16-7	"	"	
ACD	Adipic Acid	124-04-9	"	"	
OCC	Vinyl Acetate	108-05-4	"	"	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Nassau County Department of Health (NCDH) files

New York State Department of Environmental Conservation (NYS DEC) files

EPA FORM 2070-13(7-81)

HPC 001 0038

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYD002920312

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: >100,000
02 ☒ OBSERVED (DATE: 1979-5) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION
Documented groundwater contamination is alleged to have originated from on-site disposal of liquid wastes.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: None reported or expected.
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Disposal was via sumps; site drainage also routed to sumps.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: Not reported
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: Not reported
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: None; site secure
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: (Acres)
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION
Spill incidents have been numerous, several documented high potential for contamination.

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: >100,000
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION
Documented closings of public and private water supply wells due to alleged contamination from on-site disposal.

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: Not evaluated
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: Not evaluated
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: NYD002920312

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
None reported

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Not evaluated

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
Not reported

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Not reported

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Not reported

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No evidence in available files

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: >100,000

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
NCDOH Files
NYSDEC Files

FRC 001 0040

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☑ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☑ G. STATE (Specify)	NY-0104388			SPDES permit for current discharge
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☑ I. OTHER (Specify) Recharge Basins		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER _____ (Specify)

05 OTHER

- ☑ A. BUILDINGS ON SITE

06 AREA OF SITE

72 (Acres)

07 COMMENTS

Disposal sites are 4 recharge basins (sand sumps) used for groundwater discharge of liquid wastes. Quantities discharged are unknown.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

No containment of wastes

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☑ NO

02 COMMENTS

Access to site is assumed to be controlled by surveillance and fencing.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

NCDH files

NYSDEC files

HRC 001 0041

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. ☐	B. ☑	A. ☐	B. ☑	C. ☐	A. _____ (mi)
NON-COMMUNITY	C. ☐	D. ☑	D. ☐	E. ☑	F. ☐	B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☑ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER	03 DISTANCE TO NEAREST DRINKING WATER WELL
>100,000	0.3 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
65 (ft)	S-SE	65 (ft)	_____ (gpd)	☑ YES ☐ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Closest wells are industrial and potable wells owned by Grumman Corp. Within 2000 ft, public supply wells occur. There are > 24 public supply wells within 3 miles serving > 100,000 population.

10 RECHARGE AREA	COMMENTS	11 DISCHARGE AREA	COMMENTS
☑ YES ☐ NO	Site is located near groundwater divide on Long Island	☐ YES ☑ NO	

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
NONE Potential Affected	☐	_____ (mi)
	☐	_____ (mi)
	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	02 DISTANCE TO NEAREST POPULATION
A. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. >100,000 NO. OF PERSONS	0 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
Numerous, dense suburban area	0.02 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Site is located in an industrial park, surrounding area is highly urbanized.

EPA FORM 2070-13 (7-81)

HRC 001 0042

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
1000 (ft)	Unknown (ft)	Unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
15.0 (in)	2.5 (in)	1 %	S	1 %

09 FLOOD POTENTIAL

SITE IS IN _____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. 73 (mi)	B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

NONE _____ (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. 0 (mi)	B. 0.2 (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is generally flat, as is surrounding topography

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NCDH files

NYS DEC files

HRC 001 0043

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYD002923312

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	0		
SURFACE WATER	0		
WASTE	0		
AIR	0		
RUNOFF	0		
SPILL	0		
SOIL	0		
VEGETATION	0		
OTHER	0		

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
NONE	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☑ GROUND ☐ AERIAL

02 IN CUSTODY OF Ecological Analysts Inc
(Name of organization or individual)

03 MAPS ☑ YES ☐ NO

04 LOCATION OF MAPS: State and Prop files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYD002920312

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Ruco Polymer Corporation		New South Road		Hicksville	NY	11802

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Hooker Chemical and Plastic		New South Road		Hicksville	NY	11802

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NCDH files
NYSDEC files

EPA FORM 2070-13 (7-81)

HRC 001 0045

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYD002920312

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Ruco Polymer Corporation		New South Road		Hicksville	NY	11802

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Hooker Chemicals + Plastics		New South Road		Hicksville	NY	11802

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

HRC 001 0046

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD002920312

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Ruco Polymer Corp.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
New South Road	

05 CITY	06 STATE	07 ZIP CODE
Hicksville	NY	

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

HRC 001 0047

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYD002920312

II. PAST RESPONSE ACTIVITIES

01 ☑ A. WATER SUPPLY CLOSED 02 DATE ______ 03 AGENCY NCDH
04 DESCRIPTION
Closing of public and private water supply wells is documented and readily available

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ L. ENCAPSULATION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	NYD 002920312

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NCDH files
NYSDEC files

EPA FORM 2070-13 (7-81)

HRC 001 0049

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	NYD002920312

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☑ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

State authorities are currently involved with Hooker/Ruco in negotiating to begin remedial actions at site.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC files

EPA FORM 2070-13 (7-81)

5.3 SITE INSPECTION SUMMARY

On 3 May 1983, Charles Baummer and Robert H. Seela conducted a preliminary site investigation of the Ruco Polymer Corporation site located in Hicksville, New York. Mr. Howard Shaefer of the Nassau County Department of Health (NCDH) accompanied them to the site, where they were met by Mr. Ted Sanford of the New York Department of Environmental Conservation (DEC).

Ruco officials present included Dr. Bradley Harrison, plant engineer, and Mr. Joe Ruffing, President of Ruco. Initially, the purpose of this visit was discussed by all. Mr. Ruffing and Dr. Harrison had prepared a response to the DEC letter of 4 April 1983 which they (Ruco) will submit to DEC shortly. Ruco pointed out that their plant is operating under a SPDES permit for ground water discharges and that there have been no violations recently. (Note: Ruco seemed willing to discuss present operations but not past operations.)

After being given hard hats and eye protection, Baummer, Shaefer, Sanford, Harrison, Ruffing, and Seela began a tour of the site. The purpose of this inspection was to investigate the sumps, or recharge basins, where past disposal activities had taken place, and to note any other evidence of past activities.

The plant is fenced and there appears to be surveillance. The sumps in question are pits dug in exposed sand (site is only partially covered by concrete) where liquid wastes were previously disposed (estimated 1956-1975). The sumps were variable in size, but were generally circular, 40-50 feet diameter, and approximately 12-20 feet deep, and are surrounded by a 3 foot chain link fence. Exposed in the sumps were one or two PVC pipes. Ruco was quick to point out that there are no discharges in these sumps, nor any since 1975. When queried about what exactly had been discharged into these sumps, Dr. Harrison responded: (a) that he would have to check his records to be positive, (b) NCDH should have in their files all pertinent information regarding sumps, and/or (c) that Mr. Schuttler of Occidental Chemicals, Niagara Falls, New York should be contacted for additional information on past activities.

There is one active sump where waste water (primarily 30,000 gallons/day of boiler blowdown) is discharged under the provisions of New York SPDES permit. Because the plant is still manufacturing plastics, there is general activity occuring at the site. Ruco repeated that all activities were permitted and that no violations have occured lately. No obvious or gross violations were apparent.

Also, it appears possible that storm runoff on the site could pick up any spills and become contaminated. It was noted that Ruco intends (as required) to hook up into the Nassau County sewer system. At present, all sanitary and laboratory waste water is conveyed to cesspools onsite.

The inspection lasted approximately 45 minutes.

Ruco's response to DEC's letter of 4 April 1983 was received by DEC on 6 May 1983 (Attachment 5.3-1).

Attachment 1

April 28, 1983

Norman H. Nosenchuck, P.E., Director
Division of Solid Waste
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, NY 12233

Dear Mr. Nosenchuck:

In response to your letter of April 4, 1983 (copy attached), we wish to inform you that on February 26, 1982, Ruco Polymer Corporation, an independent and privately held corporation, acquired the facility then owned by the Hooker Chemicals & Plastics Corp., located at New South Road, Hicksville, New York 11802.

Ruco Polymer Corporation has never disposed of hazardous wastes this site.

Since February 26, 1982, the only wastes deposited at the site are those under our NYPDES permit (permit No. NY-0104388):

-- 001 (boiler blowdown), 20,000 gallons/day

-- 002 (sanitary wastes), 2,000 gallons/day

Any questions you have regarding this site prior to February 26, 1982 should be directed to: Mr. Robert J. Schuttler, Director-Environment, Health and Safety; Plastics & Chemical Specialties Group, Occidental Chemical Corporation, 360 Rainbow Blvd. South, Box 728, Niagara Falls, NY 14302.

Very truly yours,

J. Bradley Harrison
Manager for Environmental Affairs

Attachment
CERTIFIED MAIL, RECEIPT
REQUESTED P 390 404 978

JBH:cm/S. 852

6. SITE HISTORY

The Hooker/Ruco site is located in Hicksville, Nassau County, New York. Ruco is an active plastics and synthetics concern whose major products have been polyesters, PVC compounds, polyurethanes, and plasticizers. The firm has been in operation at this location for close to 40 years (1946-present). Currently, the Ruco Polymer Corporation is the sole owner of the site.

Over the years of operation, Hooker/Ruco has employed a large number of waste disposal methods (Attachment 6-1 through 6-3), both onsite and offsite. Onsite disposal of liquid wastes has been through the use of sand sumps. These sumps have been in operation from 1951 to 1975, and received wastewater from PVC, latex, and ester manufacturing processes. There are two main groups of sumps, summarized below:

The Plant 2 PVC (and latex) sumps received approximately 2 million gallons per year of waste water from 1956 to 1975. The primary wastes are 0.1% PVC resin solids, vinyl chloride (600-1,200 ppm), trichloroethylene, and vinyl acetate. In addition, styrene and butadiene was also discharged from latex processing, though the amount is unknown.

The Plant 1 ester sump received waste water containing "considerable" amounts of mixed glycols and alcohols. The waste water also included perchloroethylene, methanol, and organic acids such as adipic, trimellitic, maleic, and phthalic. These sumps were in operation from 1951 to 1975, though the total amounts of waste water discharged are unknown.

Additionally, unknown wastes could enter these sumps due to plant upsets, spills, runoff, etc. Currently, these sumps are still exposed and subject to possible contamination.

A list of Hooker waste disposal products and sump disposal products is presented as Attachments 6-4 and 6-5.

The earliest date of "concern" over waste disposal activities at the Hicksville site is apparently unknown, though local and state authorities have been aware of the firm for a number of years (Attachments 6-6 and 6-7). Much attention was given to the site from 1974 to 1976 as a result of contamination of nearby wells (Attachments 6-8 and 6-9). At this time, the sumps were put out of operation. The cases of well contamination will be summarized in Section 7.3. At this time (1975), documentation of ground water contamination occured, with Hooker/Ruco being the prime suspect. A number of site inspections by state and federal authorities have occurred, as has sampling of soil and ground water at the site. As a result, Hooker/Ruco has been the subject of lengthy negotiations to remedy the situation.

Hooker
1-30-004

8/21/78
M/A 3846-8 JBH:sg

Attachment 6-1
1 of 19

TO: J. Wilkenfeld
D. Guthrie
A. Katona

FROM: J.B. Harrison

WASTE DISPOSAL SITES - HICKSVILLE

In response to your letter of Aug. 11, 1978, I have enclosed the attached survey of waste disposal sites for the Hicksville plant.

It is complete with the exception of maps which I will send to you immediately.

Please call me if you have any further questions.

J.B. Harrison

Enclosures 2

cc: R.J. Abramowitz
H. Dubec
W.J. Wetzel
J.A. Ruffing
P. DeVries (2)
J.B. Harrison

Certified Mail
Receipt Requested

att 6-1
2 of 19

8/18/78
M/A 3846-8 JBH:sg

O: J. Wilkenfeld
D. A. Guthrie
A. Katona

ROM: J.B. Harrison

WASTE DISPOSAL SITES - HICKSVILLE

ntroduction

s per your memorandum of August 11, 1978, I have compiled the ttached information detailing waste disposal sites used by the icksville Plant, both on the property and off the property.

is prepared survey goes back to the beginning of the Hicksville te in 1946 and details our entire position up to and including 78.

r your assistance in following the entire logic of our waste sposal, I have broken the study into five parts:

I. Present Status Summary - This summarizes the way we currently handle wastes in 1978.

II. Present Status Details - This gives the details of the summary of methods covered in I.

III. The History of Various Disposal Methods Used At Hicksville over the Time Period 1946-1978

This section covers twenty-one (21) different modes of waste disposal used at Hicksville over the past 32 years.

IV. Maps - These show the location of the various disposal sites detailed under III.

V. Environmental Communications Between the Hicksville Site & Nassau County, New York State & Federal Governmental Agencies

following Hicksville personnel were instrumental in putting this information together: M. McEachern, A. Heuer, P. DeVries, A. DeDominicis, J.B. Harrison.

J.B. Harrison
Works Manager

Enclosure

8/16/78
M/A 3846-8 JBH:sg.

Att. 6-1
4 of 19

STATUS SUMMARY

Our present waste status at Hicksville is as follows:

A. Major amounts of trash, including chemical waste are sent to the Bethpage municipal landfill.

B. Occasional loads of chemical waste are sent to Rollins Environmental for burning (although we have not sent any since 1977).

C. The entire waste stream from our Ester Plant has been trapped and dead-ended for four (4) years, and burned in our incinerator. The incinerator is licensed by N.Y. State.

D. Certain spillage areas (bulk loading plasticizer, bulk unloading alcohol, waste drum storage areas) pollute the groundwater sumps due to rain water runoff.

E. Certain difficult chemical wastes are presently stored in drums without any easy mode of disposal. We are presently working on a planned engineering method of feeding these into our incinerator as fuel.

F. Some obsolete product inventory containing mercury has been given on consignment to a customer. If he declines to use the material, these mercury wastes will probably return to Hicksville.

PRESENT STATUS DETAILS

A. Major Amounts of Trash, Including Chemical Trash to Bethpage Landfill

(1) We currently send our trash, unsegregated, in 30 yard hoppers to the Bethpage landfill. Our annual trash output to this landfill is 3,900 cubic yards/year. The trash is not segregated at Hicksville and not segregated at the landfill to our knowledge.

We exercise no surveillance at the landfill. In late 1977 this trash stream was defined to N.Y. State in a formal survey carried out by the state in connection with the Federal Waste Control Act (see attached survey).

mination by A DeDominicis on actual count basis for the period through Aug. '78, and then annualized, gives 8280 cubic yards/; , averaging 23 hoppers/month x 12 mo. x 30 yards/hopper = 8280 cubic s estimated to equal 300,000 lbs/year. trash to the Landfill.
, estimating 3000 lbs/hopper
23 hoppers/mo. x 12 mo. x 3000 lbs/hopper = 828,000 lbs/year
say 800,000 lbs/year

BB Hannon

PRESENT STATUS DETAILS

Att 6-1
5/19

A. Major Amounts of Trash, Including Chemical Trash to Bethpage Landfill (cont'd.)

This trash is comprised of the following materials: pallets, cardboard boxes and gaylords, damaged drums containing chemical residues, emptied bags of chemicals, emptied small containers of chemicals, waste filter cake containing plasticizer, spent filter cartridges filled with polyester, rags, paper and wipings containing urethane latex, Speedi-Dri containing chemical residues, waste paper, wood, floor sweeps, metal trash. The following added comments can be made on major constituents in this mixed trash:

Pallets - These are shipping pallets which cannot be sold, used or rebuilt.

Damaged Drums - Nearly all of our used drums are resold to City Barrell (page 14). However, a certain small number are damaged and cannot be resold. These are sent to the Bethpage landfill. They total about 300/year. They may contain organic residues such as polyester, polyurethane, solvents such as DMF, toluene, MEK, isopropanol, urethane latex, isocyanates.

Emptied Bags of Raw Materials - Based on an estimated 4 ounces of raw material/bag going out with the emptied bag in trash, we are currently sending the following amount of chemicals to the dump in the emptied bags:

Trimellitic anhydride (TMA)	10,000 lbs./year
Adipic Acid	2,500 lbs./year
Phthalic anhydride	300 lbs./year
Isophthalic anhydride	1,000 lbs./year
Maleic anhydride	1,000 lbs./year
PVC	400 lbs./year
Kane Ace	7,000 lbs./year

A very recent development at Hicksville involves our going from all bulk (domestic) adipic to a potential 6.0 MM lbs./year of imported French adipic, because of favorable economics. If this goes ahead as we believe, then the amount of adipic acid to the Bethpage landfill will increase to 27,000 lbs./year, based on bag residues.

RESENT STATUS DETAILS

A. Major Amounts of Trash, Including Chemical Trash to Bethpage Landfill (cont'd.)

Waste Filter Cake Containing Plasticizer - Based on our current production of 8.0 MM lbs./year of mixed plasticizers, we put out about 8,000 lbs./week of waste filter cake which is comprised primarily of celite, decolorizing carbon and plasticizer (60% of the weight), plus smaller amounts of spent toluene sulfonic acid catalyst and sodium bicarbonate.

This material is all sent to the Bethpage landfill. Annual waste load of filter cake is 400,000 lbs. This contains 240,000 lbs. of plasticizer, largely 26TM trimellitate plasticizer and DOA adipate plasticizer, but also lesser amounts of phthalate, and maleate plasticizer such as DIBM, DOM.

This introduction of waste plasticizer into the Bethpage landfill (which has been documented in the N.Y. State Waste Survey) is probably the single most significant environmental pollution coming from the Hicksville site. We have done engineering studies on a plasticizer recovery plant, but it is not economically attractive and also does not really satisfy the environmental problems since one source of pollution (solvent) is substituted for another. Probably a better engineered approach would be a solid waste burner with steam-generating potential, but the capital cost would be high.

Wound Filter Cartridges Containing Polyester - Wound cotton filter cartridges are used in our polyester operation to filter the finished product. These cartridges, each with about one lb. of polyester, are sent to the Bethpage landfill. We currently are using 7,600 filter cartridges per year, and are, therefore, sending 7,600 lbs./year of polyester to the landfill.

Speedi-Dri Containing Chemical Residues - We currently buy 33,000 lbs./year of Speedi-Dri. This is used to soak up and clean up chemical spills (plasticizer, 2-ethylhexanol, and other alcohols, polyester, polyurethane, urethane latex, and oil spills). The Speedi-Dri, containing soaked up chemicals, is sent to the Bethpage landfill. We estimate that about one-half part of organic goes out with each one part of Speedi-Dri, meaning that we send about 16,000 lbs./year mixed organics to the landfill with the Speedi-Dri.

Att 6-1
7 of 19

PRESENT STATUS DETAILS

A. Major Amounts of Trash, Including Chemical Trash to Bethpage Landfill (cont'd.)

Floor Sweeps of PVC & PVC Compounds - In our Plant 3 PVC dry blends operation, we accumulate about 500 lbs./day of waste PVC compound in the form of floor sweeps and ventilation dust collector material. This all goes into the trash hoppers, and at our present operating mode, 330 days/year, amounts to 165,000 lbs./year PVC compounds sent to the Bethpage landfill.

Spent Lube Oil - Some 300 gallons/year of spent lube oil is drummed and sent to the Bethpage landfill.

Summary of Current Major Chemical Pollution to Bethpage Landfill

Based on the above, the following table summarizes major current chemical pollution to the Bethpage landfill:

	Lbs./Year
Trimellitic anhydride	10,000 lbs.
Adipic acid	27,000
Phthalic anhydride	300
Isophthalic anhydride	1,000
Maleic anhydride	1,000
PVC	400
Kane Ace	7,000
26TM & other plasticizers	240,000
Polyester	7,600
Speedi-Dri mixed organics	16,000
PVC Compounds (90% PVC by content)	165,000
Spent Lube Oil	3,000
① Total	478,300

B. Occasional Loads of Chemical Waste Sent to Rollins Environmental Services

The total details of our 1971-1977 shipments to Rollins are shown elsewhere under item 4, page 10. Since 1977 we have not used Rollins although we would like to.

C. The Incineration of the Ester Plant Waste Stream

For details on the incineration of our Ester Plant waste stream see item 8 on pages 12,13.

As is discussed under item 8, we have since 1975 completely dead-ended our Ester Plant wastes in concrete pits, and feed these wastes (98% water/2% organic) into an incinerator. At our present operating rate of ester production, 26 MM lbs./year, we are putting out 4,000 gallons/day of waste water (12,780,000 gallons/year) which we are incinerating.

EPC 001 0062

Att. 6-1
8/19

PRESENT STATUS DETAILS

D. Certain Spillage Areas that Pollute the Groundwater Sumps Due to Rain Water Runoff

This is discussed in detail under item 14 on page 15.

E. Certain Difficult Chemical Wastes Presently Stored in Drums

We have approximately 800 drums of difficult chemical wastes stored at the Hicksville site. These include polyester, solution urethanes containing solvents DMF, toluene, MEK, isopropyl alcohol, plasticizer "strips" including perchloroethylene, 2-ethyl-hexanol and other alcohols, urethane latex wastewater containing trace amounts of arsenic (total annual arsenic 0.4 lbs./year) in the form of Durotex, an organoarsenic compound. These represent Pilot Plant made materials, obsolete materials, process waste streams.

For the period 1971-1977, we have most typically sent these materials to Rollins Environmental for destruction (see item 4. on page 10). Recently, with increasing government regulation on waste disposal companies, it has become increasingly difficult for us to send these materials to Rollins, in no small part due to the extremely detailed analytical requirement.

We are, therefore, doing an engineering study on a method for utilizing these materials as feed on the fuel side to our incinerator.

F. Obsolute Product Inventory Containing Mercury

We have 37,414 lbs. of old obsolete product containing Metasol (Merck phenyl mercuric proprionate). The Metasol is 57% mercury by weight. Based on this, the 37,414 lbs. of obsolete product contain 62.5 lbs. of mercury as phenyl mercuric propionate.

The material is now about five (5) years old, and we have been unable to sell it. About nine months ago the material was sent on consignment to a potential customer who has been unable to use it to date. If he continues to be unable to use it, the mercury-containing product will probably return to us.

8/16/78
M/A 3846-8 JBH:sg

Att. 6-1
9/19

THE HISTORY OF VARIOUS DISPOSAL METHODS USED AT HICKSVILLE OVER THE TIME PERIOD 1946-1978

1. SYOSSET MUNICIPAL LANDFILL

The original Town of Oyster Bay dump located in Syosset on Miller Road, was discontinued about 10 years ago as a municipal dump.

Over the period 1946-1968, Hicksville Plant sent any and all solid and liquid waste in drum quantities to this facility. Also tank trucks of Ester Plant wastes from our concrete pits (alcohols, glycols, perchloroethylene, latex waste material and SBR).

Drummed waste would include alcohol/water/perchlor, purified latex, coagulated latex, alum, filter cake, PVC sludge, PVC floor scrapings, and reactor scrapings, vinyl chloride recovery still bottoms, spent lube oils, about 300 gallons/year, and waste PCB therminol waste. Also drums of waste alcohol and glycol "strips" (mixture of 2-ethylhexanol and other similar alcohols, glycols such as ethylene glycol, perchloroethylene). Also some PCB therminol wastes. Solid wastes including 55 gallon drums, 5 gallon pails, pallets, 50 lb. bags, gaylords, cardboard drums, cheesecloth with latex coagulum, emptied PVC bags, emptied TMA bags, emptied adipic bags, emptied phthalic bags, emptied maleic bags. Also drums of waste filter cake (mixture of celite, decolorizing carbon, spent toluene solfonic acid catalyst, bicarbonate, and trimellitate plasticizer). Also pallets, cardboard boxes, vinyl compound floor sweepings. Also PVC sump scrapings (combined PVC, vinyl chloride, vinyl acetate, trichloroethylene, barium and cadmium soap stabilizers. Also organic heels in drums.

Time of use of this municipal dump facility 1946-1968. Use was lower until 1952-1955 and then heavier thereafter. At maximum output we disposed of an estimated 800,000 lbs./year of total solid and liquid waste. This includes 10,000 gallons/year liquid waste (in bulk) from our annual pumpout of our concrete pits. Solids were trucked away by our own licensed dump truck. Liquid wastes (10,000 gallons per year) were hauled away by McGuinnigle.

We discontinued using the Syosset dump in 1968. We use no surveillance or testing on the dump.

We had several complaints from the municipal operations' personnel regarding our materials: messiness from broken SBR latex drums; acidic odors from acetic acid wastes.

There was no segregation at the Syosset landfill of Hooker wastes from other wastes. The landfill personnel did segregate liquid from solid wastes in two general areas of the dump.

Att 6-1
10/19

BETHPAGE MUNICIPAL LANDFILL

Used by Hooker plant since 1968 for disposal of our liquid and solid wastes including: drums of waste filter cake (mixture of celite, decolorizing carbon, spent toluene solfonic acid catalyst, bicarbonate, trimellitate plasticizer, traces of free 2-ethylhexanol); drums of solution urethane wastes (urethane polymer, solvents such as toluene, DMF, MEK isopropyl alcohol); waste alcohol and glycol "strips" (mixture of 2-ethylhexanol and other similar alcohols, glycols such as ethylene glycol, perchloroethylene). Also some PCB therminol wastes, urethane latex waste water. Also solid waste such as emptied TMA bags, emptied adipic bags, emptied phthalic bags, thousands of wound cartridge filter elements filled with polyester. Also pallets, PVC floor sweeps, pallets, cardboard boxes, vinyl compound floor sweepings, PVC sump scrapings (containing PVC, vinyl chloride, vinyl acetate, trichloroethylene, barium and cadmium soap stabilizers), drums, urethane latex coagulum, TPU waste, waste organic heels in drums including polyester, solution urethane, monoester. Also spent lube oils (300 gallons/year).

Time of use 1968-1978. At maximum use (1978) we are putting out an estimated 1,600,000 lbs. per year mixed wastes, solid + liquid, into the Bethpage municipal landfill.

No segregation at this municipal dump. No surveillance by Hooker. A few complaints some years ago regarding breaking drums and spraying bulldozer operators. Also some complaints regarding trucker leaving a liquid trail several years ago on a public street.

3. BRENTWOOD LANDFILL

Commencing in 1973 the Bethpage municipal landfill would no longer take bulk loads of annual solid waste scrapings from cleanouts of our PVC waste sand sumps, and our ester plant sand sumps because of odors.

Therefore for two years, 1973 and 1974 we trucked these annual scrapings to a (private ?) landfill in Brentwood. Annual volume was 200 cubic yards consisting of gravel containing PVC and gravel saturated with trimellitate plasticizer and 2-ethylhexanol and other alcohols.

The truckers were Funfgeld and also Certified. We have no real knowledge of the Brentwood site. We have had no complaints.

4. ROLLINS ENVIRONMENTAL SERVICES, Logan Township, N.J.

Commencing in 1971 when local disposal of liquid organic wastes became difficult on Long Island, we began sending truckloads of waste to Rollins Environmental for disposal.

We shipped 187,000 gallons of mixed wastes (perchloroethylene, 2-ethyl-hexanol and other alcohols, glycols such as diethylene glycol, solution urethane waste and sludge, solvents such as DMF, toluene, MEK, isopropyl alcohol, xylene, some plasticizer) over the period 1971-1977.

Since 1977 we have not used Rollins Environmental although we would like to.

The following table details our total shipments to Rollins since 1971, for disposal:

Acrylonitrile waste	5,271 gallons
Ester waste	131,780 gallons
Urethane waste (bulk)	40,570 gallons
Urethane waste (drums)	4,895 gallons
Metals waste (barium, cadmium, zinc, tin, lead) in drums 1,800 lbs.	
SBR latex TK 10 rinse	4,800 gallons
Empty MOCA Fiber drums	286 containers
Cesspool Sludge & #6 Oil	5,000 gallons
TOTALS	187,371 gallons
	89 drums
	268 fiber containers
	1,800 lbs. mixed metal waste

5. DRUMCO SERVICE CO., Philadelphia, Pa.

In 1975 on one occasion only, we sent 80 drums of urethane waste (urethane polymer, DMF, toluene, MEK, isopropyl alcohol) to Drumco Service Co. for disposal. Drumco buried the drums on a New Jersey private landfill located at an unknown site. We have not dealt with them further since. The landfill site was licensed by the State of New Jersey, and we had all proper papers, insurance, etc.

Att 6-1
12 of 19

5. CHEM-TROL, Model City, N.Y.

One load of organic wastes, containing an organic mercury compound, was sent in 1974 to Chem-Trol in Model City, N.Y. for disposal.

The waste consisted of 10 drums of waste polyester solids containing some Metasol (phenyl mercuric propionate) and some MOCA. The amount of Metasol was 0.05 lbs. The total mercury content was about 0.028 lbs.

We have had no further dealings with Chem-Trol.

7. PLANT 2 PVC SUMPS (& SBR LATEX SUMPS)

Commencing in 1956 Hicksville Plant went on-stream with a PVC resin facility making both vinyl chloride homopolymer and vinyl chloride/vinyl acetate copolymer. Production rate of this suspension plant was 10.0 MM lbs./year. Waste water from the plant (after centrifuging out the resin) was discharged to sand sumps on the plant property. This disposal method was followed for 19 years until the plant shut down permanently in 1975.

This waste water contained approximately 0.1% PVC resin solids, 600-1,200 ppm vinyl chloride, gelatin, Methocel, stabilizers (barium and cadmium soaps in mineral spirits), trichloroethylene, and considerable vinyl acetate. Gallons of waste water per year were 2,000,000 gallons/year.

The sand sumps were scraped once/year and the scrapings (largely gravel containing resin) were sent to the Syosset, Bethpage, and Brentwood municipal landfills (see 1., 2., 3.).

In the operating 1956-1975 interval, for approximately 15 years, we ran one (and occasionally two) reactors on styrene-butadiene latex (SBR latex). In the latex processing, a vacuum stripping operation gave a waste water containing some styrene condensate (and little butadiene). Styrene volume unknown. Also occasionally rosin acid soaps got into the discharge sand sumps due to plant upset situation.

These PVC and SBR sand sumps have been inactive since 1975. No regular surveillance of these sand sumps. However, sub-surface soil samples have been taken by us. Also in connection with vinyl chloride U.S. EPA/N.Y. State governmental regulations and restrictions, both prior to and after the 1975 plant shutdown, numerous governmental sump water samples were taken.

At OSHA instructions we put a permanent cyclone fence around the sumps in 1977.

7. PLANT 2 PVC SUMPS (& SBR LATEX SUMPS) [cont'd.]

At the time of the concern and the investigation of Long Island groundwaters contaminated by chlorinated hydrocarbons (1976-1977, and to date), the Hicksville Hooker Plant was publicized by the government, by newspapers, by citizens, and by Grumman as being a prime pollution source of cancer-causing chlorinated hydrocarbons to the Long Island groundwater.

Earlier (in 1970-1974) there took place much dialogue between Hooker Hicksville personnel and Nassau County/N.Y. State/and federal pollution control personnel regarding achieving planned compliance with anticipated governmental regulations.

8. PLANT 1 ESTER PLANT SUMP

Commencing in 1951 we put on line the first of our four (4) ester reactors, and began making phthalate and adipate plasticizers. Over the years three (3) more reactors were added, and we also began to make sizable quantities of trimellitate plasticizers, maleate esters, fumarate esters, and more recently many polyesters. Also caprylates and pelargonates were made.

The esterification process generates a waste water stream that contains considerable amounts (typically 1-10%) of mixed glycols and alcohols. The water waste stream also contains perchloroethylene, at times methanol, and also organic acids such as adipic, trimellitic, phthalic, isophthalic.

The ester production over the period 1951-1978 gradually increased from 5 million lbs./year to our present volume, 26 million lbs. The waste contaminates in the water increased proportionately. Today we put out about 4,000 gallons waste water per day (= 12,780,000 lbs./year waste water). Based on an estimated average 2% organic content in the waste water, we today put out 250,000 lbs. per year of organic wastes at today's 26 MM lbs./year production rate.

From 1951 until 1974 all these wastes were fed directly into the Ester Plant sand sump. However, since the production levels were much lower, the total discharge of organics per year was proportionately much lower than our present 1978 output of waste.

In the late 1960s and early 1970s considerable dialogue took place between Hicksville Hooker personnel and government (local, state, federal) water pollution personnel on how the Hicksville plant was going to achieve standards, both anticipated and existing.

Att 6
14 of 19

PLANT 1 ESTER PLANT SUMP (cont'd.)

Engineering studies led to the installation of an incineration system whereby we trap all these wastes in dead-ended total concrete tanks and feed the wastes into an incinerator. This incinerator has been approved by governmental personnel, both water and air pollution personnel.

Since early 1975, with only a few minor exceptions, we have burned all our ester waste and sent nothing to the ester sand sump.

Since we have terminated sending ester wastes to the sand sump, after the incinerator went on line, we have had essentially no complaints regarding land pollution from this source. On several occasions we have had upsets where we accidentally overflowed the concrete pits into the sand sumps. This, however, has not happened in the last 1 1/2 years.

Nassau County water pollution personnel have instructed us to go for "zero upsets." We are trying very hard to maintain this.

At the time of the Long Island groundwaters problems (vinyl chloride, chlorinated hydrocarbons, cancer) of 1976-1977, the newspapers mentioned Hooker Plant practice (prior to 1974) of dumping ester wastes into the ground. Also over the period 1971-1974 Grumman on several occasions contacted Nassau County water authorities suggesting that the Hooker Plant (via Plant 2 PVC sump or via Plant 1 ester sump) was contaminating a Grumman well.

We have had a few complaints on smoke eminating from the incinerator stack. We received one citation from Nassau County air pollution personnel for smoke from the incinerator. The local fire department has received calls that may relate to incinerator odors. Plant personnel strive very hard to run the incinerator in a clean-burning manner, and we are putting in modifications to give cleaner burning.

We have regular personnel assigned to the incinerator operation to assure good incinerator performance.

Att 6-1
15 of 19

9. ATLANTIC OCEAN

Commencing in 1969, the Bethpage landfill would no longer accept our bulk liquid wastes from our annual pumping out of the Ester Plant concrete settling pits. This material, 10,000 gallons/year, consisted of perchloroethylene, 2-ethylhexanol, other esterification alcohols, trimellitate plasticizers, adipic acid, phthalic acid, trimellitic acid, polyesters.

We, in 1969 and 1970 disposed of the annual 10,000 gallons by having McGuinnigle Cesspool Cleaners take the material to Island Park Liquid Waste Disposal Company, Island Park, N.Y. who barged it out into the Atlantic Ocean and dropped it overboard.

This was terminated in 1971 by the Army Corp of Engineers who took a sample and rejected our truck.

Since 1971 we have disposed of this waste by (1) shipping it to Rollins Environmental Services, or (2) in one year [1976] we drummed a small portion of the waste, 6-8 drums, and sent it to the Bethpage landfill.

10. CITY BARREL COMPANY

Since the early 1960s, we have sold used drums containing organic waste residues to City Barrel Company, Brooklyn, N.Y. The residues in the drums include TPU, solution urethane, isocyanates, DMF, toluene, polyester, plasticizer.

Currently we sell City Barrel 3,000 drums/year. City Barrel in turn sells the drums to drum reconditioners. We believe both burning and washing is used in the reprocessing.

We have had no complaints on this operation.

11. THREE (3) BURIED LATEX STORAGE TANKS

Latex storage tanks (Hicksville tanks 8, 9,10) contained solidified latex, and could no longer be used.

In 1974 we rigged the tanks out of Plant 1 and buried them on the Hicksville property (see map) between the parking lot and the railroad right-of-way. The tanks were filled with sand and covered.

12. OLD BURIED STYRENE TANK

In 1970 a 10,000 gallon outdoor storage tank of styrene (nearly full) polymerized to a solid mass. After the reaction cooled, the tank was completely solidified with polystyrene. A rigger was brought in and the tank was trucked away by Rice Trucking and sent to the Brentwood (private ?) landfill.

13. TWO (2) BURIED LATEX TANK TRAILERS

In the Hicksville styrene-butadiene latex operation, the SBR latex was moved by trailer from Plant 2 where it was made, to Plant 1 where it was concentrated. In time the trailer would get heavy internal encrustations of solid latex, and, therefore, the trucks would be discarded.

In approximately 1962 we buried a trailer on our property between the Plant 2 solvent tank farm and the PVC catalyst cold room (see map).

A second truck, we believe, was shipped off site for disposal at some later date to unknown location.

14. HICKSVILLE PLANT SITE SPILLAGE (ESTER TANK FARM AREA; WEST REAR PLANT 1)

Ester Tank Farm Area

Over the period 1951-1978 that the Ester Plant has operated, the bulk truck loading and unloading areas (finished plasticizer and raw material alcohol) has, due to minor drippings and minor leakage (blowing of lines from trucks, also blowing of plant bulk lines) contaminated the ground surface with plasticizer, alcohol, and also SBR latex. Also occasional tank overflows. The area was not concreted, and not diked, and chronic rain water leaching pollutes to the back sump (see map).

Recently we have concreted the bulk loading area to improve this situation as a spill-control measure.

West Rear Plant 1

A directly similar situation exists in the west rear of Plant 1 where bulk trucks of plasticizer are loaded. Minor drippings and spillage, and air blowing of lines has saturated the ground with plasticizer. Chronic water leaching pollutes to the back sumps. To date we have not concreted this area.

Att. 6-1
17 of 19

15. HICKSVILLE PLANT SITE SPILLAGE (PILOT PLANT PCB THERMINOL SYSTEM ERUPTIONS)

The Hicksville Pilot Plant therminol system used PCB [illegible] converted to therminol 66. The therminol system was thermistor controlled we eruptions out a relief pipe occurred periodically. The eruptions flowed down the side of the building soaking a small area of land approximately 6' X 6'. We no longer use PCBs in this system, or in any therminol system. We have paved over the contaminated area.

16. HICKSVILLE PLANT SITE SPILLAGE (OUTDOOR & CORRODING DRUM STORAGE AREA - WASTE FILTER CAKE; SOLUTION URETHANE WASTES; ESTER WASTE) BEHIND PLANT 2

Waste drums of organic (including 2-ethylhexanol, other alcohols, perchloroethylene, solution urethane, solvents such as DMF, toluene, MEK, isopropyl alcohol, waste plasticizer, waste polyester) and also many waste drums of filter cake up to many hundreds of drums have been stored outdoors in areas both south and north of Plant 2 (see map). Particularly the south area was the worst one. The drums were stored there for long periods of time until they were disposed of by shipping to Rollins Environmental or to the Bethpage landfill. Some drums were sent to Swope Company for plasticizer recovery.

On this long standing, numerous drums perforated, and the organics contaminated the ground. The contamination is still there, and rain water runoff chronically contaminates the water in the Pilot Plant sump.

17. HICKSVILLE PLANT SPILLAGE (TOWER WATER BLOW DOWN & BOILER BLOW DOWN)

Hicksville tower water system and main boiler system both have N. Y. State approved "blow downs" (i.e. water purgings). The blow down flows to the Pilot Plant sump.

These blow downs total 10,800 gallons/day (3,600,000 gallons/year) and contain approved tower and boiler treatment chemicals including (silicate, sodium hydroxide, hexametaphosphate, sodium salt of nitrilotriacetic acid, sodium lignosulfate, polyacrilate, phosphonate, zinc sulfate, Derma Brown G dye, diethylaminoethanol, hydrazine, sodium sulfite, disodium alginate, minimal sodium salt of pentachlorophenol.

The first cooling tower went on line in 1956, the second in 1960. From 1956 until about 1968 potassium dichromate was used as the standard anti-algae additive to the cooling tower water. Therefore, dichromate was discharged to the Pilot Plant sump in the tower water "blow down" for this 12 year period. With the governmental regulatory pressure on dichromate in the late 60s, we switched to other tower water treatment chemicals.

Att 6-1
18 of 19

18. <u>ESTER FILTER CAKE RECOVERY OPERATION AT SWOPE COMPANY</u>

From the early 1950s until 1966, we sent waste plasticizer (celite, [illegible] in drums to Swope Company, New Jersey for recovery [illegible]alyst, plasticizer) from the filter cake. The process was a solvent extraction and strip. We bought back the recovered plasticizer.

We were sending 100-200 drums per year to them. This was discontinued in 1966, when the plasticizer recovery operation became unprofitable.

We have no knowledge of what Swope did with their process waste.

19. <u>HICKSVILLE SPENT LUBE OILS</u>

We collect about 300 gallons/year spent lube oils. These are disposed of in the Bethpage landfill.

20. <u>HICKSVILLE SPENT CAUSTIC FROM RESIN PLANT CAUSTIC SCRUBBERS</u>

In the Plant 2 PVC and SBR latex production operation (1956-1975) caustic scrubbers (15% sodium hydroxide) were employed to scrub out phenolic inhibitors (such as TBC, phenol) received in the vinyl chloride and butadiene raw materials. Also the scrubbers were used to scrub out phenolic inhibitors added on site to recovered vinyl chloride.

Periodically the 15% caustic would become heavily loaded with phenolic sodium salts, and the scrubber liquid would have to be discarded. This was drummed off and hauled away. Disposal site not known.

Annual volume of scrubber liquid disposal was 4,800 gallons/year.

21. <u>DEMINERALIZED WATER RESIN BED REGENERATION PROCESS</u>

During the period 1956-1975 that the Plant 2 PVC and SBR latex processes ran, we used demineralized water, based on running city water through a demineralizer unit.

Regeneration of the resin beds was accomplished by washing the first bed with dilute sulfuric acid or dilute hydrochloric acid. These acidic washes were sent to waste by running them to a sand sump behind Plant 2 (see map). There was also a sodium hydroxide washing of the second bed, and the excess caustic wash was sent to the same sand sump, effecting some neutralization of the acids.

Ar. 6-1
19 of 19

MAPS

The various disposal sites discussed under Section III. are shown in the attached maps.

v. ENVIRONMENTAL COMMUNICATIONS BETWEEN THE HICKSVILLE SITE & NASSAU COUNTY, NEW YORK STATE & FEDERAL GOVERNMENTAL AGENCIES

Since the late 1960s we have had voluminous communications between the Hicksville site and various environmental and health and safety governmental agencies at the County (Nassau), State (New York), and Federal levels. Air pollution, water pollution and more recently solid waste disposal have been covered. Numerous questionnaires and governmental surveys have been filled out and submitted.

The two mainly pertinant to this present report are:

a. P. DeVries/R.J. Abramowitz, 8/10/77, containing the attached application Form "C" for a state pollutant discharge elimination system (SPDES) permit.

Copy of the DeVries/Abramowitz letter plus the Application Form C submitted to New York State will be found as attachment. It should be noted that in this application there are only two water pollution streams:

001 Boiler Room Runoff.
002 Sanitary.

All other pollution streams, previously described in earlier presubmittals of this Form C to N.Y. State have been eliminated by either plant shutdowns (PVC Plant, SBR Latex Plant) or by dead-ending and incinerating the waste stream (ester waste).

We are anticipating N.Y. State approval on these two final remaining streams--001 and 002--as state-approved water pollution sources. We have not, however, received the approval to date.

b. Letter J.E. Iannotti (N.Y. State Dept. Environmental Conservation) to P. DeVries, Nov. 30, 1077 with an attached questionnaire on Hazardous Waste. This questionnaire was prepared by N.Y. State as an initial survey in connection with the Federal Waste Disposal Act. The questionnaire was filled out by R.J. Abramowitz, P. DeVries, J.B. Harrison in the presence of Mr. J. Iannotti. Copy of the completed questionnaire is attached.

H-CONFIDENTIAL

6-2

1/8

8/30/78
M/A 3867-8 JBH:sg

TO: D. Giannotti, 2000 South Post Oak Rd., Suite 1706
Houston, Texas 77056

FROM: J.B. Harrison

IDENTIFICATION OF ENVIRONMENTAL PROBLEMS

In response to D.A. Guthrie's letter of Aug. 21, 1978, "Identification of Environmental Problems," I am writing you the attached report. [Note: this is in addition to my earlier report to you, J.B. Harrison to J. Wilkenfeld, D. Guthrie, A. Katona, 8/21/78, "Waste Disposal Sites - Hicksville."]

The present report covers some further aspects of environmental discharge as well as health and safety. The present report is broken down into thirteen (13) different subject areas:

MOCA
TMA (Trimmellitic Anhydride)
Vinyl Chloride (Acroosteolysis)
Vinyl Chloride (Cancer)
Alcohol & Plasticizer Wastes in Plant 1 Ester Sump
Plant 2 PVC Sumps (& SBR Latex Sump)
Mercury
Long Island Drinking Water Problem (Cancer-Causing Chlorinated Hydrocarbons)
Isocyanates
DMF
Maleic Anhydride
Air Pollution Control
Water Pollution Control

Reference is made in the body of the report to a number of pertinant references which are attached separately at the end of this report.

Please contact me if you have any further questions.

J.B. Harrison
Works Manager

cc: D. Guthrie

Enclosures 19

Certified Mail, Receipt Requested

Att. 6-2
2/8

MOCA

The DuPont chemical MOCA, a substituted aromatic amine [4,4'-Methylene (bis)-2-chloroaniline] has been used for some years as a curing/cross-linking agent in polyurethane manufacture.

Commencing in 1972 we began shipping truckload quantities of polyester containing MOCA to Brown Shoe Company for manufacture of shoes. This was a highly profitable buiness to us, and over a 3-year period, we shipped 4.24 MM lbs. to Brown. In the course of this time we purchased 688,000 lbs. of MOCA in fiber drums.

MOCA was determined by NIOSH to be a carcinogen, and on May 3, 1973 an emergency temporary standard was issued in the Federal Register by the U.S. Department of Labor (A). Numerous reissues of this temporary standard were subsequently published concerning areas such as (closed systems, employee washing, protective clothing, vessel cleaning, waste disposal, cleanup of spills, ventilation).

Ultimately, however, Brown Shoe completely abandoned the MOCA shoe formulation, and we went completely out of MOCA-based formulations in 1974 (see letter J.B. Harrison to Ellis Murphy, 5/3/74, copy (AA) attached).

During the roughly two-year period we used MOCA, the chemical was handled by our personnel in a number of areas (see letter J.B. Harrison to OSHA Area Director, 370 Old Country Road, Garden City, New York, March 5, 1974, copy (B) attached). Plant workers were protected by a number of procedures (restricting the MOCA areas by chain link fences, paper protective suits discarded each day, cartridge masks, protective disposable gloves and booties, special ventilation, special air supply suits for tank entry, cancer warning signs were posted, no smoking/no eating/no drinking signs were posted). In addition, urine analyses on plant personnel were performed by an approved testing laboratory. Logs of work exposure were kept. Reports were made to OSHA. Meetings were held with all union personnel informing them of the hazards of working with MOCA, and the safety program. Federal Register information and other MOCA literature was posted. MOCA wastes were accumulated and sent to approved waste disposal companies (Chemtrol; Rollins Environmental Services) for disposal. We also disposed of MOCA wastes by reacting them with isocyanates such as MDI.

A Compliance Certificate was filed through the Polyurethane Manufacturers Association (see J.B. Harrison to Ellis Murphy, Executive Secretary, Polyurethane Manufacturers Association, 600 South Michigan Avenue, Chicago, Illinois 60605, copy (C) attached).

Despite these stringent control measures, we never achieved total control of the MOCA material in the plant. It was necessary for fiber drums of MOCA to be upended by hand and dumped into a reactor manhole. Here it was mixed into agitated, hot polyester to make the finished product, a MOCA-polyester blend. Despite a specially-made funnel to assist in the dumping, granules and powder of MOCA would collect on the floor of the loading platform. Also, the walls of the blending tank were hot (350° F), and gummy residues of polyester and MOCA gradually built up on the outside of the tank. There may still be residues of MOCA on the outside of the tank today.

The total number of personnel who worked with MOCA in the plant was pr[illegible]ly 30-40, not counting laboratory personnel.

AT. 6-2
3/8

Trimellitic Anhydride (TMA)

For many years at Hicksville we have manufactured trimellitate plasticizers. These are produced by reacting trimellitic anhydride (TMA) with various alcohols, such as 2-ethylhexanol.

Recently NIOSH has put out a bulletin "Current Intelligence Bulletin 21" describing TMA as a chemical it considers hazardous (see R.J. Abramowitz (D) to J.A. Ruffing, March 21, 1978, copy attached, with NIOSH bulletin attached). NIOSH recommends that TMA be handled as an extremely toxic agent in the workplace. That it may result in noncardiac pulmonary edema, immunilogical sensitization and irritation of the pulmonary tract.

In view of past NIOSH/OSHA developments, it would seem very likely that a permanent standard on TMA will be issued in the future.

To date we have not notified our union personnel of the NIOSH warning (see R.J. Abramowitz to G. Dubec, March 29, 1978, copy (E) attached).

We have had extensive discussions with AMOCO, the only domestic supplier of TMA (see for example J.B. Harrison to J.A. Ruffing and M. McEachern "Further Communication on TMA," May 23, 1978, copy (EE) attached.

We are setting up test procedures in our QC Laboratory to enable us, on a regular basis, to test for breathing air exposure to TMA dust. At a recent OSHA inspection by an OSHA hygienist, test samples were taken to determine breathing air exposure (G. Dubec to B. Harrison and M. McEachern 6/2/78, copy (F) attached).

TMA is delivered to us from AMOCO in truckloads of palletized bags (it is not available in bulk). Our operators break the bags and feed the material into a ventilation-protected hopper, from which it is pneumatically conveyed to the process vessel. The operator wears a cartridge mask while breaking bags.

A certain amount of the granular TMA ends up on the floor (due to breaks in bags, kickback from the bag breaker, and dust residue in the emptied bags).

The waste TMA, an estimated 10,000 lbs./year goes to the Bethpage landfill.

The vapors and dust from TMA are irritating, and a few persons cannot walk near the bag-breaking operation without experiencing a prickling sensation of the skin.

We are presently evaluating several alternative ways of fully containing the TMA dust/vapors in our facility. Options include (a) a fully enclosed bag-breaking room, (b) more powerful blower, (c) special waste hopper for bags. We are also considering whether to leave the process where it is, or move it entirely to Plant 2. These alternatives all require capital. A final decision will be made by the end of 1978.

There are other minor spillage and irritation areas in the process equipment. The TMA is pneumatically conveyed to a weigh hopper, and from there dumps via a chute and conveyer system into an open manhole. A certain amount of spillage occurs at the manhole. Also vapors from the manhole.

Vinyl Chloride (Acroosteolysis)

Acroosteolysis was identified as a degenerative disease of the hand bones, particularly the finger tip bones, and probably caused by vinyl chloride, in research work done at the University of Michigan in the early 1970s. The disease was thought to be most pronounced in "resin scrapers" (workers who regularly, and over a long period of time hand scraped the walls of resin kettles).

Hooker was one of the nineteen (19) companies who, through the Manufacturing Chemists Association, sponsored the work at Michigan (see H.J. Magnuson to A.C. Clark to: The Designated Representatives of Companies Supporting the Acroosteolysis Project. Subject: Proposed Discontinuation of Project, Oct. 23, 1973, copy (G) attached).

As part of the monitoring program on employes working in PVC plants, it was recommended that annual hand X-rays be taken. This was done on two occasions at Hicksville, the last time in early 1974. The Hicksville resin plant was shut down permanently, for economic reasons, in 1975.

Vinyl Chloride (Cancer)

In early 1974 OSHA announced an emergency problem, the finding of an expected incidence of liver cancer in persons who had worked in PVC plants and were exposed to vinyl chloride.

There was an immediate issuance of temporary Federal Industrial Standards for workers in plants where they might be exposed to vinyl chloride. Over the next year and a half a flood of Federal OSHA standards were issued and reissued, covering such items as exposure levels, protective clothing, respirators, emergency plans, medical surveillance, records, reports, regulated areas, communication to employees, daily showering, hygiene practices, warning signs, waste disposal, (see for example Federal Register Volume 39, No. 92, 16,896-16,900, copy (H) attached).

During the period of time March 1974, when the vinyl chloride cancer alert first began until May 1975 when the Hicksville resin plant was shut down for economic reasons every effort was made at Hicksville to meet and comply with the growing OSHA and EPA standards. Numerous reports were sent to, and meetings held with, government regulatory personnel, local, state, and federal. The employees were put into protective, disposable clothing, including cannister masks. Engineering improvements were worked on constantly to reduce the levels of vinyl chloride in the work environment. Communications meetings were held with all affected employees. Liver tests and other required medical tests were performed on Hicksville personnel. Vinyl chloride levels were monitored regularly (both 8 hour personnel samples and also area monitoring samples). Cancer warning signs were put up. The production area was run as a regulated area.

Alcohol & Plasticizer Wastes in Plant 1 Ester Sump

The background history of the Plant 1 Ester sump has been detailed in my memorandum to you, J.B. Harrison to J. Wilkenfeld/D. Guthrie/A. Katona, 8/21/78, "Waste Disposal Sites Hicksville," pp. 12, 13.

Since we terminated these wastes going to the sand sump in early 1975, due to our waste incinerator going on line, we have put very little waste into the sump. Despite this a core sample taken a year or two ago just reeked with organics. It is as if the 20-year history of organics going into the ground (2-ethylhexanol, other alcohols, diethylene glycol, ethylene glycol, other glycols, plasticizer, adipic acid, polyester) may remain there for a long time.

Plant 2 PVC Sumps (& SBR Latex Sumps)

I have given you the background detail on the Plant 2 PVC Sumps (& SBR Latex Sumps) in my recent memorandum, J.B. Harrison to J. Wilkenfeld, D. Guthrie, A. Katona, 8/21/78, "Waste Disposal Sites - Hicksville," pp. 11, 12.

These sumps have been "dead" with nothing going in them since the resin plant was shut down in 1975. They do not appear to have organic odors in the sand/gravel. There is a fair amount of white polymer (i.e. PVC and/or SBR latex) buried in with the sand and gravel. A few years ago, at the request of local Nassau County water pollution officials, we dug out one of the pits to some degree to remove some of the polymer. By no means did we get it all, however, and there remains plenty of solid polymer pieces buried in these sumps. Since it is truly a "dead" site, it would appear thus that the site is now pretty innocuous.

Mercury

In my previous memorandum to you, J.B. Harrison to J. Wilkenfeld/D. Guthrie/A. Katona, "Waste Disposal Sites - Hicksville" page 7, I described certain mercury containing wastes and their disposal.

In 1973, 1974 we were producing a mercury containing polyester resin for use in the manufacture of shoes. The mercury compound was phenyl mercuric propionate. It was an extremely irritating (vesicant) powdered material that was added to the polyester resin in an agitated open vessel. Certain of our personnel became sensitized to it and developed weeping-type rashes and had to be removed from the job. All efforts were made (by means of daily disposable protective clothing and ventilation) to protect our personnel by good hygiene practices. Also a spill control agent was used to complex and tie up any spilled mercury compound. Mercury wastes were carefully segregated and ultimately disposed of at Chemtrol.

During the period of manufacture at Hicksville, the personnel received a urine test for mercury. None was detected at a significant level (see Mercury Urine Testing Papers, (III) attached).

Long Island Drinking Water Problem (Cancer-Causing Chlorinated Hydrocarbons)

Commencing in late 1976 a great deal of publicity (newspapers, governmental statements, etc.) was given to the contamination of Grumman Corporation wells, and other Long Island wells by chlorinated hydrocarbons including trichloroethylene, tetrachloroethylene, vinyl chloride, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, and other chlorinated hydrocarbons.

At a widely attended public fact-finding hearing held in Mineola, New York, December 14, 1976 under the auspices of the New York State Assembly Subcommittee on Health, the whole problem of pollution of public and private wells was discussed at a lengthy meeting, chaired by New York State Assemblyman Alan Hevesi. Numerous speakers were heard, from governmental regulatory agencies, from quasi-public environmental groups, and from several corporations. R.J. Abramowitz testified for Hooker (for details of this meeting see R.J. Abramowitz to W.J. Wetzel, Dec. 17, 1976, "Summary of Hearing, N.Y. State Assembly Subcommittee on Health, Mineola, New York," copy (I) attached; also see Bruce L. Harrison to Kenneth A. McGaw, Dec. 15, 1976, "Re: Environmental Protection Agency - Vinyl Chloride, Our File No. 76-679," copy (J) attached).

In the immense amount of publicity given to the Long Island waters problem at that time, the Hooker Hicksville Plant was repeatedly cited in the newspapers, and also in the Subcommittee hearing of 12/17/76 as a prime industrial polluter and the prime source of the chlorinated cancer-causing hydrocarbons. Since the public meeting, however, at which Hooker denied being the prime source of the pollution, a great deal of publicity via the newspapers has been given to the fact that the chlorinated hydrocarbon pollution is much more broadly spread out over Long Island than originally recognized, and that many sources of the chlorinated hydrocarbon pollution exist. A prime source, now given much newspaper publicity, is the widespread use of chlorinated hydrocarbon cesspool cleaners.

The question of the degree of Hooker involvement in pollution to the underground waters was raised as early as the early 1970s (see for example the comments of J. Welsch regarding possible pollution of a Grumman well, J.B. Harrison to A. Katona, 6/22/71, outlining a meeting attended by J. Wilkenfeld, P. DeVries, M. Brown, J.B. Harrison, and J. Welsch, Water Pollution Chief for Nassau County copy (K) attached).

There remains a perhaps unresolved question, namely the claim by the Bethpage Water District that Hooker pollution caused the water district to lose a well (see letter Gustave H. Bernhardt, Chairman, Board of Commissioners, to Hooker Chemicals & Plastics Corp., New South Road, Hicksville, N.Y. 11801, Nov. 22, 1977, copy (L) attached).

Isocyanates

Isocyanates are noted for their toxicity, particularly emphysema-like action, and several have recently been given very low allowable exposure levels by the Department of Labor. I.e. TDI and MDI are now regulated at 20 ppb (ceiling value).

We have used a number of isocyanates (TDI, MDI, IPDI, Hylene W) in the manufacture of our various urethanes, solution urethane, urethane latex, and the recently closed down TPU.

Several years ago we began taking exposure levels of our personnel in the work environment using both personnel sampling devices, and area monitoring devices. We had a few upset situations in which high levels of TDI were registered. However, in almost all cases the exposure recorded has been very, very low (0-10 ppb). We continue to monitor our personnel.

Standard procedures are followed in handling the isocyanates.

Over the years we have had some individuals who became sensitized to TDI to the point where they could not work in the work area. This included plant and laboratory personnel. In these cases we moved the personnel to other work areas.

At a recent OSHA hygienist inspection, the hygienist asked whether we held periodic physical examinations for our personnel who worked in the presence of isocyanates. We informed her that we did not.

DMF (Dimethylformamide)

A considerable amount of DMF is used in our solution urethane manufacture. The product is shipped out in DMF solution. Waste residues of DMF are stored and ultimately sent to Rollins Environmental for incineration.

We have had no problems with DMF exposure other than our Lab Manager who received a permanent damage to the fingernail of one hand due to DMF.

The toxicity of DMF has been recognized by industry for some time. Recently DMF has been implicated as a "fetal toxin" (see J.B. Harrison to R.J. Abramowitz, 6/30/77, copy(M) attached). We have no female plant workers at Hicksville.

DMF is handled at the site in a diked (earthen dike) bulk storage tank. It is received in bulk, transferred to the bulk storage tank, and bulked directly to the process vessel. The final product is drummed out using excellent local ventilation.

Maleic Anhydride

Maleic anhydride is one of the nastiest materials handled at Hicksville. There is no automated feed system used for maleic. It is brought in in bags of granules and dumped directly into the manhole of the reactor by hand. Ventilation is poor, and maleic vapors are highly irritating.

The maleic is used in the manufacture of maleate esters, an old line product at Hicksville. In the processing, the hot maleate esters are run through filter presses, and the maleate vapors at the presses are objectionable.

There is real possibility that the Hicksville Plant will be going out of the maleate business in the future. Our 1979 manufacturing plan does not include maleic manufacture.

Air Pollution Control

At Hicksville our Engineering Department has identified twenty-nine (29) active sources of air contamination (some other formerly active sites have been permanently shut down). For all twenty-nine emission points, formal approval has been received from the State of New York (N.Y. State Dept. of Environmental Conservation.).

Copies of twenty-seven (27) Certificates to Operate Air Contamination Sources are enclosed herewith as part of this report (K). In addition, we have a Notice of Completeness for the last two (2) emission points (O), and we will be receiving Operating Certificates on these two points in the immediate future.

Water Pollution Control

The application for a New York State Pollutant Discharge Elimination System (SPDES) permit has been filed covering two pollution outfalls for the Hicksville site:

- Boiler Room Run-off,
- Sanitary.

There are no other water pollution sources emanating from the Hicksville Plant (other waste waters are taken care of in the incinerator as previously described).

Copies of the permit applications and approval drafts are enclosed (P).

Attachment 6-3
1/4

MEMORANDUM

NASSAU COUNTY DEPARTMENT OF HEALTH

240 Old Country Road - Mineola, New York 11501

To : M.B. Fleisher

Date: October 18, 1979

From : J. Schechter

Subject : Chemical Waste Disposal Practices at Hooker Chemical Corporation - Ruco Division New South Rd., Hicksville, N.Y.

I. Source of Information -
Hooker Chemical Corporation internal memos:
1)"Waste Disposal Sites - Hicksville"
J.B. Harrison to J. Wilkenfeld, D. Guthrie and A. Katona, 8/21/78.
2)"Identification of Environmental Problems", J.B. Harrison to D. Giannotti, 8/30/78.

II. Status of waste disposal practices.

A. Violation of Article 17 of the Environmental Conservation Law of New York State due to the discharge of pollutants to groundwaters at the Hicksville site of Hooker Chemical Corpoartion may have occurred due to:
1) Discharge of wastewater containing pollutants to recharge basins on site.
2) Burial of storage tanks and trailers.
3) Spillage of chemicals at various locations on site. (This assumes the law was in effect during the cognizant time period.) Chemical contamination continues to pollute the groundwater due to rainwater runoff at various locations where the soil is saturated with spilled chemicals.

III. Details of contamination.

A. Discharge of contaminated wastewater.
1) From 1956 through 1975 wastewater from the manufacture of vinyl chloride monomer and vinyl chloride/vinyl acetate copolymer was discharged to recharge basins on site. The wastewater contained

approximately 0.1% PVC resin solids, 600-1200 mg/l vinyl chloride, gelatin, Methocel, barium and cadmium soaps in mineral spirits, trichloroethylene and considerable vinyl acetate. $2X10^6$ gallons per year were discharged.

2) From 1956 - 1975 wastewater from the manufacture of styrene-butadiene (SBR) latex was discharged to recharge basins on site. The wastewater contained styrene condensate, butadiene, and rosin acid soaps. No data on volume discharged is available.

   Solid polymer pieces (PVC and SBR latex) remain buried in the recharge basins.

3) From 1951 through 1974 wastewater from the manufacture of plasticizers, esters and polyesters was discharged to recharge basins on site. The wastewater contained 1 - 10% mixed glycols and alchohols. In addition, it contained perchloroethylene, methanol, adipic acid,trimellitic and phthalic acid and isophthalic acid. It is estmated that 50,000 - 250,000 lbs./year of organic waste were contained in the wastewater discharges based on production rates.

   A core sample taken~1976 from the recharge basin formerly receiving wastewater discharges from the ester manufacturing process"reeked with organics", according to J.B. Harrison.

B. Burial of storage tanks and trailers.
   1) Three storage tanks containing solidified latex were buried on site in 1974.
   2) A tank trailer internally encrusted with solid latex was buried on site in~ 1962.

C. Spillage of chemicals.
   1) Bulk truck loading and unloading areas - dripping, leakage, tank overflows, blowing of truck and plant bulk lines have contaminated the ground surface with plasticizer, alcohol and SBR latex from 1951 - 1978. The bulk loading area has recently been concreted over.

Rainwater leaching and runoff continues to pollute water in the recharge basins at these areas.

2) PCB Contamination.
An area of land 6' x 6' was contaminated with PCB's. No dates are given. This ground has been paved over. PCB's are no longer in use at the site.

3) Overflow of concrete holding tanks.
Overflow from the wastewater holding tank containing a 2% organic waste, as noted in Section III A.3, discharged into a recharge basin on several occasions. No dates are given.

4) Waste drum spillage.
Contamination of the ground has occurred at the outdoor organic waste drum storage areas due to perforation of the drums. The organic content of the waste drums includes 2-ethyl hexanol, alcohols, perchloroethylene, solution urethane, dimethyl formamide, toluene, methyl ethyl ketone, isopropyl alcohol, plasticizer, polyester and waste filter cake.

Rainwater runoff continues to contaminate the water in the recharge basin adjacent to the storage area.

IV. Recommendations -

An engineering study should be undertaken to determine the extent of soil and groundwater contamination. It should include analysis of core samples taken at all spill locations and recharge basins subjected to chemical contamination in the past. Observation wells should be installed on site to determine the level of contaminants in the underlying groundwater aquifer.

An engineering report should be prepared to discuss the extent of the contamination on site and the procedures and schedule necessary to reduce and eliminate continued

Att. 6-3
4/4

(4)

pollution of the groundwaters and to clean up the contamination already present, including disposal plans for the removal of contaminated material from the site.

During all phases of the study, a representative of this office should be present to verify that representative samples of contaminated soil and groundwater are collected. Samples should be split between Hooker Chemical Corporation and the New York State Department of Environmental Conservation. The NYSDEC should set limitations for all chemicals noted to have caused contamination on site and not presently listed in Title 6, Official Compilation of Codes, Rules and Regulations of the State of New York, Part 703. (NYSCRR)

JS:cs

240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

FRANCIS V. FADAR, P.E.
ASST. COUNTY COMMISSIONER
DIV. OF ENVIRONMENTAL SERVICES

Attachment 6-4
1 of 4

Hooker Disposal of Chemical Wastes

I Following chemicals were determined to be potentially hazardous and violated discharge regulations of SPDES or 360.

(2)	Adipic Acid	SPDES
(8)	Filter cake's components (diisobutyl melate, DOA, adipate adipate, DOM)	New 360
(9)	DMF (dimethyl formamid)	New 360
(12)	Ethylene glycol (on site; old Bethpage L.F.)	SPDES
(14)	Filter cake w/plasticizer	New 360
(17)	Hydrochloric acid	SPDES
(20)	Isopthalic Anhydride	New 360
(21)	Isopropanol	New 360-SPDES
(22)	Kane Ace B-22 (Acrylic Polymer)	New 360
(23)	MBS (methyl methacrylate butadiene styrene polymer)	New 360
(29)	MEK (methyl ethyl ketone) - Bethpage L.F.	New 360-SPDES
(32)	PCB thermal waste	New 360
(33)	Perchloroethylene (tetrachloroethylene)-Bethpage, Syosset L.F.	New 360-SPDES
(36)	Pthalic acid-Bethpage L.F.	New 360-SPDES
(37)	Pthalic anhydride	New 360
(44)	Sodium hydroxide	SPDES
(45)	Solution urethane-Bethpage L.F.	New 360
(46)	Speedi-Dri Residues	New 360
(48)	Sulfuric Acid	SPDES
(51)	Toluene-Bethpage L.F.	New 360
(54)	Trichloroethylene	New 360-SPDES

HRC 001 0087

Att. 6-4
2 of 4

(57)	Urethane latex	New 360-SPDES
(59)	Vinyl acetate (ethenyl ethanoate)	New 360
(60)	Vinyl chloride	New 360

II Following chemicals are industrial wastes and are not necessarily hazardous but have violated discharge regulation.

(13)	2 - ethyl hexanol	New 360
(18)	Isocyantes	New 360-SPDES
(23)	Lube oil	New 360-SPDES
(25)	Maleic Anhydride	New 360
(38)	Polyester	New 360
(41)	PVC (polyvinylchloride)-Bethpage & Brentwood L.F.	New 360
(47)	Sulfonic acid	New 360
(56)	Trimellitic Anhydride (TMA)	New 360

IIa Following chemicals require more information in order to make determination, i.e. toxicity, potentially hazardous.

(3) Barium soaps (in mineral spirits)

(6) Calcium soaps (in mineral spirits)

(7) Diethylene Glycol

(8) Diisobutyl melate

(8) DOM (s,5 dimethyoxy-4-ethyl-d-methyl-phenethylamine)

(10) Esterification filter

(13) 2 ethyl hexanol

(15) fumarate esters

(18) Isocyantes

(23) Lube oil

(24) Maleate Esters

(25) Maleic Anhydride

(28) Methocel

(31) Neopentyl alcohol

(38) Polyester

(42) Rosin Acid

(43) SBR latex 10 rinse

(47) Sulfonic acid

(49) TCB or TBC

(50) TMP

(53) TPU

(55) Trimellitic Acid

(56) Trimellitic Anhydride

IIIb Following chemicals require more information in order to make determinations on violations.

(5) 1,4 butanediol

(4) 1,3 butanediol

(7) diethylene glycol

(12) ethylene glycol

(13) 2-ethyl hexanol

(17) hydrochloric acid

(19) Isopthalic acid

(24) maleate ester

(26) MBS

(27) methanol

(28) MEK

(31) neopentyl glycol

(32) PCB

(34) Phenols

(35) Metasol

(40) propylene glycol

(42) Rosin Acid

(44) Sodium Hydroxide

(45) Solution urethane

(48) Sulfuric acid

(49) TCB or TBC

(51) Toluene

(52) Toluene sulfonic acid catalyst

(53) TPU

(54) Trichloroethylene

(60) vinyl chloride

COMPOUNDS	From VEL Site Assessment (No date) PVC/SBR Latex Plant 2 Sumps	ESTER Plant 1 Sumps	Attachment 6-5 PILOT Plant Sump
1. PVC Resin Solids	x		
Vinyl Chloride	x		
Gelatin	x		
Methocel(Methylcellulose)	x		
Stabilizers	x		
-Barium	x		
-Cadmium Soaps in mineral Spirits	x		
Trichloroethylene	x		
Vinyl Acetate	x		
Styrene	x		
Butadiene	x		
2. Rosin Acid Soaps	x		
Mixed Glycols		x	
Alcohols		x	
Perchloroethylene		x	x
Methanol		x	
Adipic Acid		x	
Trimellitic Acid		x	
Phthalic Acid		x	
Isophthalic Acid		x	
3. Maleaic Acid		x	
2-Ethylhexanol			x
Alcohols			x
~ Solution Urethane			x
* Solvents:			
DMF(Dimethyl Formamide)			x
Toluene			x
MEK(Methyl-Ethyl-Ketone)			x
Isopropyl Alcohol			x
~ Waste Plasticizer			x
4. ~ " Polyester			x
Blowdowns: Tower Water/ Boiler Blowdowns			
-Slicate			x
-Sodium Hydroxide			x
-Hexametaphosphate			x
-NA-Salt of Nitrilotriacetic Acid			x
-Sodium Lignosulfate			x
-Polyacrilate			x
-Phosphonate			x
-Zinc Sulfate			x
-Derma Brown Gdye			x
-Diethylaminoethanol			x
-Hydrazine			x
-Sodium Sulfite			x
-Disodium Alginate			x
-Sodium Salt of Penta-Chlorophenol			x
-Dichromate			x
-Sulfuric Acid			x
-Dilute Hydrochloric Acid			x

HRC 001 0091

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

FRANCIS T. PURCELL
COUNTY EXECUTIVE

JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

FRANCIS V. PADAR, P.E.
ASST. DEPUTY COMMISSIONER
DIV. OF ENVIRONMENTAL SERVICES

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May 28, 1979

Attachment 6-6

Dr. William Stasiuk
Associate Director
Division of Environmental Health
New York State Department of Health
Tower Building
Empire State Plaza
Albany, New York 12237

Re: Hooker Chemical Corporation

Dear Doctor Stasiuk:

As per our telephone conversation of May 25, 1979, enclosed is a chronology from our file on Hooker.

Please feel free to call me if you have any questions.

Very truly yours,

Sheldon O. Smith, P.E., M.C.E.
Deputy Director
Division of Environmental Quality

SOS:yk:r
Encl.

HRC 001 0092

NASSAU COUNTY DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

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JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER
FRANCIS V. PADAR, P.E.
ASST. DEPUTY COMMISSIONER
DIV. OF ENVIRONMENTAL SERVICES

CHRONOLOGICAL RECORD OF THE NASSAU COUNTY DEPARTMENT OF HEALTH RELATING TO THE REGULATION OF INDUSTRIAL WASTES OF THE HOOKER CHEMICAL CORPORATION PLANT (FORMERLY PLANT SITES OF INSULAR CHEMICAL CORP.& RUCO (RUBBER CORPORATION OF AMERICA) AT HICKSVILLE, NEW YORK

April 20, 1979

1955

April 27 - Hearing report by NCDH on Insular Chemical Corp.'s application to NYS Water Power & Control Commission to construct a new well of 400 gpm and 5000-gallon hydropneumatic tank to be used for cooling machines and manufacture process water.

May 25 - Received from Insular plans and application to discharge sanitary wastes to groundwaters.

June 16 - Letter from Mr. Bensin, designing engineer, requesting comments on the application and plans submitted for Insular on May 25, 1955.

July 14 - Letter from NCDH to Mr. Bensin, requesting additional information on plans and returning previously submitted plans and application for direct addition of requested data.

July 18 - Received from Mr. Bensin the application and plans with additional information requested by NCDH on July 14, 1955, of which in part states the process water, estimated at 24,600 gpd, will be the waste from the production of polyvinyl chloride.

Vinyl chloride monomer (monochloroethylene) from storage tanks is mixed with water and traces of other materials in batch-type reactors. Heat is applied to the reactors causing a polymerization reaction to occur whereby vinyl chloride monomer, suspended as fine droplets in water, is transformed into a plastic material known as polyvinyl chloride. At the end of the reaction cycle, the slurry of polyvinyl chloride in water is stripped under a high vacuum in order to remove all traces of residual vinyl chloride monomer.

1955 (continued)

July 18 (continued) - Water and polyvinyl chloride are separated by filtration and drying. Water from the filtration operation is discharged to the ground through a recharge basin. Polyvinyl chloride is packaged in paper bags.

Process water will contain soluble organic matter in the amount of 615.0 ppm, consisting of gelatin and acetic acid in equal parts. From experiments conducted by the plant, it has been demonstrated that the gelatin and acetic acid will seep into the sub-soil in an open basin without creating a binding slime or causing any unpleasant odor.

The gelatin acetic acid solution mixed with soil and exposed to air does not develop mold or odor and changes from acid pH to neutral pH in a few days.

July 21 - Letter from Mr. Bensin with additional information, corrected prings, and commenting on the sharing of pilot plant with Rubber Corp. of America. The affiliated Rubber Corp. and Insular will have two wells and no connection to Hicksville Water District. Leaching rate of size recharge basin is 11 gpd/sq.ft.

A bulletin from the Gelatin Research Society of America was attached, in which reference is made to the action of the gelatin pertinent to the reaction of the planned disposal, and a letter from Insular's chief chemist indicating consumption of soil bacterial on acetic acid gelatin solutions.

July 29 - Letter to State Division of Laboratories & Research, requesting information and advice to: Insular Waste Discharge.

Aug. 16 - Letter to NCDH from State HD Div. of Labs & Research, no previous experience except information provided by Nassau County. Request samples of waste waters and soil for experiment to study the problem.

Aug. 17 - Application by Insular forwarded to State HD by NCDH for Insular's industrial waste system, commenting on our studying the waste expected from the plant.

Sept. 16 - Memo to State with sample collected Sept. 15, 1955.

Oct. 6 - Letter from State advising they must be furnished with two-gallon samples weekly in order to evaluate the problem.

Oct.11 - NCDH letter to State indicating compliance to request for samples.

1955 (continued)

Nov. 15 - Letter from State, because of lack of samples for continuous dosing, the experiment will have to stop unless better arrangements can be made.

Nov. 21 - Letter to State - arrangements made whereby Insular would collect samples and send direct to State laboratory. State indicated satisfaction with this arrangement on Nov. 23, 1955, in a letter to Insular.

1956

Feb. 16 - State laboratory report of study of wastes from Insular Chemical Co. submitted to State Bureau of Environmental Sanitation indicating no odor problem would exist, groundwater supplies might develop tastes and odors, and recharge basin would eventually clog. Report received by NCDH after March 6, 1956.

Feb. 28 - Memo from State Health Dept. forwarding the Feb.16th report to NCDH.

1958

July 7 - A by-product material license dated July 7, 1958, for Rubber Corp. of America by U.S. Atomic Energy Commission, for illuminated dial wristwatch demonstration purposes.

Sept. 16 - Letter from NCDH to NYSHD-BWS refers to a hearing on RUCO's application for increased pumpage - 80-120 mgy from two wells. Indicates SHD has to approve plans for treatment facility fed by the wells. Attached hearing report, Sept. 16, 1958, refers to expanded production of rubber plastics; i.e. shower curtains and upholstry material. Water use expanding from 300,000 gpd to 600,000 gpd - 5 percent for process and discharge to separate 25' x 25' recharge basin. Contains oily and solid materials and $MgSO_4$. Total solids 100 ppm.

1960

Feb.5-16 - Internal memoranda written by F.J. Flood of NCDH attempting to find method of disposal of phenolic scrubber wastes from Rubber Corporation of America. Refused from Nassau County sewer system. Checked with Pressman, NYC Industrial Waste Section, Wards Island, said they accept up to 40 ppm. Composite sample taken from drums by NCDH Feb. 17, 1960, however, indicated no phenols detected in waste at that time.

1960 (continued)

Feb. 17 - NCDH Div. of Labs #1414 - Composite sample of 3 - 55 gal. drums of waste. No phenols detected.

Feb. 25 - Unsigned internal handwritten memo indicates NCDH gave RUCO list of industrial waste scavengers after conference on phenol wastes. RUCO would contact to get costs of removal.

Sept. 19 - NYSDEC - WR Commission Notice of Hearing on RUCO application to increase pumpage on well - refers to Application W-1442 (same as Sept. 16, 1958) - 2nd modifying petition - 120 - 290 mgy.

1963

March 4 - Referral to NCDH of overflowing recharge basin at RUCO by Nassau County Dept. of Public Works (NCDPW) Mosquito Control Division.

1964

April 2 - Letter NCDH to RUCO refers to site inspection of 4/1/64, and requests completion of industrial survey form in order to evaluate their waste discharge (San. Form 117).

July 21 - RUCO returned San. Form 117 to NCDH. Form partially describes RUCO processes and chemicals used. Materials used include Butadiene monomer, styrene, and vinyl chloride monomers. Includes shorthand description of wastes.

1965

Aug. 13 - Letter from RUCO, a Hooker Chemical Corp. subsidiary, for permission to dispose weekly of 6 drums of coagulated latex and 12 drums carbon black filter cake at Syosset landfill. August 23, 1965, NCDH letter to RUCO stating no objection to request of Aug. 13, 1965, but indicating final permission must be obtained from TOB Sanitation Dept.

1968

May 16 - Engineering Report H2M to RUCO, Div. of Hooker Chemical Corp. Objective was to design storm water collection and disposal system. However report also refers to manufacture of esters, resins, and latexes, and disposal of wastewater. Indicates wastewaters do not meet newly assigned NYS-WRC standards of limitations on chemical constituents, and recommends provisions for future treatment of process wastewaters.

December 3, 1976 (continued)- While chloroform was detected in one sample (Levittown - Well #10) at a level of 1.3 ug/l, and carbon tetrachloride was detected in eight of the twelve samples in a range of 1.8 to 3.6 ug/l, such levels were not considered by the EPA to be of public health significance. Well #6-1 of the Bethpage Water District was determined to contain 26 ug/l of tri chloroethylene, 2.8 ug/l of 1,1,1 tri chloroethane, and 2.4 ug/l of carbon tetrachloride. Because of the level of tri chloroethylene, Mr. Smith of the EPA recommended that Well #6-1 not be used. Mr. Smith also indicated that Well #3-1 of the Hicksville Water District should not be used because of the detection of 68 ug/l of vinyl chlorides.

After the meeting, Mr. Padar, after reviewing the matter with Dr. Dowling, directed that the Bethpage Water District and Hicksville Water District be contacted and requested not to use Well 6-1 (Bethpage), and Well 3-1 (Hicksville). Accordingly, the writer contacted Commissioner Gill Cusick of the Hicksville Water District, and Gustave Bernhardt, Chairman of the Board of Commissioners of the Bethpage Water District, to request their cooperation and compliance, which was immediately forthcoming. It should be noted that Well 3-1 of the Hicksville W.D. was 168 ft. deep and had, in fact, not been used for routine supply purposes in over 8 years because of high nitrate levels, and that Well 6-1 of the Bethpage W.D. was 386 ft. deep and had not been used for approximately 11 months because of necessary repairs.

December 7, 1976 - A meeting was held with water supply officials in the Bethpage, Hicksville, Levittown Water Districts to advise of the problem of organic waste contamination in the Bethpage area of Nassau County. Mr. Padar made the presentation for the Department and reviewed the extent of the problem, Department plans for future sampling, the possible sources of contamination, and measures to be taken in the future to further define the problem.

December 8, 1976 - A review of Department records on December 8, 1976, revealed the following periods of well non-usage at the Grumman Aerospace Corp. -

Well #14	- since August 1976 (except for limited use in Sept. 1975)
Well #8	- since September 1974
Well #9	- since December 1974
Well #6	- since September 1975
Well #10	- since October 1975

These wells were no longer used according to available information because of taste and odor problems. Because of the detection of vinyl chloride and tetrachloroethylene, the Department formally recommended that Well #8 and 14 no longer be used for consumptive purposes in August 1976. The Department recommended that Well #5 not be used for consumptive purposes because of the high levels of tri and tetrachloroethylene.

December 9, 1976 - Handwritten unsigned memo refers to a call to Hooker directing them to haul old PVC sludge to New Jersey (Rollins) or upstate NY to New City for incineration.

NCDH internal memo re a chronology Feb. 16, 1960 through Jan.18, 1973 on Hooker.

Letter from NYSDEC, Stony Brook, to Hooker requesting list of industrial scavengers currently used and used in past by Hooker.

December 10, 1976 - A laboratory report from H2M Corp./Environmental Engineer and Scientists, to GAC revealed that seven samples from the Grumman Aerospace Corp. Wells #1, 5, 6, 8, 9, & 14, and the distribution system (Plant #5) contained:

Phenol - levels of between 2 and 250 ug/l in 7 samples and not detected in 1 sample (Well #8).
Methane - not detected (< 1 ug/l) in all samples.
Ethane - not detected (< 1 ug/l) in all samples
Chloroethylene
- Di - detected in all sampls at levels of between 1 - 22 ug/l
- Tri - detected in 7 samples at levels of between 2 - 350 ug/l and not detected (< 2 ug/l) in one sample (Well #6)
- Tetra - detected in all samples at levels of between 8 - 490 ug/l.

Vinyl Chloride - detected in Well #5 (7 ug/l), the distribution system (22 ug/l), and not detected (2 ug/l) in 6 samples.

Final results were received from the EPA regarding the re-analysis of those samples transmitted to the EPA on Dec. 1, 1976, by the Department of Environmental Conservation. The results telephoned to the Department by Mr. Francis Brezenski, Chief of the Technical Support Branch indicated that the original analyses of the 9 samples completed on December 2, 1976, was in error. The re-analysis revealed that toluene and benzene were not present in any of the samples examined and that vinyl chloride was not present in Well 3-1 of the Hicksville W.D. The results, however, confirmed the presence of 28 ug/l of trichloroethylene in Well 6-1 of the Bethpage W.D.

December 11, 1976 - internal memo NCDH samples collected 12/1/76 at Grumman and Hooker.

NCDH internal memo refers to materials and products from Hooker circa 1965.

October 15, 1968 - Hooker submits environmental analysis report for State Department of Health (NYSHD) for air pollution emissions. Report covers 18 industrial process systems and approval recommended by B. Calder of NCDH on January 2, 1969.

January 7, 1969 - Returned by NYSDH, environmental analysis report procedure obsolete, new procedures now in effect including new form AIR 100I - "Application to Construct or Modify a Sou-ce of Air Contamination for Compliance with 10 NYCRR 175-180 Process, Exhaust, or Ventilation Systems". No new forms A100I received until September, 1974. No explanation on record for the gap in time. The delay may have been created by confusion in changeover of procedures during establishment of NYS Department of Environmental Conservation (NYSDEC). All emissions are presently under permit except for a recent one submitted November 22, 1976 for new operation. (See summary record attached of all air emissions-Appendix 2).

July 21, 1970 - Letter from NCDH to the Vice-President of Hooker Chemical, regarding the need for permit to discharge waste water. Hooker Chemical then contacted Bensin and Burns, Consulting Engineers, to prepare an industrial waste study. Effluent tests revealed phenol levels ranged from .01 to .23 mg/l. Odors ranged from a faint aromatic to a strong aromatic and chemical odor.

August 18, 1970 - NCDH meeting with Mr. John Wichmann, Supt. of Facilities and Maintenance at the Grumman Aerospace Corp. to discuss procedures for routine water quality surveillance by the Department at the wells and in the distribution system.

August 20, 1970 - NCDH letter to GAC formalizing the agreed to procedures and requesting that the Corporation forward the results of water quality analysis by the Lauman Co. to the Department.

November 20, 1970 - Letter from Bensin and Burns, Consulting Engineers, acknowledging that they have hired Lauman Laboratories to investigate the character and volume of the waste from Hooker Chemical.

March 8, 1971 - Letter from NCDH to Bensin and Burns requesting submission of progress report on their study.

April 23, 1971 - Report from Hooker Chemical to NCDH describing Hooker's effluents and presenting tentative schedule to abate liquid pollution problem. Refers to various waste streams and to PVC effluent.

June 15, 1971 - Handwritten news refers to meeting at Hooker with NCDH, discussion was held on sampling data of waste provided by Lauman Labs.

June 17, 1971 - NCDH letter to Hooker requesting additional laboratory analysis based on information provided by NYSDEC. Includes Cu, Hg, Carbon-chloroform ext. acts and oil.

August 31, 1971 - Hooker submits Sept. progress report to NCDH. Report gives a description of all constituents tested for Zn, As, Cb, SO_4, Fe, Pb, Phenol, Odor, Color, CCE, Oil, Cu, Hg, Ba, Cd, Sn, and indicates CCE and Hexane Extraction data to be available in 2 weeks. Refers to pilot plants wastes "Now being drummed". No disposal information.

December 2, 1971 - December Quarterly Report of Hooker Chemical to NCDH. Discusses progress in investigation of treatment methods and problems associated with treatment. Includes drumming of wastes for disposal to Rollins-Purle.

August 30, 1972 - Letter from Hooker to NCDH advising their intention to incinerate wastes from Plant #1 and laboratory. Esters and Polyesters, latex concentration and strip effluent wastes are from Plant 1. Drummed wastes are from laboratory and miscellaneous sources. #2 fuel oil, which is used to incinerate wastes, in addition will be used in an absorbent system to entrain volatile organics from plant #2 (vinyl chloride, vinyl acetate and butadiene.

January 18, 1973 - Letter to NCDH from Hooker Chemical gives a 24 month program for controlling water pollution from plant #2 (Jan. 1973-Dec. 1974) Refers to needed approval from Hooker Chemical's Board and Occidental Petroleum's Board.

January 26, 1973 - Cover letter from Hooker Chemical to NCDH (APC) asking for approval of 2 applications for control of water pollution in plants #1 and odors from plant #2. 2 attachments: Both dated Jan. 24, 1973 (1) Application for Ejector Venturi scrubber for removal of vinyl acetate and Butadiene vapors from airy emissions from plant #1. (2) Application for incinerator for water discharge from plant #2 - wastes include alcohols, glycols, styrene.

April 10, 1973 - Letter from Hooker to NYSDEC gives information requested on scrubber efficiency.

October 15, 1973 - NYSDEC approval to construct incinerator. Final approval to operate February 18, 1975. Stack test conducted June 26, 1975 - met State standards.

December 12, 1973 - NCDH met with Mr. John Wichmann and Mr. John Ohlman of the Grumman Aerospace Corporation to discuss groundwater quality. At that meeting, it was revealed that the Corporation had 14 active wells used for consumption, processing, and air-conditioning, and that 13 wells had been replaced since 1974. It was indicated that wells #5, #6, #8 and #14 had developed an odor problem and that well #8A (N4708) and #12 (N1961), were previously abandoned because of it. In addition, sampling during December disclosed a rapid increase in the nitrate levels in wells #6, 5, and 10. It was noted at that

time the Corporation recharged all domestic wastes after aeration in three locations and that industrial wastes were being discharged adjacent to the Grumman Aerospace Corporation by Hooker Chemical Company. The problem was that after prolonged pumping, wells #5, 6, and 8 developed odor problems. Mr. Wichmann believed the problem to be due to industrial waste discharges, possibly from Hooker Chemical Company.

January 30, 1974 - Letter from NCDH to Hooker refers to approval given March 6, 1973 for the scrubber and incinerator. Hooker warned that if energy crisis results in fuel shortage for incinerator, NCDH will not allow raw wastes to be discharged. Also reminded Hooker test program for emissions requires approval.

March 22, 1974 - NCDH letter to Mr. Everett MacLemann, Chief of the Water Supply Branch of Region II of the United States Environmental Protection Agency (EPA) requested the assistance of the EPA in the performance of complete "exotic" analysis at two PVC latex sumps of the Hooker Chemical Co. at three public water supply wells, and at two adjacent sewage treatment plants.

April 10, 1974 - NCDH and EPA sampled three public supply wells and two sewage treatment recharge basins located on the Grumman property, in addition to sampling discharge basin lagoons at the Hooker Chemical Company in Bethpage. All samples were transported to the EPA laboratory in Edison, New Jersey, where organic analyses were to be conducted using a gas chromatograph/mass spectrometer.

April 10, 1974 - A meeting with Malcom Drown, Chemical Engineer at the Hooker Chemical Co. determined that the two major discharges from the plant consisted of phenols and PVC latex derivatives. Hooker Chemical Co. was in the process of constructing an incinerator type waste disposal system to take care of the phenol discharges. Future plans of the company included construction of a waste treatment process for the PVC latex derivatives.

May 21, 1974 - The April 10 results indicated that no organics were found in samples from Grumman wells #6, 8, and 14 at a minimum detection level of 100 ug/l. The results from the recharge basins at Plant #3 and at Plant #12 indicate the presence of some VC at a minimum detection level of 1 mg/l. Hooker condenser water lagoon indicated the presence of traces of tri and tetra chloroethylene and larger amounts of octyalcohol (such as Shell Herder or equivalent) at a minimum detection level of 100 ug/l (extracted sample) and revealed the presence of VC and octylalcohol at a minimum detection level of 1 mg/l (neat sample). At the Hooker Chemical Company's PVC Lagoon, the results indicated a large amount of VC and acetic acid at a minimum detection level of 1 mg/l. Since quantitative data was not requested, only a qualitative analysis was done by the laboratory.

May 21, 1974 - Mr. MacLemann, USEPA recommended that the Department concentrate on the wells and what future samples be taken with various preservatives to try to determine just what contamination was present. If the lab was successful in determining the odor contaminants, the lagoons and the recharge basins could then be checked as well as other possibilities for the source of the contamination. Mr. MacLemann that he would be pleased to provide assistance.

July 11, 1974 - Report was made by NCDH (BAQM) on investigation of Hooker Chemical vinyl chloride air emissions. Report done in response to NYSDEC newly-instituted program to inspect all facilities processing vinyl chloride. Hooker Chemical had been requested to provide detailed information on vinyl chloride and their other industrial processes in plant monitoring under jurisdiction of OSHA.

August 1974 - Memo from NCDH (BAQM) NCDH Division of Laboratories requested development of capability in Lab to sample for vinyl chloride in air.

October 8, 1974 - Memo from DEC to NCDH requesting periodic sampling of ambient air for vinyl chloride in vicinity of Hooker.

November 7, 1974 - Hooker submitted report to DEC giving results of ambient air sampling which indicates compliance with proposed ambient air standards for vinyl chloride. They also described various processes at the Hooker plant.

September 12, 1974 - Hooker to NCDH Air 100I applications for certificates for all vinyl operation emissions transmitted to Region I, NYSDEC on September 30, 1974 NYSDEC never certified because vinyl chloride operation was subsequently discontinued. On April 15, 1975 Hooker advised NYSDEC that vinyl chloride operation was temporarily closed down, and on December 29, 1975 State was advised that operation had not been carried out since April 1, 1975 and had been discontinu-d permanently.

January 29, 1975 - Letter from Hooker to NCDH. Attachments list all chemicals purchased at Hooker in 1974.

April 17, 1975 - Letter from Hooker to NCDH. Attaching short form "C" (SPDES Application). Refers to future SPDES Discharge Permit Form to be sent.

April 22, 1975 - Letter from Hooker to NCDH. Attached SPDES Permit Form containing effluents and compliance schedule.

May 6, 1975 - Hooker resubmits application for SPDES permit on new form deleting request for process water and including only boiler and cooling water blowdown because of discontinuance of their PVC operation. The permit was never completed by NCDH and transmitted to DEC because Hooker had made changes in their cooling water treatment.

May 22, 1975 - Water quality samples were collected from the Hooker Chemical Company's lagoons (#1 and #2) by NCHD. This complete chemical analysis included analyses of heavy metals, indicating that the lagoon water contained a musty odor, high levels of turbidity and iron, ammonia, nitrites, zinc and silicates. In addition, a sample from lagoon #1 contained a high phenol concentration (0.35 mg/l).

a) Requesting that the State Health Dept. provide their expertise in determining what further analyses should be conducted.

b) Requesting the assistance of the State Health Dept. or the EPA (through State Health Dept.) to analyze samples for organic constituents to determine the cause of the odor problem at the GAC wells, and

July 18, 1975 - Mr. Syrotynski, New York State Health Department to Mr. Donohue, Nassau County Health Department, requested that arrangements be made to submit samples to the Griffen Laboratory for identification of the odor contaminant through the Bureau of Public Water Supply.

August 1, 1975 - Nassau County Department of Health visited Hooker Chemical Corp. to determine the present status of waste discharges. It was determined that Plant #2 had been shut down since October 1974, except for 1 reactor which had no waste discharge and that Plant #1 production consisted of polyesters and plastic processes. The discharges from Plant #1 were basically organic hydrocarbons and 90% water. It was stated that the remaining hydrocarbons consisted of glycols, alcohol and perchloroethylene. Such discharges were pumped into an incinerator-type waste disposal system. Four lagoons adjacent to Plant #1 were said to have the following function. One was to handle any emergency overflows of organic hydrocarbons. Two lagoons handled storm water flow and the final lagoon handled cooling tower water and boiler blowdown.

August 4, 1975 - Nassau County Health Department collected three samples for organic analyses. Two samples were collected from the Grumman Aerospace Corp. Water Supply Wells #8 and #14 after two days of continuous well operation. A sample was also collected from the Hooker Chemical Co. which was a composite made up of 50% lagoon water residue and 50% pre-incineration waste water. The waste water lagoon was known to formerly receive discharges of vinyl chloride and phenolic-type waste. It was also noted that the use of the lagoon had been discontinued for over six months and that pre-incineration waste water was representative of waste water formerly directed to on-site recharge basins. Nassau County Department of Health advised State Health Department that methane, ethylene and vinyl chloride had been tentatively identified by the Grumman Aerospace Corp. itself, and was requested that the State Laboratory perform quantitative analysis for those constituents, in addition to analyses for additional contaminants, which might be responsible for the odor problem.

August 14, 1975 - Preliminary results of the analyses of the August 4 samples were; 50 ug/l of vinyl chloride, 500 ug/l of a tetra-chloroethylene-like material, and an unknown third chlorinated compound were detected.

August 27, 1975 - Letter to New York State Department of Health requesting guidelines on VC maximum levels.

October 1, 1975 - Nassau County Department of Health met with Phil DeVries, Hooker Chemical and advised clean-up and removal of sludge left in all drying beds and recharge basins.

October 2, 1975 - New York State Health Department, forwarded the results of the August 4 sampling to Nassau County Department of Health. This letter, received on October 14, 1975 indicated that 50 ug/l vinyl chloride was found in both the sample from well #14 and in the Hooker Chemical wastewater sample. Tri-chloroethylene was found at a level of 16 ug/l in Well #8, 500 ug/l in Well #14 and 80 ug/l in the waste water sample. Tetra-chloroethylene was found at a level of 88 ug/l in Well #8, 65 ug/l in Well #14 and 8600 ug/l in the waste water sample. In addition, the waste water sample was found to contain 25 ug/l of dichloroethylene and miscellaneous amounts of other hydrocarbons. State Health Department requested a short report from the Nassau County Health Department.

October 16, 1975 - Letter from Hooker to Nassau County Department of Health - Gives schedule for a "water run-off" program to prevent possibility of ground water pollution due to leaching. Includes cleaning pumps, sludge pits, drainage trenches (all completed). Proposes other measures for basins and drainage system and proposed to rise Chemical Leaman Tank Lines and Rollins Environmental in emergencies to haul away wastes in tank trucks to Rollins facility for destruction.

November 6, 1975 - Nassau County Health Department letter was prepared to alert the U.S. Geological Survey to the problem of contamination of wells by organic wastes at the Grumman Aerospace Corporation and to request the Survey's evaluation. A cooperative study between the Geological Survey and the Department was suggested in the letter to determine the extent, movement and future implications of groundwater contamination by industrial wastes.

November 10, 1975 - Nassau County Department of Health met with representatives of the Geological Survey to discuss the problem of groundwater contamination by organic wastes. At the meeting it was agreed that a cooperative investigation of the problem by the Department and the Survey was appropriate.

November 17, 1975 - A set of 7 additional samples were collected and transmitted to the State Health Department Laboratory for complete organic analysis. Samples were collected from the Grumman Aerospace Corp. Wells #1, #5, #8, #14 and the distribution system (Plant #2)., and from two adjacent municipal water supply sources Bethpage Well #11 and Hicksville Well #8-2. The samples from GAC Well #8 and #14 were collected to confirm the results of previous analyses reported by the State. Samples were collected from Wells #1 and #5 to determine if the contamination

problem extended to other Grumman sources to the south. A sample was collected from the distribution system to determine if any organic contaminants were in the drinking water. Well #8 in the Hicksville Water District was selected for sampling because of its close proximity to the Hooker Chemical Co. to the Northeast and to the Grumman Aerospace Corp. to the East. Bethpage Water District Well #11 selected for sampling because it was also adjacent to and South of the Grumman Aerospace Corp. and down-gradient with respect to the groundwater flow.

January 22, 1976 - A letter was sent to Grumman bringing them up-to-date on the department's planning for a study of groundwater contamination. Correspondence with the Geological Survey was forwarded and it was indicated to Grumman that we would investigate the excessive delay in the State's analyses of the samples sent to them on November 17 and the problem with obtaining a response from the Environmental Protection Agency or the State Health Department on the question of the public health significance of the detected contaminants.

February 24, 1976 - Notification was received from State Health Department that the 7 samples collected by the Department in November were not analyzed until early February, 1976 because of a large backlog of samples which had to be analyzed for PCB's (Polychlorinated Biphenyls). Due to the delay only qualitative analyses were performed on the samples. The results indicated that Well #8 contained vinychloride (at least 50 ppb) along with tri-chloroethylene and tetrachloroethylene. Well #5 was found to contain both tri and tetra chloroethylene. We were informed at that time that there had been a malfunction of the mass spectometer and that none of the other samples were examined. The State's intention was to attempt a quantitative analysis of all of the samples within a week. It was recommended that alternate sources of water supply be considered or water quality treatment be provided.

March 11, 1976 - A second meeting was held with the Navy owner of some wells at G&C) and with representatives of the Department of Public Works, the Grumman Corp. and the Navy Geological Survey in attendance. A thorough investigation of the extent of future implications of contamination in the Grumman area were discussed.

April 28, 1976 - The final results of analyses of the water samples transmitted to the State laboratory in November 1975 were received and were only qualitative in nature. The results indicated that vinylchloride was detected only at Well #8 at Grumman Corporation, that dichlorethylene was detected at Wells 8, 14 and the distribution system (Plant #2), that trichloroethylene was detected at Wells #1,5,8 and 14 and the distribution system and that tetrachloroethylene was detected at Wells #5, 8, 14 and the distribution system. Analysis of the samples from Bethpage Well #11 and Hicksville Well #8-2 were negative for all organics examined.

November 29, 1976 - NCDH to Hooker - letter request for updated chemical inventory for past seven years.

December 1, 1976 - Samples collected by G. Robbin, NYSDEC and J. Welsch, NCDH, for organic analysis of water discharge from Hooker.

December 2, 1976 - A meeting of government agencies was held to discuss organic chemical contaminants in groundwater. In attendance were representatives from the Office of the County Executive, the US Environmental Protection Agency, the US Food & Drug Administration, U.S. Geological Survey, the State Dept. of Health, the State Dept. of Environmental Conservation, the Suffolk Dept. of Health, the L.I. Wastewater Managment Study, the Nassau County Dept. of Health, the Nassau County Department of Public Works, the Nassau County Water Resources Board, and the Grumman Aerospace Corp.

During the meeting, the results of analyses of samples collected on November 29, and November 30, 1976, and transmitted to the EPA Laboratory were revealed. The results indicated that all well samples contained high levels of toluene (280-320 ug/l) and benzene (62-120 ug/l), and that one well (Hicksville #3-1) contained 68 ug/l of vinyl chloride. No organic contaminants were found in a sample from the distribution system (Plant #5) of the Grumman Corp.

After the meeting concluded, the EPA agreed to collect additional samples for organic analyses that day.

In the Hicksville Water District, a sample was collected from Well #9-1 because it was located close to the Hooker Chemical Corp. to the southeast and had not been previously sampled for organics.

Earlier in the day on December 2, 1976, water samples were collected from Wells #3, 4, and 10, and the distribution system (Plant #2) of the Grumman Aerospace Corporation.

December 3, 1976 - A second meeting of government agencies was held, in the Department's Board Room, to discuss plans for continuing analysis of wells for organic contaminants. In attendance were representatives of the EPA (Smith and Cramer), DEC (Middleton, Machlin, Yermin, Bruckman), and this Department (Dowling, Padar, Donohue, Alarcon). Also present was State Assemblyman Andrew Yevoli of the Town of Oyster Bay. During the meeting, Mr. Smith was able to obtain from the EPA laboratory in Edison, N.J., partial results of analysis of those samples collected on December 2, 1976, for analysis by the EPA. The results indicated that vinyl chloride, di chloroethylene, tetra chloroethylene, tri fluoro and tri chloroethane, 1,1,1 tri chloroethane, toluene, bromo di chloromethane, benzene, and methylene chloride were not detected in any sample at a sensitivity of 0.1 ug/l.

December 14, 1976 - The N.Y. State's Assembly Sub-Committee on Health Services, chaired by Alan Hevesi, held a public hearing on the problem of contamination of groundwater by organic wastes at the Board of Supervisor's meeting room in the County Executive Building at 10 am. Numerous governmental agencies and private individuals were asked to attend and provide testimony.

Dr. Axelrod and Mr. Reamon transmitted the results of analysis of samples collected on December 2, 6, and 7, and reported by Dr. Brian Bush to Mr. Samuel Syrotynski in a memo dated December 13, 1976.

The results of analysis of samples collected on December 7, 1976, at GAC Wells 11, 13, 15, and 16, were reported as follows:

Chloroform - <1 ug/l in all samples
1,1,1 Trichloroethane - 11, <5, 20, and 25 ug/l, respectively.
1,1,2 Trichloroethylene - 10, <1, 15, and 6 ug/l, respectively.
Tetrachloroethylene - 34, <5, 15, and <5 ug/l, respectively.

December 21, 1976 - Ten additional samples for organic analysis were collected from municipal water supplies in the vicinity of the Grumman Corp. These samples, collected without prior State Health Dept. approval were sent to the State laboratory that day. Following are the water supply and well numbers sampled that day:

Levittown W.D.	Wells 2-A, 3 (2 samples from each - 1 well raw - 1 well treated)
Hicksville W.D.	Wells 1-5, 4-2, 9-2
Plainview W.D.	Wells 1-1, 4-1
Bethpage W.D.	Wll 8A

All of the samples were collected from wells previously unanalyzed for organics and were within a 2-mile radius of the Hooker Co. Dual samples were collected from the Levittown W.D. to determine what effect chlorination may be having in production of organic contaminants. In a letter that day to Dr. Brian Bush of the NYS Div. of Laboratories and Research, it was requested that analysis be conducted for the presence of vinyl chloride, Di, tri and tetra chloroethylene as well as chloroform, toluene carbon tetra chloride, benzene, and other volatile organics. In addition, it was requested that analysis be performed for the presence of Dibutyl Phthalates, C4 benzene, Octyl phenols, and napthalenes since these so-called semi-volatile compounds had been found in appreciable concentration in analysis of shallow groundwater by the ERCO Laboratory in analyses made for the 208 study.

December 22, 1976 - Preliminary results of analysis by the State Health Dept. were received by telephone for those 8 samples collected and transmitted on Dec. 8, 1976. One of the 8 samples (GAC Well 14) was not run because the sample had frozen and broken the bottle. The results for the constituents quantitated at that time were as follows:

December 22, 1976 (continued)

Chloroform - not detected (<5 ug/l) in 5 samples and not quantitated (masked) in 2 others (BSP-1 and GAC 10)

1,1,1 Trichloroethane - not detected (<10 ug/l) in 2 samples not quantitated (masked) in 3 samples (BSP-1, GAC #4,10), 12 ug/l in GAC #12, and 14 ug/l in So.Farmingdale (1-).

1,1,2 Trichloroethylene - 16-23 ug/l in 4 samples (Plainview 3-1, BSP 1, Farm. 2-1, So.Farm. 1-1)>50 ug/l in GAC #3, 60 ug/l in GAC #10, and not quantitated (masked) in GAC #4.

Tetrachloroethylene - not detect (<10 ug/l) in 3 samples, 18 ug/l in GAC #3, 24 ug/l and 40 ug/l in GAC #9, and >100 ug/l in BSP #1.

Analysis for vinyl chloride, toluene, and benzene had yet to be completed at that time.

December 23, 1976 - After review of the results of analysis reported by the State laboratory on Dec. 22, 1976, NCDH recommended that the use of the following wells be restricted:

A. Plainview Well #3-1
So. Farmingdale Well #1-1
Bethpage State Park Well #1
Village of Farmingdale Well #2-1

This action was taken on the basis of the detection of between 16-22 ug/l of trichloroethylene in each of the wells and >100 ug/l of tetrachloroethylene in Bethpage State Park Well #1. While no limits have been established for these constituents on either the Federal or State level, the fact that the contaminants were considered to be potentially carcinogenic to humans was the basis for taking the restrictive action as a precautionary measure. Telephone calls to the suppliers were made informing of the Commissioner's recommendation. Immediate agreement to comply with the recommendation was received from all supplies with the exception of the Bethpage State Park. The three suppliers were able to comply immediately in view of the low demand for water normal during the winter and the availability of other wells to meet water demands. Letters confirming the Department's recommendation were mailed on December 28, 1976.

B. Grumman Aerospace Corporation - Wells 3, 4, and 10

This action was taken on the basis of the detection of trichloroethylene at a level of >50 ug/l in Well #3 and 60 ug/l in Well #10, and on the basis of the detection of tetrachloroethylene at a level of 18 ug/l in Well #3, 90 ug/l in Well #4, and 24 ug/l in Well #10. A telephone call to GAC was made by NCDH advising of the results and the recommended

December 23, 1976 (continued) 01044628

restriction. It was noted that Wells 3 and 4 were used only in the summer and that Well 10 had already been removed from service.

NCDH also advised Dr. Jessup that the Department recommended the restriction of Wells 1, 11, and 15, also on the basis of the detection of tri and tetra chloroethylene. Wells 11 and 15 were restricted on the basis of the analysis of samples analyzed by the SHD and Foster D. Snell Laboratory (retained by CAC for samples collected on Nov. 30, 1976, and by the SHD for samples collected on Dec. 7, 1976. These samples indicated maximum levels of tri and tetra chloroethylene as follows:

Well #11	- 60 ug/l	trichloroethylene.
	54 ug/l	tetrachloroethylene
Well #15	- 59 ug/l	trichloroethylene
	19 ug/l	tetrachloroethylene

Well #1 was restricted on the basis of analysis reported to the Department on Dec. 10, 1976, by the H2M Corp. laboratory for samples collect on July 12, 1976. The results indicated the presence of 220 ug/l of di chloroethylene, 350 ug/l of tri chloroethylene, and 490 ug/l of tetrachloroethylene.

December 27, 1976 - NCDH memo of aproposed sampling plan to evaluate the extent of organic contamination of the groundwater in the icinity of Hooker Chemical, in the vicinity of industrial waste water pollution sources, and in a general county-wide assessment.

A "Proposed Project for Comprehensive Testing for Trace Organic Compounds in Public Water Supplies in Nassau County, New York" was prepared by NCDH. The planned project involved the systematic sampling and testing of a total of 450 public water supply wells and strategically located privately owned and monitoring wells using a combination of government and commercial laboratories. The project, predicated on the voluntary participation and sharing of funding by government agencies and public water supply agencies, was separated into two district components; the survey of contamination in the Bethpage area, and a general county-wide survey.

January 3, 1977 - NYS Assemblyman's letter to Governor Carey referred to "the existence of highly dangerous chemicals in public and private water supplies serving the Bethpage and Hicksville Communities" and the need for immediate action to determine the extent of the contamination and the potentially hazardous effect it could have on the public's health."

Also on January 3, 1977, 17 water samples were collected in various municipal water supplies and delivered to the SHD laboratory via air freight the same day, requesting that the samples be analyzed for the same trace volatile and semi-volatile organic constituents requested for the samples transmitted on December 21, 1976.

January 3, 1977 (continued) - Samples were collected from the following wells:

Plainview W.D.	- Well 2-1, 5-2
Levittown W.D.	- Well 5A, 9
(V) Farmingdale	- Well 2-2
So. Farmingdale	- Well 1-2, 2-2, 4-1, 5-2, 6-1, 6-2
New York Water Service	- Well 3S, 4D, 5D
Jericho W.D.	- Well 23
Massapequa W.D.	- Well 1 NE, 2 NE

January 5, 1977 - Hooker response to NCDH letter of Nov. 29, 1976, giving lists of chemicals for 1970 through 1976.

January 11, 1977 - In a meeting in Albany between NYSHD, NCHD, and NYS Assemblyman, the results of analysis of samples collected on Dec. 21, 1976, and Jan. 3, 1977, were revealed. All 27 samples analyzed were collected from municipal water supply sources. The following is a summary of the results:

Vinyl chloride	- not detected (<10 ug/l) in all samples.
Chloroform	- not detected (<5 ug/l) in 24 samples - 5 ug/l in Well 3 Levittown W.D. (chlorinated). 16 ug/l in Well 8A Bethpage W.D. 67 ug/l in Well 1-1 Plainview W.D.
Trichloroethane	- not detected (<2.5 ug/l) in 25 samples 10 ug/l in Wll 8A Bethpage W.D. 22 ug/l in Well 4-2 Hicksville W.D.
1,1,2 trichloroethylene	- not detected (<5 ug/l) in 14 samples 5-10 ug/l in 10 samples 11 ug/l in S.Farmingdale Well 4-1 50 ug/l in S.Farmingdale Well 6-2 260 ug/l in S.Farmingdale Well 6-1
Tetrachloroethylene	- not detected (<2.5 ug/l) in 27 samples

During the meeting, Dr. Axelrod proposed a guideline to be used for assessing use of individual wells containing organic compounds. One criteria for taking a well out of service would be determination of a trichloroethylene level of greater than 50 PPB. A second criteria would be a total organic concentration of greater than 100 PPB compounds to be included in the group would be di, tri, and tetrachloroethylene, trichloroethylene, chloroform, and carbon tetrachloride.

January 17, 1977 - Thirteen water samples were collected in various public water supplies in Nassau County and delivered to the NYSDH laboratory in Albany via air freight. Analysis of these samples for the presence of vinyl chloride, di, tri, and tetra chloroethylene, chloroform, carbon tetrachloride, benzene, toluene, and total volatile organics along with Naphalene, Di butyl phthalates, fluorene, and ctyl phenols was requested. The samples were collected from the following wells:

GAC	Wells 2, 3, 13, 15, 16
Bethpage State Park	Wells 1, 3
So. Farmingdale W.D.	Wells 6-1, 6-2, 1-3, 1-1, 2-1
New York Water Service	Well 18

January 18, 1977 - Dr. Schell advised Mr. Padar in a memo of his conversation with Dr. David Axelrod on January 17, 1977. During the conversation the following information was obtained:

1. Recently announced organic chemical limits should be considered to be "interim level guidelines" which are to be considered "official" but will not be promulgated in a letter or memorandum from the NYSDH.

2. The "guidelines" are as follows:

vinyl chloride	10 ppb
trichloroethylene	50 ppb
total halogenated hydrocarbons	100 ppb

(i.e., chloroform, trichloroethane, trichloroethylene, tetrachloroethylene, vinyl chloride)

3. The "guidelines" are based on extrapolations for animal bioassay data which would, in a lifetime (70 years) exposure result in one additional cancer death per million population.

Mr. Padar recommended to Dr. Dowling that the Department prepare a request for a supplementary budget appropriation of $150,000 for staff augmentation to properly address organic compounds in drinking water, identify and abate sources of organic compounds, and conduct other pressing environmental health investigation, correction, and enforcement programs.

February 7, 1977 - NCDH chronological record relating to control of Hooker wastes. Attachments from APC refers to filter press and to vinyl chloride emissions.

March 7, 1977 - Internal memo attached to January 5, 1977 lists.

June 22, 1977 - Letter Hooker to NCDH. Results of analyses on 3 wastewater samples determined by 2 methods in duplicate showed no detectable vinyl chloride; i.e., less than 1 ppb.

July 6, 1977 - Letter from NYSDEC, Albany, to private citizen in Levittown, informs citizen only discharge at Hooker is non-contact cooling water, industrial waste is incinerated.

Undated letter from citizen to NCDH with above letter attached requesting assurance that the contamination of wells by vinyl chloride is not continuing since Hooker still has discharges.

July 15, 1977 - Internal memo NCDH referring to need for information to answer citizen's letter.

July 29, 1977 - Internal memo NCDH giving information to management to answer citizen's letter request, i.e., no discharge of vinyl chloride, incineration of wastes, permit situation.

August 4, 1977 - NCDH received copy of letter dated May 19, 1977, from SHD Labs. to NYSDEC, Stony Brook, refers to results from samples taken at Hooker and Grumman on Jan. 4, 1977. Results are estimates - shows Hooker concrete holding tank had 20 to over 390 ppb of halo-organics. One other sample showed no detectable halo-organics.

August 12, 1977 - Letter NCDH to NYSDEC, Albany, transmitting completed Hooker application form "C" dated 8/11/77, and draft permit.

August 23, 1977 - Wastewater sample by NCDH taken from sump at SE corner of Hooker property. Results completed 9/16/77. Found less than 5 ppb 1,1,1 trichloroethane, carbon tetrachloride, bromodichloromethane, chloroform, and trichloroethylene. Found 2 ppb tetrachloroethylene.

March 22, 1978 - Letter from NYSDEC to Hooker enclosing draft permit and notice of application. For boiler blowdown water of 30,000 gpd and 4000 gpd of sanitary waste.

May 31, 1978 - Letter from NYSDEC to Hooker enclosing permit

October 27, 1978 - Inspection of Hooker site by NCDH reveals boiler blowdown sump and cooling tower overflow sump.

December 15, 1978 - Conference with NCDH at Hooker to discuss initial analysis of boiler blowdown.

January 15, 1979 - Conference with NCDH at Hooker re: analysis and change of boiler chemicals.

May 3, 1979 - Internal NCDH memo. Recollections of personnel regarding disposal of waste drums. Due to low flashpoint of material, some drums sent to Firemen's Training Center to burn.

May 8, 1979 - NCDH letter to A.G.'s office indicating lack of knowledge at NCDH regarding waste drum disposal and requesting A.G. to request information from Hooker.

First mention of AG-1

May 9, 1979 - NCDH letter to NYSDEC Commissioner requesting info on records of permits and samples.

May 9, 1979 - NCDH letter to NYSDH Commissioner requesting info on records of permits and samples.

May 15, 1979 - NCDH letter to TOB - DPW forwarding copies of Ruco letter to NCDH, Aug. 13, 1965, and NCDH letter to Ruco, Aug. 23, 1965, giving permission to dispose of drums of waste at TOB landfill. Also requests info of TOB regarding records of amounts and dates disposed.

Attachment 6-7

April 24, 1979

NARRATIVE TO ACCOMPANY CHRONOLOGICAL RECORD OF THE NASSAU COUNTY DEPARTMENT OF HEALTH RELATING TO THE REGULATION OF INDUSTRIAL WASTES OF THE HOOKER CHEMICAL CORPORATION PLANT (FORMERLY PLANT SITES OF INSULAR CHEMICAL CORP. & RUCO (RUBBER CORPORATION OF AMERICA) AT HICKSVILLE, NEW YORK

I. CORPORATE BACKGROUND

Department records start in 1955. Insular Chemical Company and Rubber Corporation of America (Ruco) owned adjacent properties at New South Road in Hicksville. However there is evidence to show that Ruco was at this location and discharged to a leaching basin for seven years previous to 1955. A special affiliation existed between the two companies as evidenced by their sharing a pilot plant on Insular's property in 1955 and also shared two private water supply wells. After March 3,1956 there are no references to Insular Chemical Company. There is a gap in our knowledge of corporate affiliation until August 13,1965 when a letterhead shows a new affiliation as "Rubber Corporation of America - A Hooker Chemical Corporation Subsidiary". An engineering report of May 16,1968 from H_2M to Ruco refers to "for the Hooker Chemical Corporation - Ruco Division". This corporate title continued to August 11,1977 when in a SPDES application the company was listed as "Hooker Chemical and Plastics Corporation - Ruco Division".

II PVC Production, Waste Disposal, and Permits

Apparently a pilot plant was shared by Insular and Ruco prior to and after 1955 in which various types of unknown (to NCHD) chemicals were produced. It appears that one such process involved a technique for producing PVC as evidenced by applications for discharge permits and an engineering report of 7/18/55 which describes production plans and wastes produced from the PVC manufacturing process. Wastewater was said to be

discharged to an open recharge basin on the property of Insular Chemical. Estimated wastewater discharge from the proposed production was 24,600 gpd. It was reported that vinyl chloride monomer was inherent in the waste during processing but was completely vacuum stripped prior to discharge of the wastewater. How ever, an assessment of tests of the wastewater from the pilot plant by NYSHD indicated this waste would present problems of odor and taste in the groundwater and would eventually clog the recharge basin. It is unclear whether the plans and applications from Insular Chemical in 1955 for a permit to discharge sanitary and industrial wastes were approved or denied by NYSHD.

By 1958 there is evidence that Ruco now owned and operated the Insular Chemical property and facility and were engaged in the manufacture of rubber, plastics, and kindred products such as shower curtains and upholstry materials. These products would infer a good likelihood of including PVC materials. Process wastewater discharges were at the level of 30,000 gpd but there was no mention of vinyl chloride in the discharge. In 1958 a hearing before the N.Y. State Water Power and Control Commission was held to consider Ruco's application to increase annual water pumpage from two existing wells. During the hearing Ruco was advised plans for a wastewater treatment facility would have to be submitted for approval by NYSHD unless water remained of drinking water quality. The wastewater in Ruco's processing was described at this time as containing "oily and solid materials." There was no mention of vinyl chloride or other organics in the

wastewater. There is no evidence that Ruco did indeed submit plans for wastewater treatment at this time.

Nevertheless Ruco continued some kind of processing operations with the consequent generation of waste discharges. By 1960 Ruco again requested permission to increase their water pumpage, this time more than doubling the pumping rate. Some of the wastes were being drummed for storage on site and were not identified as to composition. There is some evidence that Ruco was considering the removal of these drums by industrial scavengers at the request of NCDH.

Around the general time period 1960 - 1964 NCDH had a reduced engineering staff and was also forced to concentrate its efforts on evaluating and processing permit applications for private sewage treatment and disposal systems, in particular from realty subdivisions. Consequently little information was obtained regarding operations at Ruco, as represented by the filed records.

In 1964, as a result of inspections and a survey at Ruco, it was clear that Ruco was manufacturing PVC resin, latex, plasticizers and plastic products. Raw materials included vinyl chloride. The wastewater discharges resulted from each of the manufacturing processes. However, the discharges were not monitored on any regular basis and contaminants were therefore not identified. At this time there was no evidnece of the existence of any permits relating to the discharges.

It is important to note that in 1965 a significant development occurred in the disposal of wastes by Ruco, now identified as a subsidiary of Hooker Chemical Corp. Permission was requested of and approved by NCDH to dispose of drummed wastes at the Syosset landfill. The weekly waste disposal was described as approximately 6 drums of non-soluble coagulated latex and 12 drums of carbon black filter cake (containing 20% water soluble salts). ~~At this time it is not possible to ascertain if the~~ It was ascertained from NCDH personnel that (T) Oyster Bay gave final approval to accept these wastes at the Syosset landfill ~~nor~~ but no one now there knows the quantity and quality of the wastes.

The records do show that the Syosset landfill was abandoned in 1965 for garbage and refuse and for industrial waste in 1976 after rough grading. Final grading plans have been submitted to NCDH but no date for implementation has been established. A portion of the site is currently used for leaf composting. There are presently no known problems regarding final cover, leachate or methane gas.

As part of the recent 208 study, groundwater samples were obtained adjacent to the Syosset landfill at depths of 200, 350, and 500 feet. None of the samples analyzed for organic and inorganic chemicals exceeded the drinking water standards except for iron (0.69 mg/l) in the 350 foot well. However, the geology report indicated a 7" thick clay formation at a depth of about 65' which may prevent the vertical transport of leachate in the immediate area of the landfill. (The depth of the landfill is also approximately 65').

It should also be noted here that the present day absence of any obvious contamination problems associated with the landfill does not necessarily imply there will be no future problem. Although drummed wastes may have contained toxic contaminants, the drums may not have started to leak seriously as yet.

The most recent inspection of Hooker by NCDH on May 21, 1979, revealed that Hooker is generating miscellaneous chemical wastes amounting to 14 drums per week. Approximately 700 drums of waste were on site reportedly because of the temporary shut down of Rollins in New Jersey, the disposal site. Rollins has reopened recently and the 700 drum inventory is planned to be sharply reduced in the near future.

There is a gap in the records for the period 1965-1968. However, there is an engineering report in 1968 from H2M to the Company now identified as Hooker Chemical Company - Ruco Division. This report indicates that resins and latexes are still being manufactured and with the addition of esters. It also identifies various buildings and various waste streams but not the contaminants. From the appearance of the waste streams it was the opinion of H2M that these would impair the best usage of the groundwater and would require treatment. However, there are no records immediately following which would indicate an application for a discharge permit was made, i.e. 1968 - 1970.

Hooker was informed in 1970 by NCDH that an inspection (July, 7 1970) showed Hooker was discharging liquid wastes and in accordance with Article 12 of the NYS Public Health Law Hooker should supply an engineering report and apply for a discharge permit. Apparently as a consequence of this directive, there was activity at Hooker over a three-year period, 1970 - 1973, which included several engineering reports. Processing and waste streams were identified and various treatment schemes were proposed. Reference was made to an increase in the drumming of various wastes from the pilot plant for treatment or disposal via industrial scavenger. No mention was made of the Syosset landfill.

It could be speculated for lack of file records that Hooker continued their evaluation, monitoring and other tests to obtain information leading to wastewater treatment until April 1975 when they finally submitted a SPDES application which contained provisions for 5 outfalls and also provided monitoring for dissolved organics and phenols. However, in a most significant move a few weeks later in May 1975 they submitted another SPDES application, form D, and a letter stating that the PVC production plant was closed and that two former outfalls were no longer discharging. By October 1975 Hooker claimed they had cleaned the PVC and ester plant sumps and also submitted a program to minimize or eliminate leaching of possible contaminants into the groundwater. No information was given as to the disposal site of the debris from the cleaned sumps. There is reference to a telecon in a handwritten note of Dec. 1976 indicating NCDH advised Hooker to dispose of PVC sludge by hauling to New Jersey or New City for incineration. However, it is not clear if this was the scrapings from the sumps.

Meanwhile on or about November 1976 the presence of vinyl chloride was detected and resulted in the shutdown of three private drinking water wells at Grumman Aerosapce Corp. (GAC). An extensive investigation of this occurrence and its relation to Hooker Chemical's

use of vinyl chloride was carried out by NCDH and NYSDH. This is discussed further in another section dealing with water quality.

A revised SPDES form "C" application was received from Hooker Chemical in August 1977 and a draft permit issued by NYSDEC in March 1978. A final permit was issued in May 1978. The permit covered sanitary and boiler blowdown discharges. Hooker's operations actually included cooling tower overflow also. The non-sanitary discharges contained special corrosion-control chemicals which are monitored but have no relation to any production processes at Hooker. Presently, all process wastes are being incinerated. There are no process wastewater discharges.

It should be summarized at this point that prior to 1978 there is no evidence in the records at NCDH that Hooker Chemical or any of the affiliated companies at their site, dating back to 1955, ever received a wastewater discharge permit. Telecon inquiries to Albany indicate corresponding lack of evidence of any permits at NYSDH and NYSDEC. There are records of valid air pollution control permits dating back to at least 1969.

III. Sampling -

Relatively few wastewater samples were taken at the Hooker Chemical site during the entire 1955 - 1979 time period. Earliest samples were concerned with taste and odor (1956) or in the case of drummed waste (1960) negative results for phenols were reported. However, in 1974 about a year prior to shutdown of the PVC process, samples of wastewater were taken for organic analysis by the EPA. Over 1000 ppb of vinyl chloride and acetic acid and larger amounts of octyl alcohol were found in the waste lagoon from Plant #2, the PVC manufacturing facility. In the Plant #1 condenser water lagoon, traces were found of trichloroethylene and tetrachloroethylene and more than 100 ppb of vinyl chloride and octyl alcohol.

About one year later in 1975, samples from several lagoons contained "high" levels of iron, zinc, silicates, ammonia and nitrites and had a musty odor and high turbidity. One sample had 0.35 mg/l phenols, which is considered a high level.

Later in 1975, after the PVC operation was closed down, a composite sample of lagoon wastewater and pre-incinerator

wastewater was found to contain 50 ppb of vinyl chloride, 80 ppb trichloroethylene and 8,000 ppb of tetrachloroethylene plus other unknown chlorinated organics.

There was no subsequent evidence of any organic contaminant discharge at Hooker. Samples from the cooling tower overflow sump in 1977 showed very low or non-detectable levels of 1,1,1 trichloroethane, trichloroethylene, and tetrachloroethylene, carbon tetrachloride, chloroform and bromodichloromethane. An analysis of a split sample by Hooker showed less than 1 ppb of vinyl chloride in their cooling tower pit, boiler blowdown sump and concrete holding tank. NYSDH labs' analyses of the split samples from the concrete holding tank showed 20 to over 390 ppb of 1,1,1 trichloroethane, trichloroethylene and tetrachloroethylene; apparently the NYSDH labs did not have a suitable analytical technique for vinyl chloride.

IV. Chemical Usage and Waste Control -

The discovery of organic contaminants in the Grumman wells in 1976 led to a program for surveying all of the industries in Nassau County for their usage of chemicals and disposition of wastes. It was found that the only Company in Nassau County to use vinyl chloride was Hooker Chemical and Plastics Corp.

In fact, there is no other evidence that any other industry in the County used vinyl chloride.

Lists of chemical usage were obtained from Hooker and showed that for the years 1970 to 1975 vinyl chloride was one of the 90 - 122 chemicals listed. A study of these chemicals revealed that 34 to 45 of them were listed as toxic in the NIOSH registry, including vinyl chloride.

Since the survey all industries using organic chemicals have been brought under SPDES permit controls. This also includes those who are generating organic wastes, not discharging them but having DEC registered industrial waste scavengers remove the wastes from the County.

Water Quality and Effluent Wastewater Standards - Water quality standards were not always directly applicable or appropriate, and, for that matter, suitable and adequate, to control the discharge of industrial-process waters from a plant such as the Hooker Chemical Company. During the period prior to March 1967 when the groundwater classifications and standards were adopted as a new Part 703, Title 6, NYCRR, by the New York State Water Resources Commission, industrial-process discharges to the groundwater were reviewed by the NCDH and forwarded to the NYSHD for approval for conformance with the Public Health Service Drinking Water Standards, 1946, and revised in 1962, promulgated by the U.S. Department of Health, Education and Welfare. While the latter called out a standard only for phenolic compounds (less than 0.001 ppm) as far as organic chemicals were concerned, the March 1967 standards were little improved since phenols were set at 0.002 mg/l and carbon chloroform extract residue (CCE) in concentration of 0.4 was added. CCE is a mixture of organic chemicals that would be adsorbed on activated carbon and desorbed by chloroform in the laboratory analysis.

It wasn't until 1964? and revised in 1976 that Part 72, Title 10, New York State Administrative Codes, Rules and Regulations listed specific organic pesticides, herbicides and insecticides.

Effective September 1, 1978, new and modified classifications and standards for groundwaters of New York State and discharges thereto were enacted as a new Part 703, amending a 703 that was enacted in 1972 shortly after the NYSDEC was formed. The new Part 703 further clarified effluent or discharge limitations by providing a schedule of quality standards that were generally twice those of the groundwater classification for quality standards of inorganic constituents but the same for 63 listed organic chemicals. Vinyl chloride was now listed and the discharge limitation and the quality standard were set at 5.0 ug/l.

It was in Nassau County that organic chemicals were found in groundwater and drinking water supplies in the mid-1970's, but it was only until September 1978 that a State standard was promulgated for use by the Department of Environmental Conservation in reviewing and approving wastewater discharges. The State Health Department has issued interim standards and guidelines that limit single contaminants to 50 ppb and the sum not to exceed 100 ppb, except for vinyl chloride set at 10 ppb for application to drinking water supplies. Where an organic chemical is not listed in Part 703, the State Health Department limits are applied for discharge limitation purposes.

VI Groundwater Contamination - East Central Nassau County

In December 1973, the Grumman Aerospace Corporation indicated that four of their wells had developed an odor problem, and two others were previously abandoned for the same reason. Various contaminants were thought to contribute to this problem, but as described by one sampler, a vinyl odor to the water implicated Grumman's neighbor, the Ruco Division of Hooker Chemical Company, which as far as our records indicated were the only users of vinyl chloride in the area. In sampling through 1978, 3 of 12 wells of Grumman were positive for vinyl chloride with the maximum detected level being 50 ppb.

A chemical engineer of Hooker said that two major discharges from their plant consisted of phenols and polyvinyl chloride and latex derivatives. Hooker Chemical Company's lagoons revealed several types of organics which could be the source of the taste and odor problems in the Grumman water supply wells. The Department requested assistance of the EPA laboratory to do organic analyses as well as the assistance of the NYSHD laboratory. NCDH initiated a full-scale evaluation of Hooker Chemical Corporation's usage of chemicals to provide a basis for chemical testing required.

Grumman water supply contained vinyl chloride, methane, and ethylene, based on gas chromatograph and mass spectrometer analyses.

While there were various logistic problems in getting sufficient analyses performed, the extremely difficult halogenated organic analyses had to be thoroughly researched in order to explain the source of the water supply problem and thoroughly investigate the industrial discharges from Grumman and surrounding industrial plants. Since no standards existed for the organics found in the aforementioned, the State Department of Health was solicited to provide maximum levels that would be permitted in drinking water.

No public supply wells of neighboring districts showed any vinyl chloride in 60 wells tested, although they did contain trace organics of other halogenated hydrocarbons. As far as the vinyl chloride contamination in the ground, a source other than Grumman appeared to be a reasonable explanation. However, Grumman had been using and discharging the various other organics noted in their own wells and picked up in trace quantities in some of the public water supply wells. Restriction of the use of wells with odors and the consideration by the Corporation to develop alternate water sources, as prescribed by a consulting engineer experienced in groundwater hydrology, represented some of the impacts of the areas contamination by organic chemicals.

The EPA indicated that the presence of vinyl chloride and tetrachloroethylene in high concentrations in the Grumman wells necessitated a recommendation that the water not be used for

drinking purposes unless suitably treated. The State Health Department formulated interim guidelines for organics in drinking water supply and limited any one contaminant to 50 ppb and no combination adding up to over 100 ppb. However, the guideline for vinyl chloride was more restrictive, being set at 10 ppb. Vinyl chloride is considered to be a known carcinogen, and the guideline was based on extrapolations from animal bio-assay data which would in a lifetime of exposure result in one additional cancer death per million population.

No funds were forthcoming from the EPA to finance a contamination study, and the Nassau-Suffolk 208 Management Study might be the avenue for this investigation. The Executive Director of the Nassau-Suffolk Regional Planning Board charged with the direction of the 208 Area-Wide Wastewater Management Study agreed that the matter was a proper one for their investigation, in spite of concern of others that it was too specific, affecting too small an area.

A period of extensive sampling for organic chemicals followed in conjunction with State Department of Health and USEPA support. Capability to analyze organic chemicals was increased by the State and NCDH, but the Long Island 208 Study

to assess the cause-and-effect relationship of organic contamination in Bethpage groundwaters and the development of effective management solutions was not accepted. In January of 1977, additional recommendations were made by the NCDH calling for federal and State agencies to intensify their laboratory support to the Department, the EPA consider the public funding of water quality to the Long Island area; County supply supplementary allocation to the Department to deal with the problem.

The State Health Department explained the problems in establishing guidelines for organic contaminants since little is known concerning the effects of various contaminants on human beings. They further indicated that while exposure to a large number of carcinogens occur, the goals should be to reduce concentration in drinking water to zero. They indicated that allowable limits for organics would not be established by the EPA or NYSHD and preferred that an assessment of health risks would be made for various levels encountered. However, the interim guidelines previously established are being used as drinking water standards.

Grumman's use of their private supply wells is actually cleaning up the water in the ground because in the process aeration takes place, and the discharge water is better than what was originally

pumped with no addition of contaminants, due to this aeration.

No further action was taken by Grumman to seek redress from any other industry in the area since Grumman itself had discharges of process waters containing most of the contaminants showing up in their own drinking water wells.

VII Carcinogenicity of Vinyl Chloride - A halogenated hydrocarbon, vinyl chloride is an important monomer for polymerization in the manufacture of polyvinyl chloride. As late as 1974, vinyl chloride was not listed as a carcinogen by State and Federal health and industrial hygiene agencies. There is record, however, that vinyl chloride was involved in two accidental deaths in industry with pathological findings of cyanosis, conjunctival burns, congestions of internal organs, especially lungs and kidneys, and failure of the blood to clot. Animal tests on guinea pigs and rats of vinyl chloride in air produced the same symptoms. In the 1976 National Institue of Occupational Safety and Health Register, vinyl chloride was listed as a carcinogen. Similar lists prepared by the State Health Department in 1977 and the National Academy of Sciences in 1976, and as clarified in 1977, indicated vinyl chloride as a known human carcinogen, one of few considering the large number of suspected carcinogens listed.

The "Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment" adopted by the American Conference of Governmental Industrial Hygienists has been revised downward over the last few years. The 1978 OSHA concentration

vinyl chloride

limits for gases for a maximum allowable exposure (8-hour weighted average) is 1 ppm. The NYSHD's drinking water guideline was established at 10 ppb in 1977, while other organics were set at 50 ppb. The reason for the lower level for vinyl chloride was that it had been established as a human carcinogen.

A slight inconsistency with the NYSHD 10 ppm guideline for vinyl chloride exists in Part 703, Title 6, NYCRR, adopted in 1978. Vinyl chloride standards in Part 703 were set at 5 ppb for the classification of the groundwater for drinking purposes and effluent limitation for the discharge of a contaminated liquid.

STATE OF NEW YORK DEPARTMENT OF HEALTH

MEMORANDUM

Restricted Long Island P.W. wells

Attachment 6-8

To: Mr. Orndorff

From: Mr. Lister

Date: July 30, 1982

Subject: Community Water System Sources Closed Due to Contamination

The attached list represents the most recent update on community water system source closures.

Attachment

cc: Dr. Hetling
Mr. Smith
Dr. Kim
Mr. Grossman
Section Chiefs

COMMUNITY WATER SYSTEM SOURCES CLOSED DUE TO OR IC CONTAMINATION, SUBSEQUENTLY REOPENED
AS OF JULY 1982

BLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
dicott	Broome	5	1/80	2/80	1,1,1-trichloroethane	Industrial Discharge
thpage WD	Nassau	9	12/13/76	3/16/78	tetrachloroethylene	Unidentified
rmingdale (V)	Nassau	2-1	12/28/76	6/13/77	trichloroethylene	Unidentified
ainview WD	Nassau	3-1	12/28/76	6/13/77	trichloroethylene 1,1,1-trichloroethane	Unidentified
Farmingdale WD	Nassau	1-1	12/28/76	6/13/77	1,1,1-trichloroethane trichloroethylene	Unidentified
		6,1,6-2	1/17/77	6/13/77	trichloroethylene	Unidentified
ity of Glen Cove	Nassau	21	6/13/77 11/14/78	10/30/78 4/11/79	tetrachloroethylene trichloroethylene	Unidentified
		2s	8/14/78	4/11/79	tetrachloroethylene	Unidentified
anhasset-Lakeville D	Nassau	12	11/1/77	7/31/80	trichloroethylene tetrachloroethane	Unidentified
ew York Water Supply orp.	Nassau	2s	9/20/78	5/25/79	tetrachloroethylene 1,1,1-trichloroethane dibromochloroethane	Unidentified
oosevelt Field WD	Nassau	3	10/20/78[1]	6/80	trichloroethylene	Commercial and Industrial Discharge
reenport	Suffolk	6-1	8/30/79	10/80[2]	aldicarb	Agricultural Applications

[1] Well Deepened
[2] Granular Activated Carbon filters in operation.

PUBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
Port Washington	Nassau	5	3/9/81 6/29/81	3/17/81 9/11/81	vinyl chloride	Unidentified
Jamaica WS	Nassau	28	9/20/78 12/26/80	5/16/79 6/4/81	trichloroethylene	Unidentified
Mineola	Nassau	#4	6/25/81	7/21/81	1,1,2-trichloroethylene	Unidentified
Suffolk County Water Authority	Suffolk	Green Ave. #7	1/77	10/77	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Church St. #1-Holbrook	8/15/77	1/12/78	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Mill Lane	9/77	11/77	tetrachloroethylene	Unidentified

AS OF JULY 1982

UBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
estal	Broome	1-1	6/80	-	1,1,1-trichloroethane	Industrial Discharge
		4-2	2/80 11/80[2]	6/6/80[1] -	1,1,1-trichloroethane	Industrial Discharge
lean	Cattaraugus	Richmond Ave.(18M)	2/81	[3]	trichloroethylene	Industry Suspected
		Torrey Ave.(37M & 38M)	2/81	[3]	trichloroethylene	Industry Suspected
lmira WD	Chemung	Kentucky Ave.	9/80	-	trichloroethylene	Industrial Discharge
ohnstown	Fulton	2	4/78	[4]	taste & odor	Landfill
aledonia	Livingston	2	2/79	-	gasoline, benzene toluene, xylene	Ruptured Gas Tank
ethpage WD	Nassau	6-1	12/3/76	-	trichloroethylene	Unidentified
icksville WD	Nassau	5-1	8/25/77	-	1,1,1-trichloroethane	Unidentified
		3-1	12/3/76	-	1,1,1-trichloroethane	Unidentified
ericho WD	Nassau	10	5/6/77	-	1,1,1-trichloroethane	Unidentified
I Water Corp.	Nassau	1-15	5/6/77	-	1,1,1-trichloroethane	Unidentified
ity of Glen Cove	Nassau	20	6/23/77	-	trichloroethylene	Industrial Discharge
		22	6/23/77	-	trichloroethylene tetrachloroethylene	Industrial Discharge
		1s	7/7/77	-	tetrachloroethylene	Unidentified

[1] Granular Activated Carbon filter unit installed; failed 11/80.
[2] Well water being pumped to waste.
[3] Used only during periods of peak demand.
[4] Voluntary closure; well may be used as last resort.

PUBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
Garden City Park WD	Nassau	5	12/2/77	-	tetrachloroethylene	Unidentified
		4	4/6/81	-	tetrachloroethylene	Unidentified
Hempstead (V)	Nassau	6	1/23/78 8/8/80	8/31/78 -	trichloroethylene	Unidentified
Roosevelt Field WD	Nassau	2	9/25/79 10/3/80	7/24/80 -	trichloroethylene	Commercial Discharge
Niagara Falls	Niagara	Emerald Channel Intake (surface source)	9/5/79	-	tetrachlorobenzene trichlorobenzene hexachlorocyclopentadiene hexachlorobutadiene	Industrial Discharge
Brewster	Putnam	Well Field #1	10/78	-	trichloroethylene tetrachloroethylene	Industrial Discharge
Jamaica WS Co.	Queens	41	11/13/80 8/80	6/80 -	trichloroethylene tetrachloroethylene	Unidentified
		54	9/80	-	tetrachloroethylene	Unidentified
		6D	11/13/79	-	tetrachloroethylene	Unidentified
		6	9/80	-	tetrachloroethylene	Unidentified
		29A	7/16/80	-	trichloroethylene tetrachloroethylene	Unidentified
		24A	11/26/79 9/80	6/80 -	tetrachloroethylene	Unidentified
Suffern	Rockland	1&2	3/79	-	1,1,1-trichloroethane	Industrial Discharge
		4	11/78	-	1,1,1-trichloroethane	Industrial Discharge

UBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
. Farmingdale WD	Suffolk	2-1	1/77 12/1/77	5/31/77 -	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
niversity Garden partments	Suffolk	1	5/22/78	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Commercial Discharge
. Huntington WD	Suffolk	2	9/29/78	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
uffolk County Water uthority	Suffolk	Albany Ave. #1	2/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Albany Ave. #2	5/20/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Albany Ave. #3	1/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Meade Dr. #1	11/4/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Meade Dr. #2	1/5/78	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Locust Ave. #2	11/4/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified

PUBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
Suffolk County Water Authority Continued	Suffolk	Locust Ave. #3	8/30/78	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Oval Dr. #1	12/21/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Oval Dr. #2	3/21/77	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		Lincoln Ave. #1	5/31/77	8/16/77	1,1,1-trichloroethane trichlorpethylene	Unidentified
			7/14/78	-	tetrachloroethylene	
		Bellrose Ave. #1	6/16/80	-	trichloroethylene	Unidentified
		Long Springs Rd. #2	9/11/80	-	aldicarb	Agricultural Applic
		Samuel St. #1	11/77	2/78	tetrachloroethylene	Unidentified
			10/80	-		
		Samuel St. #2	10/22/80	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
		E. Forks Rd. #1	10/6/80	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified
Brookhaven Nat. Lab.	Suffolk	2	3/20/80	-	tetrachloroethylene	Unidentified
Brentwood WD	Suffolk	1-1	5/80	-	benzene	Ruptured Gas Tanks
Bedford WD #1	Westchester	Katonah	1/79	-	tetrachloroethylene	Unidentified

JBLIC WATER SUPPLY	COUNTY	WELL NO.	DATE CLOSED	DATE REOPENED	CONTAMINANT	CONTAMINATION SOURCE
[Water Corp.	Nassau	18-2	9/30/80 (Res.)	-	1,1,2-trichloroethylene	Unidentified
		24-1	9/30/80 (Res.)	-	1,1,2-trichloroethylene chloroform	Unidentified
ırden City Park WD	Nassau	#6	7/1/81	-	tetrachloroethylene	Unidentified
:neola	Nassau	#5	7/9/81	-	chloroform	Unidentified
:vittown WD	Nassau	#3	8/25/81	-	nitrate	Unidentified
ıadilla	Otsego	Clinton St. #1	1/82	-	benzene vinyl chloride	Unidentified
		Clinton St. #2	1/82	-	1,2 dichloroethane	
ımaica Water Supply	Nassau	16	10/20/78	-	tetrachloroethylene	Unidentified
Huntington WD	Suffolk	1	1/2/80	-	1,1,1-trichloroethane trichloroethylene tetrachloroethylene	Unidentified

Cey

New York State Department of Environmental Conservation

Attachment 6-9

cc: Joe Sheehan

FYI. JR

MEMORANDUM

RECEIVED

DEC 2 1980

BUREAU OF HAZARDOUS WASTE MANAGEMENT PROGRAMS

File: Reg 1 IPT File

TO: M. Peter Lanahan
FROM: John Greenthal
SUBJECT: Hooker (Long Island)
DATE: December 1, 1980

This memorandum will provide you with a status update of the referenced matter. Michael Tone and Vance Bryant will be visiting the Grumman Aerospace site this week in order to familiarize themselves personally with the terrain.

On November 13, 1980, at the Region 1 Office in Stony Brook, a meeting was held concerning Hooker's Hicksville operation. Present at this meeting were Joseph Schechter and Marvin Fleisher of the Nassau County Health Department, Bronius Nemickas of the U.S. Geological Survey, Morris Bruckman and Joan Scherb of DEC Region I, and John Greenthal, Vance Bryant and Michael Tone of the Hazardous Waste Compliance Team. The purpose of this meeting was to brief the members of the Compliance Team regarding the industrial waste storage and disposal practices of Hooker.

The Hooker waste storage and disposal practices may have resulted in the creation of six separate sites which present a potential hazard to public health or the environment. The extent of actual contamination and the threat of potential contamination vary from site to site. The quality and quantity of evidence which implicates Hooker as a culpable disposer of industrial waste also vary from site to site. However, the preliminary conclusion which may be drawn is that Hooker is responsible for contaminating or creating the potential for contamination of the Long Island ground water. The development or refinement of the legal case surrounding each particular site awaits further investigation and testing.

The southeast regional office of the Compliance Team has begun the field investigation with a view toward further linking Hooker to each of the landfill sites. Vance Bryant has begun to develop a specific site hydrogeological study of the Hooker/Grumman Aerospace industrial sites. The Nassau County Health Department has dedicated personnel to support any additional testing the Compliance Team deems necessary. One must keep in mind, however, that as more investigative and test data become available, the strength of the case against Hooker may be enhanced or weakened.

Information known about each site is summarized below:

GRUMMAN AEROSPACE CORP.

Polyvinyl chloride (PVC) was manufactured at Hooker from 1956 until May of 1975. The water effluent from the Hooker PVC production process was discharged into a recharge sump located on the Hooker site. Among the wastes from the PVC operation was excess vinyl chloride. In 1974, vinyl chloride was determined to be a human carcinogen. In 1975, testing revealed vinyl chloride present in the well water from the private wells located on the Grumman property, as well as in the Hooker wastewater discharged into the sump. Because of the proximity of the Hooker site and Grumman's wells, and by integrating what is generally known about the ground water flow in the area with the results of a preliminary hydrogeological study by the U.S.G.S., one may conclude the contamination of the Grumman wells occurred as a result of the Hooker waste disposal practice. The probability of Hooker's being responsible is increased when you consider that the Nassau County Health Department determined Hooker to be the only commercial producer, user or disposer of vinyl chloride on Long Island. Internal Hooker memoranda support this conclusion.

Hooker, in public hearings, as well as privately, contends that vinyl chloride is found unaccountably in drinking water as well as in the ambient air. In addition, Hooker has contested and will continue to contest the validity of the testing protocols used in measuring for the presence of vinyl chloride. In addition, Hooker will undoubtedly assert that Grumman has contributed to the contamination of its own wells.

Among the steps which must be undertaken by the Compliance Team is to obtain a site-specific hydrogeological study of the Hooker-Grumman industrial complex.

Thus far, no known public or privately instituted litigation has been commenced over this matter. The Attorney General, however, is also reviewing the existing evidence.

OLD BETHPAGE LANDFILL

An internal, confidential Hooker memorandum dated 8/21/78 reveals that Hooker disposed of industrial wastes in the Old Bethpage Sanitary Landfill. This waste stream was also identified by Hooker in the New York State Hazardous Waste Survey. In the internal memorandum, Hooker admits that: "[The] introduction of waste plasticizer into the Bethpage landfill . . . is probably the single most significant environmental pollution coming from the Hicksville site." The following table extracted from the Hooker memorandum summarizes the major chemical wastes sent to the Bethpage landfill.

	Lbs./Year
Trimellitic anhydride	10,000 lbs.
Adipic acid	27,000
Phthalic anhydride	300
Isophthalic anhydride	1,000
Maleic anhydride	1,000
PVC	400
Kane Ace	7,000
26TM & other plasticizers	240,000
Polyester	7,600
Speedi-Dri mixed organics	16,000
PVC compounds (90% PVC by content)	165,000
Spent lube oil	3,000
TOTAL	478,300 lbs.

The New York State Hazardous Waste Survey indicates that disposal of the industrial waste was performed by Mid-Island Rubbish Removal Co. In the survey filled out by Hooker, they denied knowing where their industrial waste was being disposed of. This conflicts with their internal memorandum and the information provided by the owner/operator of Mid-Island.

We are informed that the Town of Oyster Bay has just installed three monitoring wells at the landfill site. Tests of the ground water and ambient air have yet to be conducted, nor has there been any testing of ground water from neighboring wells.

As a result of an administrative notice of hearing and complaint filed August 31, 1979, negotiations were entered into with Hooker in an effort to require them to monitor the Bethpage and Syosset landfills. These negotiations were delayed while Hooker attempted to form an industrial committee to jointly sponsor the monitoring. Hooker was unable to form a committee, and the negotiations have not resumed.

The Compliance Team should initially request that testing be performed by the Nassau County Health Department on samples taken from the monitoring wells to determine if there has been ground water contamination. Also, a review of the Mid-Island, County and Town records is to be undertaken. Finally, a site specific hydrogeological study should be commenced.

SYOSSET LANDFILL

The same Hooker memorandum revealed that from 1946 until 1968 Hooker sent solid and liquid industrial waste to the Syosset Municipal Landfill. The waste was transported in drums and by tank trucks. The tank truck waste consisted of alcohols, glycols,

perchloroethylene, latex wastes, etc. According to the memorandum,

> drummed waste would include alcohol/water/ perchlor, purified latex, coagulated latex, alum, filter cake, PVC sludge, PVC floor scrapings, and reactor scrapings, vinyl chloride recovery still bottoms, spent lube oils (about 300 gallons/year) and . . . PCB therminol waste. Also drums of waste alcohol and glycol "strips" (mixture of 2-ethylhexanol and other similar alcohols, glycols such as ethylene glycol, perchloroethylene). Also some PCB therminol wastes. Solid wastes including 55 gallon drums, 5 gallon pails, pallets, 50 lb. bags, gaylords, cardboard drums, cheesecloth with latex coagulum, emptied PVC bags, emptied TMA bags, emptied adipic bags, emptied phthalic bags, emptied maleic bags. Also drums of waste filter cake (mixture of celite, decolorizing carbon, spent toluene solfonic acid catalyst, bicarbonate, and trimellitate plasticizer.) Also pallets, cardboard boxes, vinyl compound floor sweepings. Also PVC sump scrapings (combined PVC, vinyl chloride, vinyl acetate, trichloroethylene, barium and cadmium soap stabilizers). Also organic heels in drums.

No site-specific testing or monitoring has taken place, and the degree of contamination, if any, is unknown. The Compliance Team will determine the feasibility of sponsoring preliminary testing, initiate a preliminary geological and hydrogeological survey, and commence a field investigation to establish Hooker's culpability.

BRENTWOOD LANDFILL

Hooker's internal memorandum also indicates they disposed of bulk loads of solid waste scrapings taken from the PVC waste sump at a landfill in Brentwood, Long Island. Brentwood is located in the Town of Islip, Suffolk County. The Hooker memorandum indicates the name of the carters who trucked the waste, but contains no further information. To date, it has not been conclusively established which landfill was used. The possibility exists that the Brentwood Landfill, the Blydenburgh Road Landfill in Hauppauge or maybe both received the waste.

A field investigation by the Compliance Team is to be commenced to determine which landfill was used, what was disposed, when the disposal took place and what, if any, contamination resulted.

HOOKER INDUSTRIAL SITE AT HICKSVILLE

The on-site Hooker sumps have been inactive since 1975. However, core samples taken from an ester plant sump reveals organics, i.e., glycols, alcohols, perchloroethylene, adipic acid, trimellitic acid, etc.

Also, the Hicksville site contains three buried latex storage tanks and two buried latex tank trailers. In addition, there has been on-site spillage of plasticizers, alcohol, latex, PCB therminol and organics.

Nassau County Health Department personnel have occasionally observed spillage or the results of such spillage and have directed Hooker to take remedial action. However, on-site core sampling has not taken place to determine the magnitude of the contamination.

cc: Richard A. Persico
Irwin King
Eldred Rich
Donald Middleton
Joan Scherb
Norman Nosenchuck
Charles Goddard

JG/vs

7. SITE DATA

7.1 SITE SURFACE AREA FEATURES

The Hooker/Ruco Polymer Corporation site is located on New South Road, Hicksville, Town of Oyster Bay, Nassau County, New York (Attachment 7.1-1). The site is located in an industrialized area, with Grumman Aerospace Corporation located to the south and east, and Long Island Lighting Company to the northwest. The site covers an area of approximately 72 acres. The closest residential areas are to the west across New South Road, and are within 1,000 feet of the site. The surrounding topography is relatively flat. Attachment 7.1-2 shows the plant layout.

7.2 SITE HYDROGEOLOGY

The Hooker/Ruco site is located on stratified glacial deposits of sand and gravel with some thin interbedded clay lenses (see Attachment 7.2-1). There are three water bearing formations underlying the site: the Upper Glacial Aquifer (approximately 80 feet of sand and gravel), the Magothy Aquifer (approximately 580 feet of sand and some interbedded clay lenses), and the Lloyd member of the Raritan Formation (approximately 200 feet of sand) (see Attachment 7.2-2). The clay member of the Raritan Formation (approximately 150 feet) lies between the Magothy and Lloyd. There are no significant clay layers between the Upper Glacial and Magothy aquifers. For this reason, there is concern about potential contamination from surface sources.

Ground water flow is to the south and also varies seasonally due to high Grumman pumping rates (see Attachment 7.2-3). Grumman uses large quantities of ground water for cooling purposes, which influences ground water elevation and flow direction.

7.3 SUMMARY OF PAST SAMPLING AND ANALYSIS

Fourteen Grumman wells were sampled between 1974 and 1979 (Attachment 7.3-1). The list of compounds found in the ground water include vinyl chloride and six other halogenated hydrocarbons (Attachment 7.3-2). The Hooker/Ruco facility is the only known user of vinyl chloride in the area.

Ground Water

Vinyl chloride was again found in samples taken on 4 April 1980 from industrial water supply wells owned by Grumman Aerospace Corporation, whose property is adjacent to the Hooker/Ruco site (Attachment 7.3-3).

Surface Water

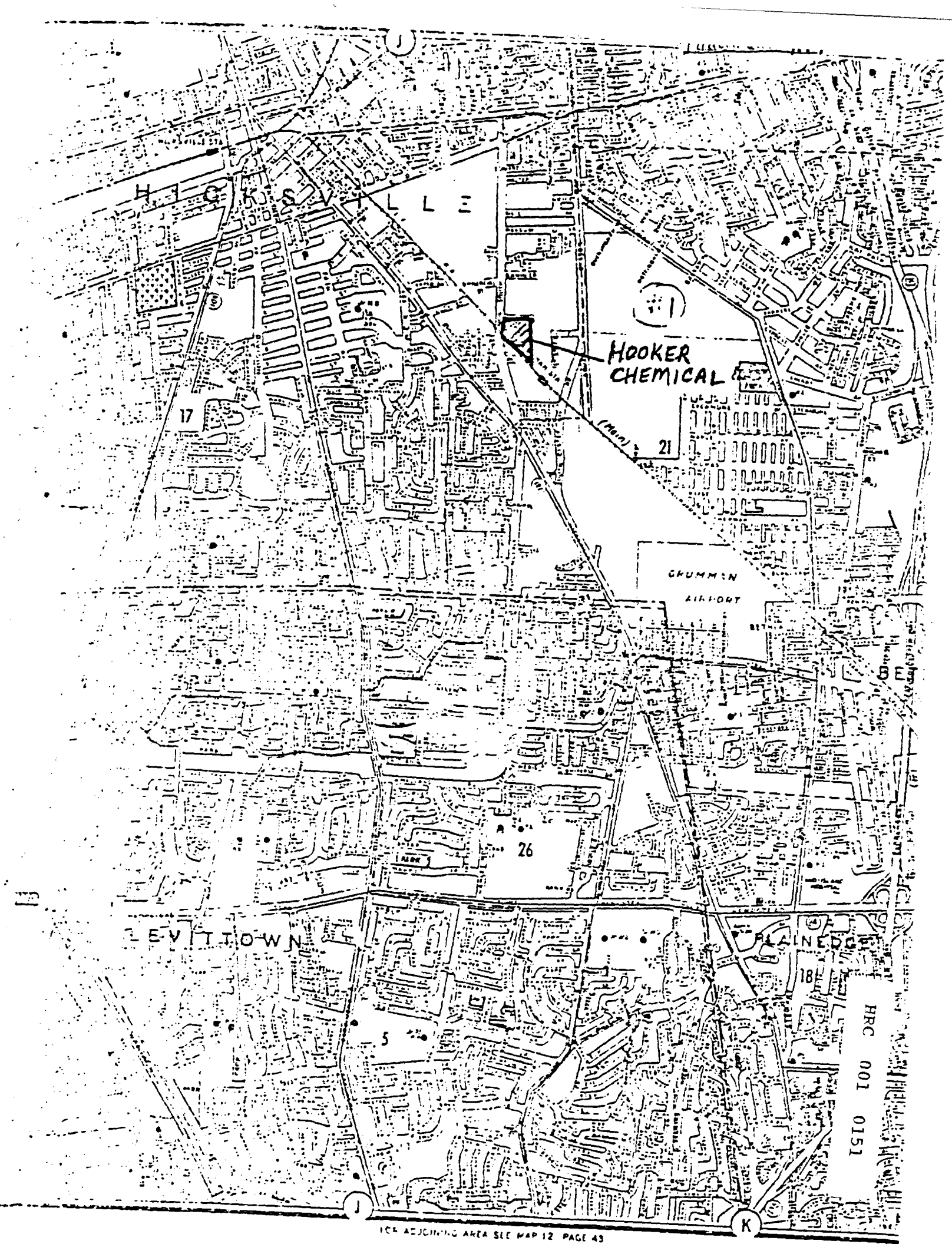
No data are available.

Air

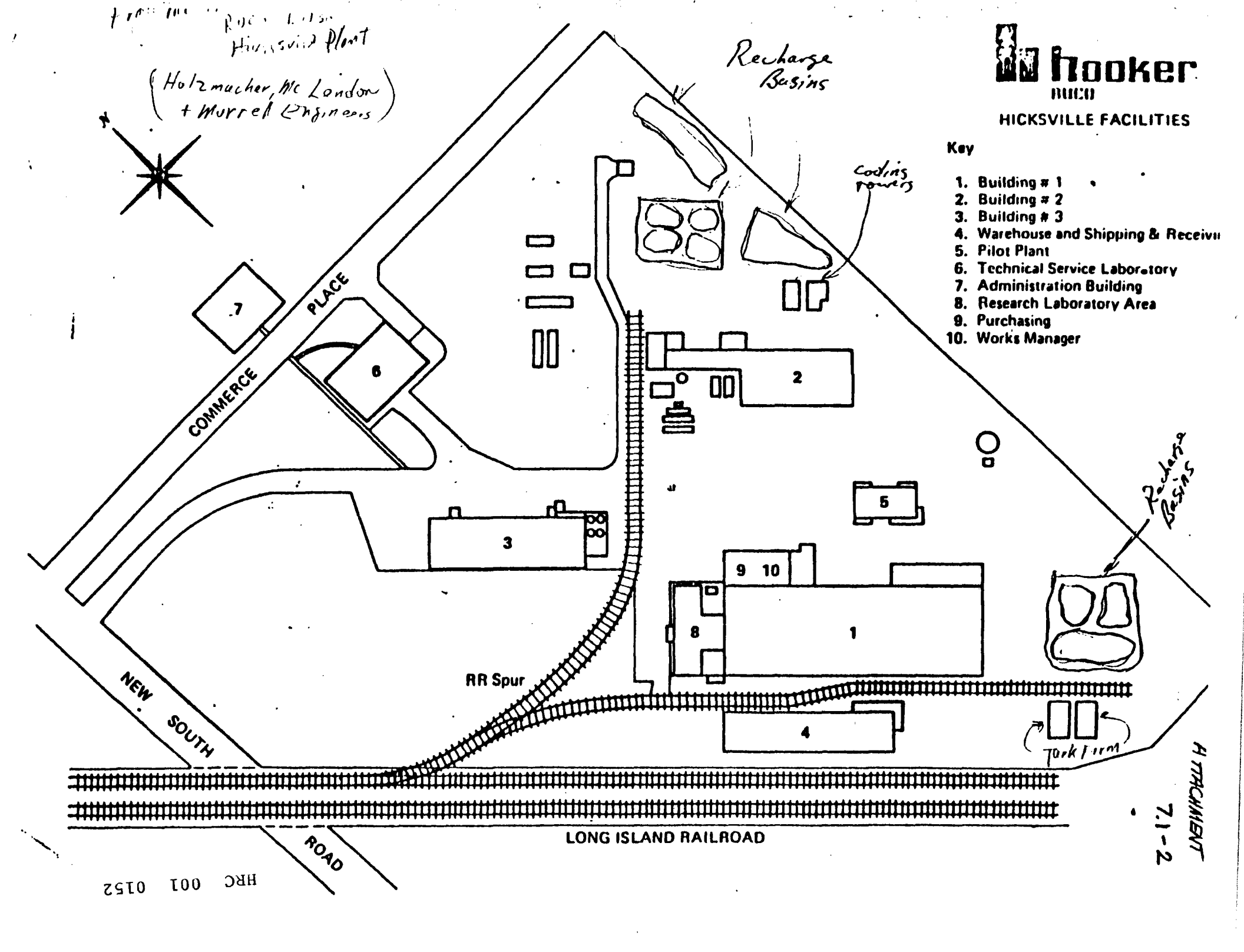
No data are available.

Soil

No data are available.



FOR ADJOINING AREA SEE MAP 12 PAGE 43



ATTACHMENT 7.1-2

HOOKER CHEMICAL - RUCO PLANT - SITE INVENTORY

Hicksville, N.Y. (Long Island)

From DoH Memo 9-

ntroduction - Public Concern:

Public concern of Hooker Chemical's Ruco Plant in Hicksville, New York Long Island) occurred as early as December 14, 1976. Hooker was cited as a rime industrial polluter during a New York State Assembly Subcommittee hearing n Health in Mineola, N.Y. In June 1979, the Nassau County Health Department eviewed, at the request of the U.S. House of Representatives' Subcommittee on versight and Investigation of the Commerce Committee, Hooker's internal reports n plant operations. The County commented in July 1979 (see Appendix A*) which ubstances were toxic and whether their disposal in Nassau County landfills con-tituted a violation of prevailing law.

Public concern also exists for on-site (Ruco Plant) disposal (since the arly 1950's) of waste water containing chlorinated hydrocarbons by use of sand umps. Waste water from the sumps directly leach into the area's sole source quifer thus creating possible potable groundwater contamination. This concern s shared in DEC's Hazardous Waste Disposal Sites Report, February 1980.

ite Description:

The Ruco Plant site covers approximately 72 acres along New South Road, 1.2 miles southeast of Hicksville, N.Y. It is shown in figure #1 as the green circle and the actual plant layout is shown in figure #2. The surface terrain ir elatively flat and the area surrounding the plant is industrialized with 3. man Corporation located to the south and east, and Long Island Lighting Company (LILCO) to the northwest. In figure #1, the residential areas are outside the heavy black boundary line. The closest residential areas are to the west of Ruco across New South Road.

Site Hydrogeology:

The Plant is located on stratified deposits of sand and gravel with some thin interbedded clay lenses (see attached figure #3). There are three water bearing formations; the Upper Glacial Aquifer (about 80 feet of sand and gravel), the Magothy Aquifer (about 580' of sand and thin interbedded clay lenses), and the deep Lloyd formation (about 200' of sand). Separating the Magothy and Lloyd formations is about 150' of clay (Raritan formation). No significant clay layers exist between the Upper Glacial and Magothy Aquifers. Thus potential aquifer contamination (from surface sources) exist for both the Upper Glacial and Magothy formations.

Groundwater flow is to the south and varies seasonally partly due to Grumman pumping rates (see figures4 and 5). Grumman uses large quantities of groundwater for cooling purposes in the summer which is illustrated in figure #4 (July 1979) by the larger enclosed contour areas and lower groundwater surface elevations than those shown in figure #5 (December 1979).

Past Plant Operations and Chemical Disposal Methods:

Some Ruco Plant operations dating back to 1951 are identified in a Hooker internal report "Identification of Environmental Problems", 8/30/78, M/A 3867-8 JBH:sg (see attached Appendix A). The report discusses environmental problems

* Appendix A contains only the first page of the document; complete document is available in the file.

From LBG report
Attachment 7.2-1
2 of 4

HYDROGEOLOGIC SETTING

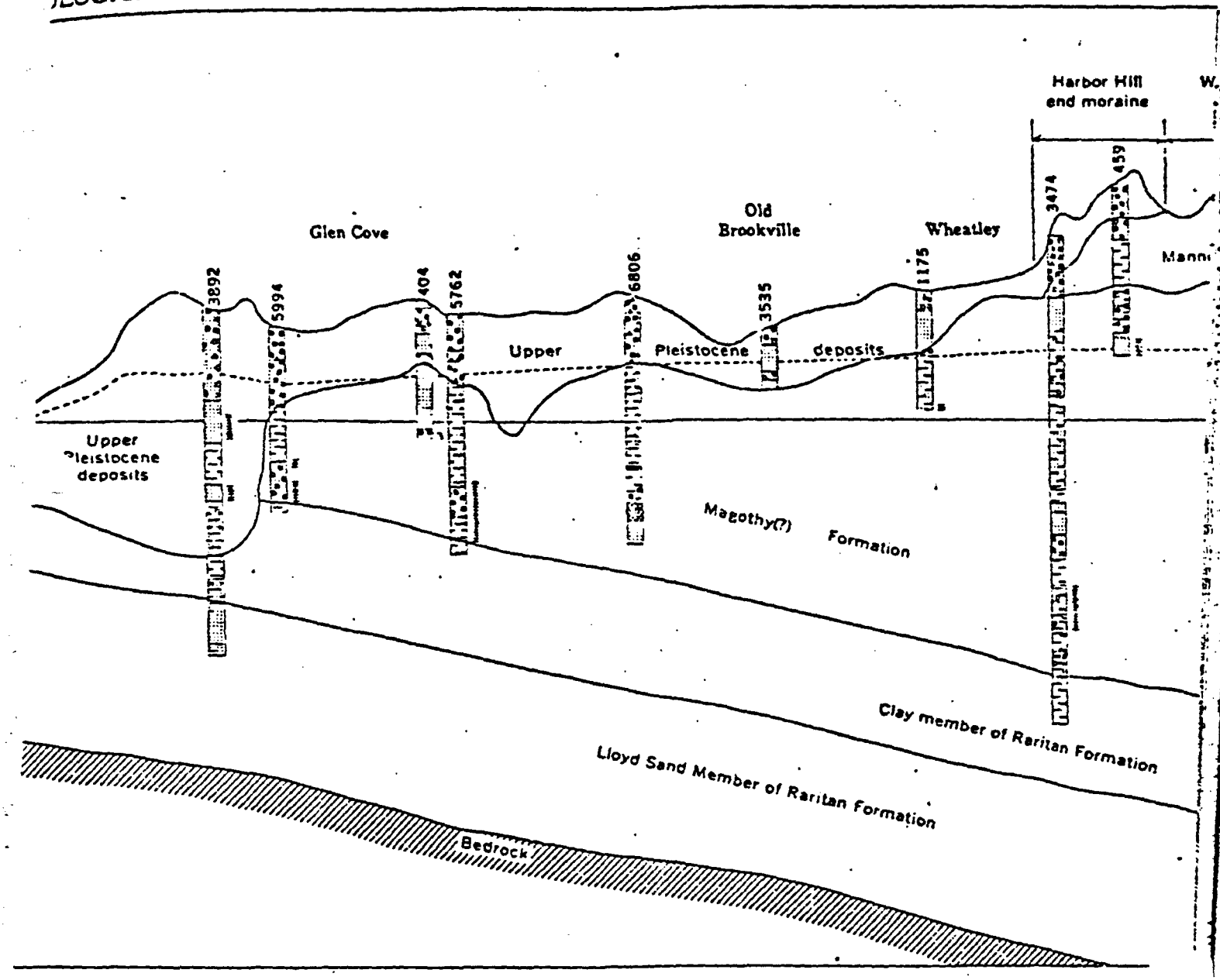
Figure 2 is a surficial geologic map of northeastern Nassau County [1]. The Hicksville plant is located on the glacial outwash plain which consists of stratified deposits of sand and gravel with some thin interbedded clay lenses. There are three basic water-bearing units underlying the project area. These are the Upper Glacial Aquifer, the Magothy Aquifer, and the deep Lloyd Formation. The Lloyd is separated from the Magothy by thick clay. The cross-section shown on figure 3 shows the interrelationship of these units [1]. (See figure 4 for section A-A' and 5 for subsection B-B'). The logs on the cross section show no significant clay layers between the Upper Glacial Aquifer and the Magothy. This is confirmed by the geologic logs of the three Hicksville plant wells which show only thin, discontinuous clay occurrences in the upper part of the Magothy Formation (Appendix I). Heavy pumping from the Magothy in the study area suggests downward leakage from the Glacial to the Magothy Aquifer (figure 6). Ground-water flow in the Glacial Aquifer, in addition to the vertical component, is laterally to the south.

The Hicksville plant well logs indicate that the top of the Magothy Formation is about 60 feet above mean sea level. Figure 7, showing the generalized, non-pumping ground-water surface contours for the study area, indicates an elevation of about 78 feet above mean sea level at the plant. Therefore, assuming no local pumping, only about 18 feet of the Glacial Aquifer would be saturated.

[1] Isbister J. "Geology and Hydrology of Northeastern Nassau County, Long Island, New York," U. S,. Geological Survey Water Supply Paper 1825; 1966.

Attachment 7.2-2
1 of 3

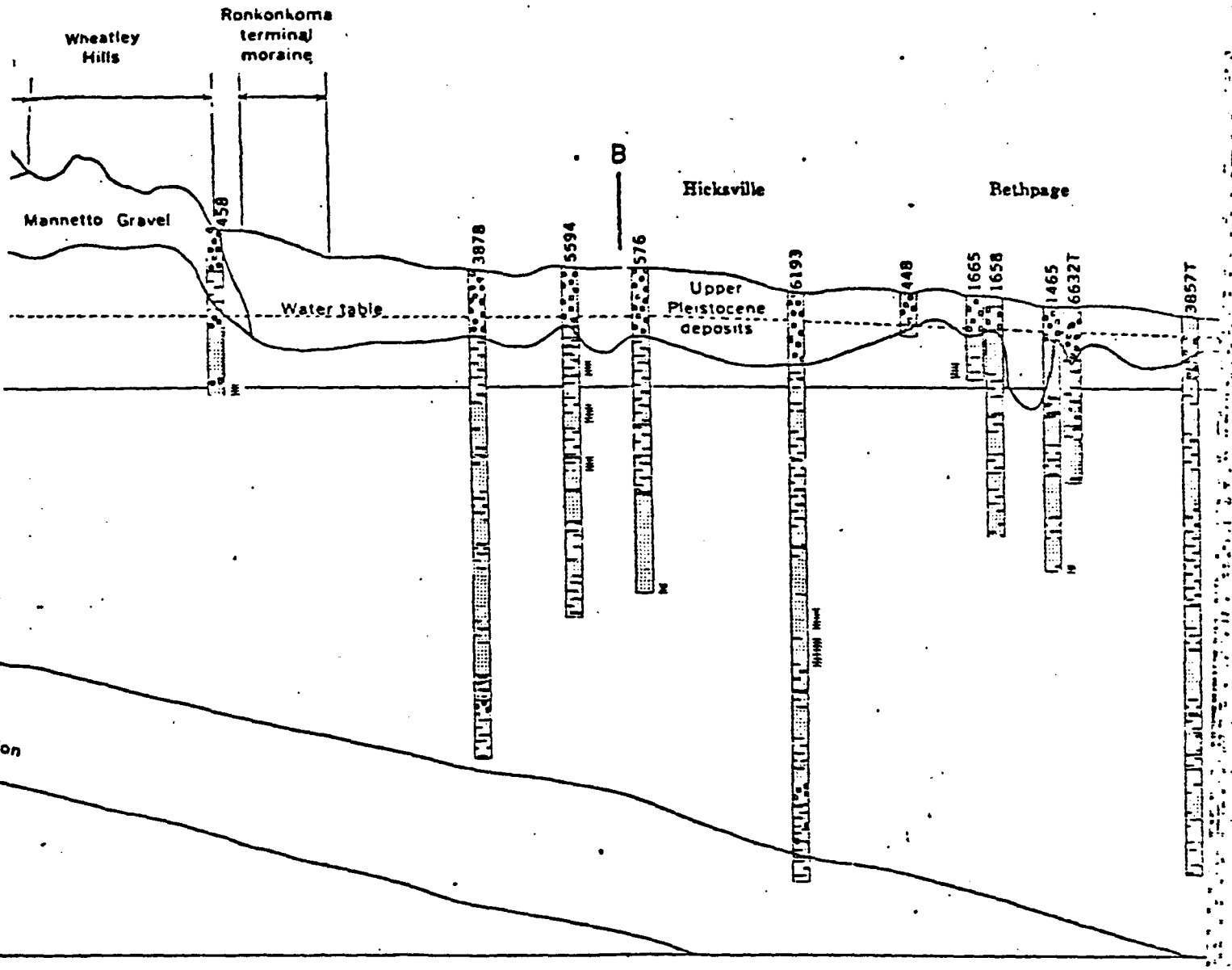
DEPARTMENT OF THE INTERIOR
OLOGICAL SURVEY



SECTION A–A', FROM LONG ISLAND SOUND NEAR

Attachment 7.2:2
2 of 3

PREPARED IN COOPERATION WITH THE
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS AND THE
NEW YORK STATE WATER RESOURCES COMMISSION

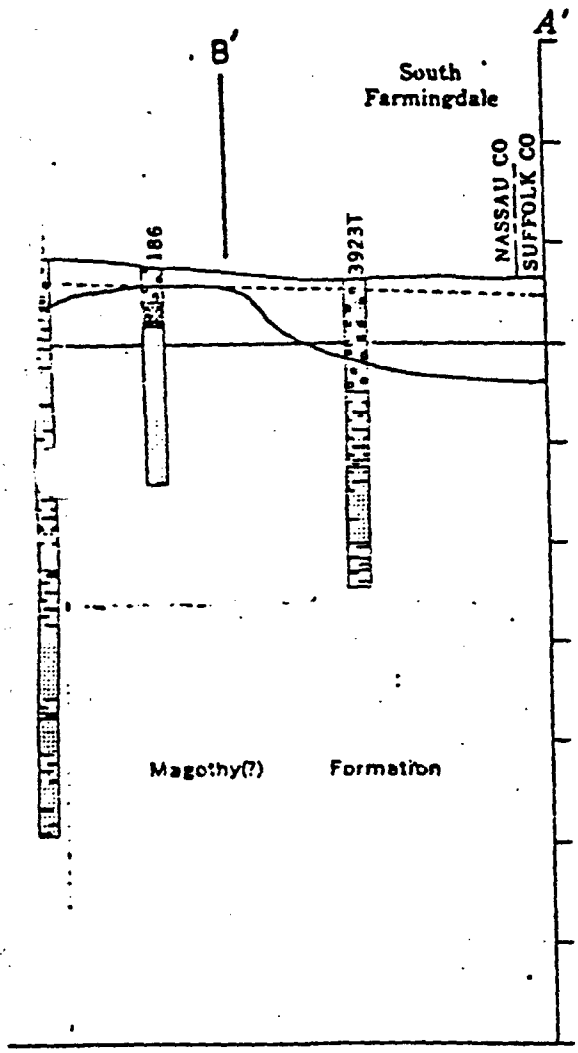


R DOSORIS POND TO NASSAU COUNTY LINE AT SOUTH FARMIN

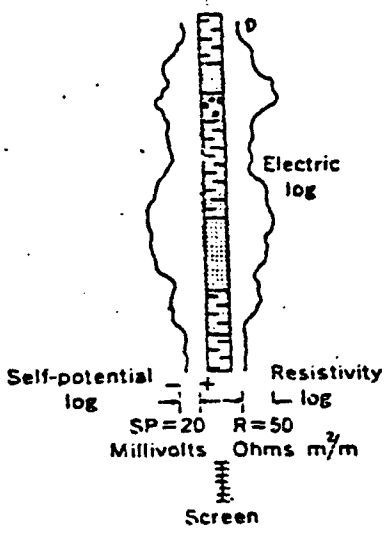
figure 3

Attachment 7.2.2
3 of 3
FIGURE 3

WATER-SUPPLY PAPER 1825
PLATE 3



EXPLANATION



Boulders
Sand
Gravel
Clay

Contact
Dashed where
approximate

Prefix N has been omitted
from well numbers

SDALE

1 0 1 2 MILES

HRC 001 0157

FROM [illegible]
Attachment T.2-3

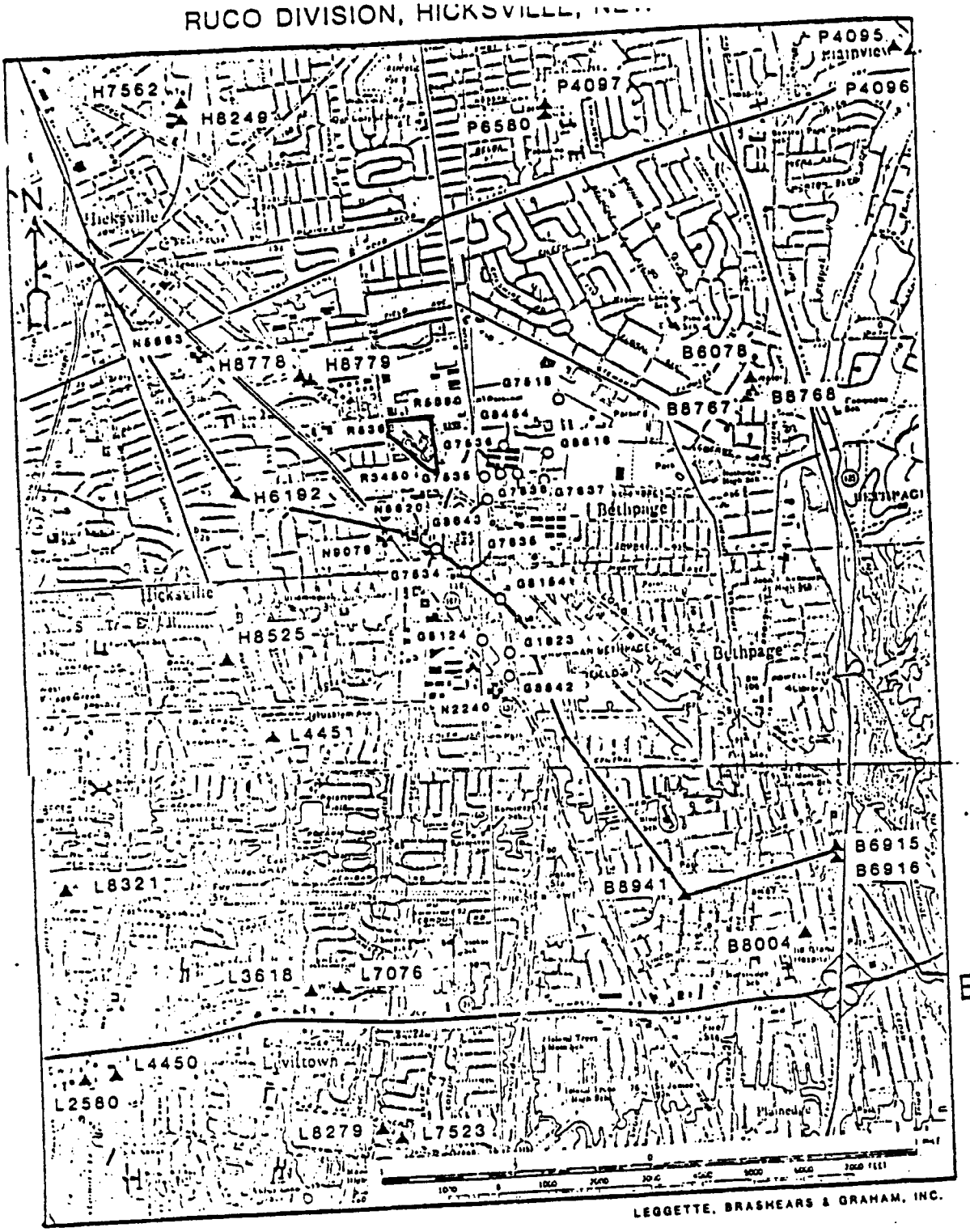
TABLE 1

Seasonal (Winter/Summer) Average of Pumpage
Quantities for Grumman Wells
(Million Gallons/Month)

Winter		Summer	
1978		1978	
January	81.1	June	425.4
February	91.1	July	339.2
March	111.4	August	453.0
		September	345.1
1978		1978	
December ('78)	80.7	June	318.6
January	110.3	July	334.7
February	103.3	August	425.0
March	103.8	September	306.1
1980		1980	
December ('79)	85.7	June	343.2
January	134.3	July	482.1
February	103.4	August	359.1
March	102.3	September	355.0
1981		1981	
December ('80)	136.8	June	290.5
January	93.2	July	269.3
February	103.5	August	324.6
March	109.1	September	335.1
TOTAL	1550.5		5805.5
AVERAGE/MONTH	103.3		362.8

The Average Monthly Summer Pumpage was Approximately 3 1/2 Times the Average Monthly Winter Pumpage Over the Past Four Years.

Attachment 7.3-1



WELL LOCATION MAP

- ○ G8154 Grumman Supply Well
- ✚ N9079 N.C.D.P.W. Monitoring Well
- ⊕ R5390 RUCO Well
- ▲ B8768 Public Supply Well
  - B — Nassau County ("N") Number
  - 8 — Water District H-Hicksville B-Bethpage L-Levittown P-Plainview

FIGURE 5

HRC 001 0159

01044552 NASSAU COUNTY DEPARTMENT OF HEALTH — CHRONOLOGICAL SUMMARY OF ORGANICS SAMPLING BY WELL

Hooker/Ruco Attachment 7.3-2 — 6-8-77 — Page 1/10

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Date (1)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	Trifluoro Trichloro Ethane (11)	1,1,1 Trichloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
		Grumman	8542	1	570	summer use only															
[illegible]	SHD					UNK.	–	–	+	–	–	–	–	++	–	–	++	–	++	++	CLS
[illegible]	NYTL					UNK.	–	++	–	–	++	++	++	++	++	++	++	++	++	++	CLS
[illegible]	SHD					Cont.	–	+	13.2	11.4	–	13.6	8.0	++	–	–	++	–	++	++	
[illegible]	H&M					UNK.	<2	220	350	490	++	++	++	++	++	++	++	++	++	++	CLS
[illegible]	FS					UNK.	6	<5	190	7	26	8	++	++	++	++	++	++	++	++	CLS
		Grumman	9154	2	520	summer use only															
[illegible]	FS					UNK.	<5	<10	90	10	125	25	++	<10	++	++	++	++	++	++	CLS
[illegible]	FS					UNK	60	<5	240	6	210	<5	++	++	++	++	++	++	++	++	CLS
[illegible]	SHD					42hr	++	++	5.6	16	+	29	<2.5	++	–	–	++	++	++	++	CLS
[illegible]	GAC CC					42hr	<5	25	86	<50	80	34	<30	<5	++	<50	<5	7	++	++	CLS
[illegible]	FS					UNK.	90	<5	120	9	90	<5	200	<5	–	<5	<5	<5	–	–	CLS
[illegible]	RC RA					UNK.	2	28	92	<50	51	37	<30	<5	++	++	++	++	++	++	CLS

Sensitivity of SHD Analysis 1 ug/l unless otherwise noted. C – Confirmed

Attachment 7.3-2

HRC 001 0160

(1)	(1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C_4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,1,2 Trifluoro Ethane (30)	Ethane (31)
			Grumman	EE12	1	570											
[illegible]	[illegible]	SHD					UNK	**	**	**	**	**	**	**	**	**	**
[illegible]	[illegible]	NYFL					UNK	**	**	**	**	**	**	**	**	**	**
[illegible]	[illegible]	SHD					CONT	**	**	**	**	**	**	**	**	**	**
[illegible]	[illegible]	H_2M					UNK	**	**	**	**	**	250	1	**	**	1
[illegible]	[illegible]	FS					UNK	**	**	**	**	**	3.1	<5	**	**	<15
			Grumman	8154	2	520											
[illegible]	[illegible]	FS					UNK	**	**	**	**	**	**	**	**	**	**
[illegible]	[illegible]	FS					UNK	**	**	**	**	**	8.6	<5	<15	**	**
[illegible]	[illegible]	SHD					42hr	**	**	**	**	**	**	**	**	**	**
[illegible]	[illegible]	[illegible]					42hr	**	**	**	**	**	<1	15	<5	**	**
[illegible]	[illegible]	FS					UNK	**	**	**	**	**	<.5	15	<15	**	**
[illegible]	[illegible]	[illegible]					UNK	**	**	**	**	**	<1	7	<5	**	**

Present: Analysis Still Under Way; ** Not Analyzed For; * Detected; - Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

...sitivity, d... Analysis ... as noted. C - Confirmed in ...

(1)	(1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Org. (20)	Comments (21)
			Grumman	8124	3	544	Summer use only															
[illegible]	[illegible]	FS					UNK	20	<5	63	9	80	20	+ +	+ +	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	FS					UNK	<5	<10	570	14	125	5	+ +	<10	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	SHD					48hr	Not analyzed - unapproved containers possibly contaminated (contam) (16) (7) (21)														CLS
[illegible]	[illegible]	FS					UNK	<5	<10	541	8	146	<5	+ +	<10	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	SHD					44hr	+ +	+ +	>50	18	+ +	12	<5	+ +	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	FS					UNK	20	<10	490	8	86	<5	<5	<10	+ +	<5	<10	<25	+ +	+ +	CLS
[illegible]	[illegible]	SHD					42hr	+ +	+ +	500	11	+	4	<2.5	+ +	—	—	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	FS					UNK	270	<5	560	7	200	<5	460	<5	—	<5	<5	6	—	—	CLS
[illegible]	[illegible]	GAC [illegible]					UNK	<5	8	860	<50	512	10	<30	<5	—	<50	<5	<5	—	—	CLS
[illegible]	[illegible]	GAC [illegible]					UNK	<5	<5	735	<50	204	4	<30	1	+ +	1	<5	<5	+ +	+ +	CLS
[illegible]	[illegible]	NCSL					4 days	+ +	+ +	710	13	42	2	1	+ +	<1	<1	+ +	<1/2	+ +	<5	CLS
			Grumman	1923	4	359	Summer use only															
[illegible]	[illegible]	FS					UNK	72	<5	14,000	<5	100	25	+ +	+ +	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	FS					UNK	<5	<10	10,000	<30	125	25	+ +	<10	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	SHD					48hr	Not analyzed - unapproved containers possibly contaminated.														CLS
[illegible]	[illegible]	FS					UNK	<5	<10	8,237	<10	208	30	+ +	<10	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	SHD					44hr	<10	+ +	+	40	+ +	—	5.	+ +	+ +	+ +	+ +	+ +	+ +	+ +	CLS
[illegible]	[illegible]	FS					UNK	38	<10	25,000	12	140	24	<5	<10	+ +	<5	<10	<25	+ +	+ +	CLS

[illegible] (1)	[illegible] (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C_4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,2,2 Trifluoro Ethane (30)	Ethane (31)
			[illegible]	8124	9	544											
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	15.2	<5	<15	++	++
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	++	++	++	++	++
[illegible]	[illegible]	SHD					48hr	NOT ANALYZED									
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	<.5	86	<15	++	++
[illegible]	[illegible]	SHD					44hr	++	++	++	++	++	++	++	++	++	++
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	<.5	++	++	++	++
[illegible]	[illegible]	SHD					42hr	++	++	++	++	++	++	++	++	++	++
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	0.7	8	<15	++	++
[illegible]	[illegible]	GAC [illegible]					UNK	++	++	++	++	++	10	<5	<5	++	++
[illegible]	[illegible]	GAC [illegible]					UNK	++	++	++	++	++	7	<5	<5	++	++
			[illegible]	1923	4	359											
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	<1	<5	<15	++	++
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	++	++	++	++	++
[illegible]	[illegible]	SHD					48hr	NOT ANALYZED.									
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	<.5	20	<15	++	++
[illegible]	[illegible]	SHD					44hr	++	++	++	++	++	++	++	++	++	++
[illegible]	[illegible]	FS					UNK	++	++	++	++	++	<.5	++	++	++	++

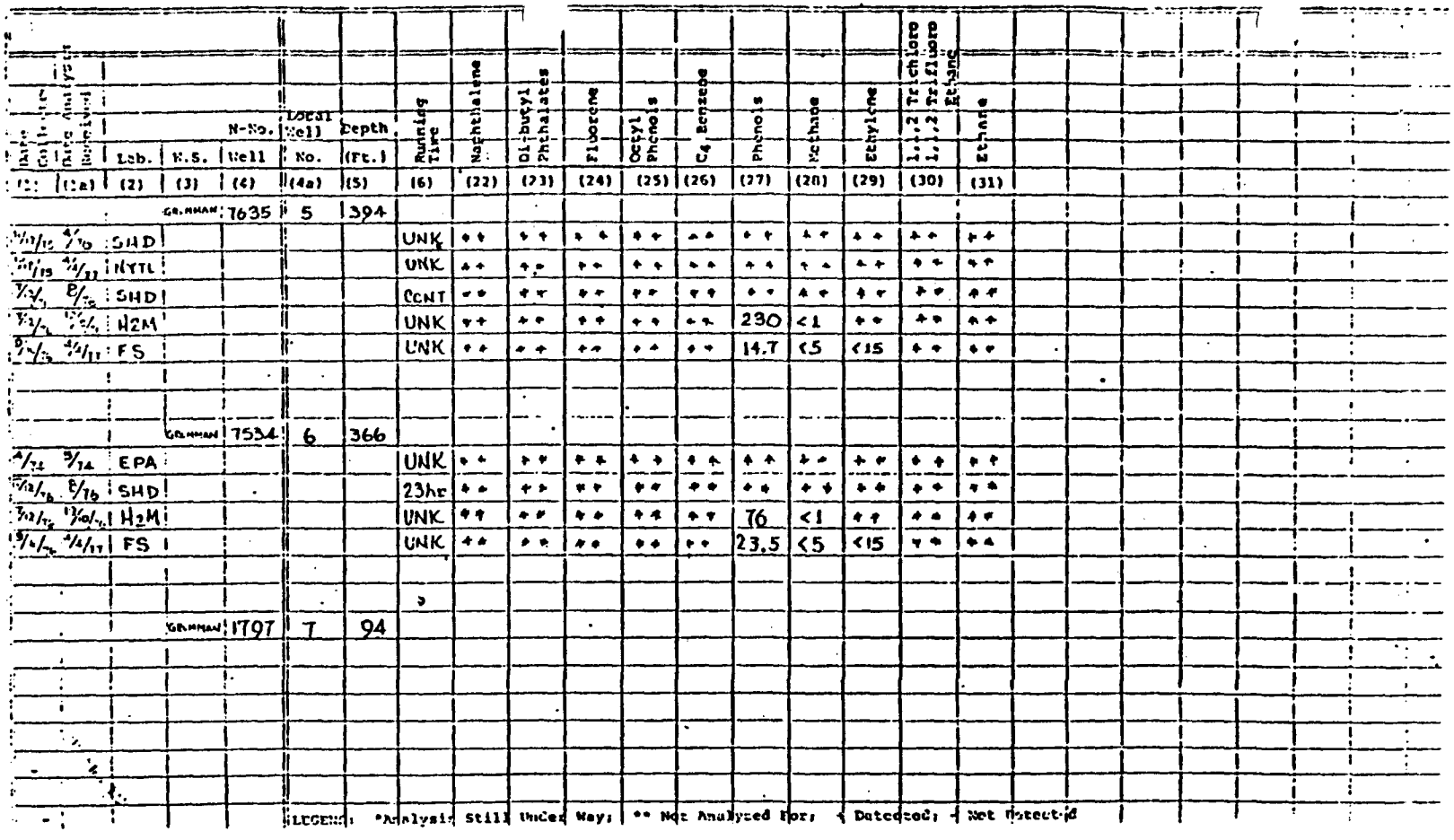
[illegible]

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Lab.	W.S.	W-No. Well	Local Well No.	Depth (Ft.)	Running Time	Vinyl Chlorides	Chloroethylene 1,2 DI	Chloroethylene 1,1,2 TRI	Chloroethylene TETRA	Tri Fluoro Tri Chloro Ethane	1,1,1 Tri Chloro Ethane	Chloroform	Toluene	Bromo Dichloro Methane	Carbon Tetrachloride	Benzene	Methyne Chloride	Ethyl Ether	Total Halo-genated Volatile Organics	COMMENTS
(1)	(2)	(3) (4)	(4a)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
GRUMMAN		7635	5	394	REMOVED FROM SERVICE AT DEPT. OF HEALTH DIRECTION, OCTOBER 1976															
[illegible]	[illegible]	SHD			UNK	–	–	+	+	–	–	–	**	–	–	**	–	**	**	CLS
[illegible]	[illegible]	KYTL			UNK	–	**	–	–	**	**	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	SHD			CONT.	+	+	65.6	400.0	–	14.4	8.4	**	–	–	**	–	**	**	
[illegible]	[illegible]	H2M			UNK.	7	39	19	86	**	**	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	FS			UNK	14	<5	49	510	85	5	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	NCDH			1 hr	**	**	54	589	2	2	2	**	<1	<1	**	<40	**	<5	CLS
GRUMMAN		7534	6	366	REMOVED FROM SERVICE VOLUNTARILY BY GRUMMAN AC. DUE TO TASTE AND ODOR, SEPTEMBER 1975															
[illegible]	[illegible]	EPA			UNK	–	–	–	–	–	–	–	–	–	–	–	–	**	**	
[illegible]	[illegible]	SHD			23hr	–	+	14.4	26	–	10.2	8.4	**	–	–	**	–	**	**	
[illegible]	[illegible]	H2M			UNK	<2	23	<2	28	**	**	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	FS			UNK	<5	<5	16	20	5	5	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	NCDH			24hr	**	**	71	303	<1	3	2	**	<1	<1	**	<40	**	<5	CLS
GRUMMAN		1797	7	94	ABANDONED 1962															

LEGEND: * Analysis Still Under Way; ** Not Analyzed For; + Detected; – Not Detected



Date Collected	Date Analyzed	Lab.	W.S.	N-No. Well	Local Well No.	Depth (Ft.)	Running Time	Naphthalene	Di-butyl Phthalates	Fluorene	Octyl Phenols	C4 Benzene	Phenols	Methane	Ethylene	1,1,2 Trichloro 1,2,2 Trifluoro Ethane	Ethane
(1)	(1a)	(2)	(3)	(4)	(4a)	(5)	(6)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
			GRUMAN	7635	5	394											
4/10	4/10	SHD					UNK	**	**	**	**	**	**	**	**	**	**
4/19	4/22	NYTL					UNK	**	**	**	**	**	**	**	**	**	**
4/25	5/2	SHD					CONT	**	**	**	**	**	**	**	**	**	**
5/2	5/4	H2M					UNK	**	**	**	**	**	230	<1	**	**	**
5/5	4/11	FS					UNK	**	**	**	**	**	14.7	<5	<15	**	**
			GRUMAN	7534	6	366											
4/12	5/14	EPA					UNK	**	**	**	**	**	**	**	**	**	**
5/12	5/16	SHD					23hr	**	**	**	**	**	**	**	**	**	**
5/12	5/20	H2M					UNK	**	**	**	**	**	76	<1	**	**	**
5/4	4/17	FS					UNK	**	**	**	**	**	23.5	<5	<15	**	**
			GRUMAN	1797	7	94											

LEGEND: * Analysis Still Under Way; ** Not Analyzed For; (Detected; - Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Sensitivity of [illegible] Analytic [illegible] Chloroform [illegible] as noted.
C - Confirmed in [illegible]

Date Collected (1)	Date Analyzed (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			Grumman	7535	8	357	REMOVED FROM SERVICE VOLUNTARILY BY GRUMMAN A.C. DUE TO TASTE AND ODOR, SEPTEMBER 1974															
2/74	5/74	EPA					UNK.	—	—	—	—	—	—	—	—	—	—	—	—	**	**	
6/[illegible]/75	10/75	SHD					UNK	0	—	16	88	—	—	—	**	—	—	**	—	**	**	
11/[illegible]/75	4/76	SHD					UNK	+	+	+	+	—	—	—	**	—	—	**	—	**	**	CLS
7/[illegible]/76	8/76	SHD					24hr	+	+	37.2	25.6	—	100.0	11.0	**	—	—	**	—	**	**	TASTE-ODOR [illegible]
[illegible]/76	12/[illegible]/76	H2M					UNK	<2	83	56	120	**	**	**	**	**	**	**	**	**	**	CLS
9/[illegible]/76	4/4/77	FS					UNK	6	<5	41	14	<5	130	**	**	**	**	**	**	**	**	CLS
			Grumman	7536	9	436	REMOVED FROM SERVICE VOLUNTARILY BY GRUMMAN A.C. DUE TO TASTE AND ODOR, DECEMBER 1974															
7/76	8/76	SHD					24hr.	—	—	8.4	15.6	—	7.2	3.0	**	—	—	**	—	**	**	
[illegible]/76	12/[illegible]/76	H2M					UNK	<2	4	2	8	**	**	**	**	**	**	**	**	**	**	CLS
9/[illegible]/76	4/4/77	FS					UNK	<5	<5	12	7	**	**	**	**	**	**	**	**	**	**	CLS
			Grumman	7636	10	373	REMOVED FROM SERVICE VOLUNTARILY BY GRUMMAN A.C. DUE TO TASTE AND ODOR, OCTOBER 1975															
3/[illegible]/77	4/4/77	FS					UNK	<5	<5	100	10	10	70	**	**	**	**	**	**	**	**	CLS
[illegible]/76	11/3/76	SHD					48hr	NOT ANALYZED - POSSIBLE CONTAMINATION OF UNAPPROVED CONTAINERS														CLS
[illegible]/77	4/4/77	FS					UNK	<5	<10	187	11	6	122	**	<10	**	**	**	**	**	**	CLS
[illegible]/76	[illegible]/76	SHD					44hr	<10	**	60	24	**	+	5	**	**	**	**	**	**	**	CLS
[illegible]/77	4/[illegible]/77	FS					UNK	<5	<10	110	13	<5	75	<5	<10	**	<5	<10	<25	**	**	CLS
[illegible]	[illegible]	NCDH					24 hrs	**	**	101	20	2	44	<1	**	<1	<1	**	<40	**	**	[illegible]

Date Collected (1)	Date Analyzed / Received (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,1,2 Trifluoro Ethane (30)	Ethane (31)
			GRUMMAN	7535	8	357											
4/74	5/74	EPA					UNK	**	**	**	**	**	**	**	**	**	**
7/4/75	10/75	SHD					UNK	**	**	**	**	**	**	**	**	**	**
11/7/75	4/76	SHD					UNK	**	**	**	**	**	**	**	**	**	**
7/12/76	8/76	SHD					24hr	**	**	**	**	**	**	**	**	**	**
7/12/76	11/10/76	H2M					UNK	**	**	**	**	**	<1	<1	**	**	**
9/16/76	4/4/77	FS					UNK	**	**	**	**	**	11.2	<5	<15	**	**
			GRUMMAN	7536	9	436											
7/76	8/76	SHD					24hr	**	**	**	**	**	**	**	**	**	**
7/21/76	[illegible]	H2M					UNK	**	**	**	**	**	86	1	**	**	1
3/15/76	4/4/77	FS					UNK	**	**	**	**	**	13.7	<5	<15	**	**
			GRUMMAN	7636	10	373											
7/10/76	4/4/77	FS					UNK	**	**	**	**	**	3.2	<5	<15	**	**
10/21/76	11/3/76	SHD					48hr		NOT	ANALYZED							
[illegible]	4/4/77	FS					UNK	**	**	**	**	**	.6	30	<15	**	**
[illegible]	[illegible]	SHD					44hr	**	**	**	**	**	**	**	**	**	**
[illegible]	4/4/77	FS					UNK	**	**	**	**	**	<.5	**	**	**	**

LEGEND: *Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Sensitivity of analysis 5 ug/l unless otherwise noted. C - Confirmed

(1)	(1a)	Lab. (2)	U.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			GRUMMAN	7637	11	490	YEAR ROUND USE															
11/17/75	4/76	SHD					UNK	—	—	—	—	**	**	**	**	**	**	**	**	**	**	CLS
[illegible]	4/4/77	FS.					UNK	<5	<5	13	12	**	**	**	**	**	**	**	**	**	**	CLS
11/16/76	2/2/77	EPA					CONT.	—	—	—	0.9	—	2.9	2.0	—	—	2.0	—	—	**	**	CLS
11/30/76	12/3/76	SHD					CONT.	<2	—	5.4	54	—	3	<1	**	—	—	<10	—	**	**	CLS
11/30/76	12/21/76	FS					UNK	<5	<10	60	19	11	7	**	<10	**	**	**	**	**	**	CLS
7/1/7[illegible]	12/3/76	SHD					CONT	<2	—	10	34	—	11	<1	**	—	—	<10	—	**	**	CLS
12/1/76	4/4/77	FS					UNK	<5	<10	23	15	<5	9	<5	<10	**	<5	<10	<35	**	**	CLS
4/1/77	5/19/77	FS					UNK	<5	<5	22	36	<5	8	<5	<5	**	<5	<5	<5	**	**	CLS
[illegible]	5/19/77	GAC SC					UNK	—	<5	25	—	<5	8	—	7	**	—	—	—	**	**	CLS
1/9/78	[illegible]	NCDH					Inter.	**	**	12	19	<1	4	<1	**	<1	<1	**	<4C	**	<5	CLS
			GRUMMAN	1961	12	274		ABANDONED 1964														

LEGEND: * Analysis Still Under Way; ** Not Analyzed For; + Trace; — Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Date Collected (1)	Date Analyzed (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methylene Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			GRUMMAN	8454	13	560		YEAR	ROUND	USE												
[illegible]	[illegible]	FS					UNK	<5	<5	10	<5	<5	<5	* *	* *	* *	* *	* *	* *	* *	* *	CLS
[illegible]	[illegible]	EPA					CONT	—	—	—	—	—	1.4	2.9	—	—	5.1	—	—	* *	* *	CLS
[illegible]	[illegible]	SHD					CONT.	<2	—	<1	<1	—	<1	<1	* *	—	—	<10	—	* *	* *	CLS
[illegible]	[illegible]	FS					UNK	<5	<10	39	<5	<5	<5	* *	<10	* *	* *	* *	* *	* *	* *	CLS
[illegible]	[illegible]	SHD					CONT	<2	—	<1	<5	—	<5	<1	* *	—	—	<10	—	* *	* *	CLS
[illegible]	[illegible]	FS					UNK	<5	<10	<5	<5	<5	<5	<5	<10	* *	<5	<10	<25	* *	* *	CLS
[illegible]	[illegible]	SHD					42hr	* *	* *	1	<2.5	—	<2.5	<2.5	* *	—	—	* *	* *	* *	* *	CLS
[illegible]	[illegible]	FS					UNK	<5	<5	<5	<5	<5	<5	<5	<5	—	<5	<5	10	—	—	CLS
[illegible]	[illegible]	GAC GC					UNK	<5	<5	<5	<50	<5	<5	<30	5	* *	<50	<5	<5	* *	* *	CLS
[illegible]	[illegible]	GAC GC2					UNK	<5	<5	<5	<50	<5	<5	<30	<5	* *	<50	<5	<5	* *	* *	CLS
5/1/77	5/9/77	FS					UNK	<5	<5	7	<5	<5	<5	<5	<5	* *	<5	<5	<5	* *	* *	CLS
[illegible]	[illegible]	GAC GC					UNK	—	<5	—	—	<5	<5	—	<5	* *	<5	<5	<5	* *	* *	CLS
[illegible]	[illegible]	NCDH					½ hr.	* *	* *	<1	<1	<1	<1	<1	* *	<1	<1	* *	<40	* *	<5	CLS

Sensitivity of [illegible] Analysis: 5 ug/l [illegible] as noted.

C - Confirmed [illegible]

HRC 001 0169

Division of ...

Date Collected (1)	Date Analyzed (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,1,2 Trifluoro Ethane (30)	Ethane (31)
			GRUMMAN	8454	13	560											
[illegible]/76	4/4/77	FS					UNK	**	**	**	**	**	11.6	5	<15	**	**
11/30/76	12/1/76	EPA					CONT	**	**	**	**	**	**	**	**	**	**
11/30/76	12/3/76	SHD					CONT	**	**	**	**	**	**	**	**	**	**
11/30/76	12/11/76	FS					UNK	**	**	**	**	**	3.6	40	<15	**	**
12/7/76	12/13/76	SHD					CONT	**	**	**	**	**	**	**	**	**	**
12/1/76	1/4/77	FS					UNK	**	**	**	**	**	<.5	**	**	**	**
1/17/77	1/31/77	SHD					42hr	**	**	**	**	**	**	**	**	**	**
1/17/77	3/3/77	FS					UNK	**	**	**	**	**	2.0	15	<15	**	**
1/17/77	4/4/77	GAC GC					UNK	**	**	**	**	**	1	<5	<5	**	**
1/17/77	4/4/77	GAC GC2.					UNK	**	**	**	**	**	<1	<5	<5	**	**
4/1/77	5/12/77	FS					UNK	**	**	**	**	**	2.0	13.	<15	**	**
4/1/77	5/19/77	GAC GC					UNK	**	**	**	**	**	0	<5	<5	**	**

*Ground... Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — MUNICIPAL WATER SUPPLIES, NASSAU COUNTY

Confirmed Lab
not Received by
NCDH

RESULTS (ug/l)

Date Collected (1)	Date Analysis Received (1a)	Lab (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	Tri Fluoro Tri Chloro Ethane (11)	1,1,1 Tri Chloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (15)	Benzene (17)	Methylene Chloride (Dichloromethane) (18)	Ethyl Ether (19)	1,1,2 Trichloro-ethane (20)	Comments (21)
[illegible]	[illegible]	NCDH	Grumman	8143	14	467	3 days	24	**	44	235	< 1	< 1	< 1	**	< 1	< 1	**	< 40	**	< 5	
[illegible]	[illegible]	NCDH	Grumman	8316	15	500	3 hrs	**	**	21	7	4	6	< 1	**	< 1	< 1	**	< 40	**	< 5	

LEGEND: * Analysis Still Underway; ** Not Analyzed For; # Detected; < Not Detected

HRC 001 0171

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

[illegible]tivity of [illegible] Analysis 5 ug/l [illegible] Chloroform [illegible] as noted.
C - Confirmed on [illegible]

Date Collected (1)	Date Analyzed (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			Grumman	8643	14	467	REMOVED FROM SERVICE VOLUNTARILY BY GRUMMAN AC DUE TO TASTE & ODOR - AUGUST 1974															
4/?/74	5/74	EPA					UNK	—	—	—	—	—	—	—	—	—	—	—	—	**	**	
8/?/75	10/75	SHD					UNK	50	—	500	65	—	—	—	**	—	—	**	—	**	**	
[illegible]	4/76	SHD					UNK	—	+	+	+	—	—	—	**	—	—	**	—	**	**	CLS
7/?/76	8/76	SHD					66hr	+	+	30.0	79	—	5.0	10.0	**	—	—	**	—	**	**	
[illegible]	12/?/76	H2M					UNK	<2	1	4	12	**	**	**	**	**	**	**	**	**	**	CLS
[illegible]	4/4/77	FS					UNK	<5	<5	17	29	<5	<5	**	**	**	**	**	**	**	**	CLS
[illegible]	12/?/76	SHD					44hr	NOT ANALYZED, SAMPLE FROZE BREAKING BOTTLE														CLS
[illegible]	4/4/77	FS					UNK	17	<10	21	56	<5	<5	<5	<10	**	<5	<10	<25	**	**	CLS
			Grumman	8816	15	500	YEAR ROUND USE.															
[illegible]	4/4/77	FS					UNK	<5	<5	14	<5	10	10	**	**	**	**	**	**	**	**	CLS
[illegible]	11/2/76	EPA					CONT	—	—	—	9.2	—	9.0	2.9	—	—	4.9	—	—	**	**	CLS
[illegible]	12/3/76	SHD					CONT	<2	—	11	19	—	15	1	**	—	—	<10	—	**	**	CLS
[illegible]	12/?/76	FS					UNK	<5	<10	59	10	19	18	**	<10	**	**	**	**	**	**	CLS
[illegible]	12/13/76	SHD					CONT	<2.	—	15	15	—	20	1	**	—	—	<10	—	**	**	CLS
[illegible]	4/4/77	FS					UNK	<5	<10	11	7	<5	9	<5	<10	**	<5	<10	<25	**	**	CLS
[illegible]	5/?/77	SHD					CONT	**	**	10	9	—	15	<2.5	**	—	—	**	**	**	**	CLS
[illegible]	[illegible]/77	FS					UNK	<5	<5	6	<5	16	10	17	<5	—	<5	<5	7	—	—	CLS
[illegible]	4/?/77	GAC GC					UNK	<5	<5	15	<50	17	33	<30	<5	**	<50	<5	<5	**	**	CLS
[illegible]	[illegible]/77	GAC GC?					UNK	<5	1	35	<50	18	47	<30	<5	**	<50	<5	<5	**	**	CLS
[illegible]	[illegible]/77	FS					UNK	<5	6	15	10	8	17	<5	<5	**	<5	<5	<5	**	**	CLS
[illegible]	[illegible]/77	GAC GC					UNK	—	<5	20	—	13	22	—	6	**	—	—	—	**	**	CLS

DIVISION OF [illegible]

Date Collected (1)	Date Analysis Received (1a)	Lab. (2)	U.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,1,2 Trifluoro Ethane (30)	Ethane (31)
			Grumman	8613	14	467											
6/74	5/76	EPA					UNK	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
8/4/75	10/75	SHD					UNK	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
11/5/75	4/76	SHD					UNK	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
7/23/76	8/76	SHD					66hr	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
7/12/76	12/6/76	H2M					UNK	* *	* *	* *	* *	* *	2	<1	* *	* *	* *
9/16/76	4/4/77	FS					UNK	* *	* *	* *	* *	* *	11.7	5	<15	* *	* *
12/2/76	12/11/76	SHD					44hr		NOT ANALYZED								
12/2/76	4/4/77	FS					UNK	* *	* *	* *	* *	* *	<.5	* *	* *	* *	* *
			Grumman	8816	15	500											
5/16/76	4/1/77	FS					UNK	* *	* *	* *	* *	* *	15.8	5	<15	* *	* *
[illegible]/76	12/2/76	EPA					CONT	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
11/30/76	12/5/76	SHD					CONT	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
[illegible]	12/21/76	FS					UNK	* *	* *	* *	* *	* *	3.6	100	<15	* *	* *
[illegible]	12/3/76	SHD					CONT	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
[illegible]	4/2/77	FS				-	UNK	* *	* *	* *	* *	* *	<.5	* *	* *	* *	* *
[illegible]/77	1/31/77	SHD					CONT	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
2/17/77	3/4/77	FS					UNK	* *	* *	* *	* *	* *	16.8	70	25	* *	* *
2/17/77	4/4/77	GAC CC					UNK	* *	* *	* *	* *	* *	7.	<5	<5	* *	* *
[illegible]/77	4/4/77	GAC CC2					UNK	* *	* *	* *	* *	* *	5	<5	<5	* *	* *
[illegible]/77	5/9/77	FS					UNK	* *	* *	* *	* *	* *	1.0	8	<15	* *	* *
4/1/77	5/9/77	GAC CC					UNK	* *	* *	* *	* *	* *	0	<5	<5	* *	* *

LEGEND: *Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

DIVISION O. [illegible]

RESULTS (ug/l)

[illegible] of [illegible] Chloroform [illegible] as noted.
C - Confirmed in [illegible]

[illegible] (1)	[illegible] (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methlyne Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			GRUMMAN	7518	16	375		YEAR	ROUND USE													
[illegible]	[illegible]	FS					UNK	<5	<10	10	<5	15	10	**	**	**	**	**	**	**	**	CLS
[illegible]	[illegible]	EPA					CONT	–	–	–	–	–	12.0	3.4	–	–	4.8	–	–	**	**	CLS
[illegible]	[illegible]	SHD					CONT	<2	–	3.6	<1	–	31	<1	**	–	–	<10	–	**	**	CLS
[illegible]	[illegible]	FS					UNK	<5	<10	50	<5	64	20	**	<10	**	**	**	**	**	**	CLS
[illegible]	[illegible]	SHD					10MIN	<2	–	6	<5	–	25	<1	**	–	–	<10	–	**	**	CLS
[illegible]	[illegible]	FS					UNK	7	<10	8	<5	22	18	<5	<10	**	<5	<10	<25	**	**	CLS
[illegible]	[illegible]	SHD					1/2hr.	**	**	5	<2.5	+	24	<2.5	**	–	–	**	**	**	**	CLS
[illegible]	[illegible]	FS					UNK	24	<5	<5	<5	90	15	45	<5	**	<5	<5	10	**	**	CLS
[illegible]	[illegible]	GAC QC					UNK	<5	<5	10	<50	90	41	<30	<5	**	<50	<5	<5	**	**	CLS
[illegible]	[illegible]	GAC QC2					UNK	<5	1	17	<5	32	41	<30	<5	**	<50	<5	<5	**	**	CLS
[illegible]	[illegible]	FS					UNK	<5	18	10	<5	39	20	<5	<5	**	<5	<5	<5	**	**	CLS
[illegible]	[illegible]	GAC QC					UNK	–	<5	11	–	71	35	–	<5	**	–	–	–	**	**	CLS
			GRUMMAN	4708	A	169		ABANDONED		1969												

LEGEND: * Analysis Still Under Way; ** Not Analyzed For; + Detected; – Not Detected

Sample Collected		Lab.	W.S.	Well No.	Local Well No.	Depth (Ft.)	Running Time	Naphthalene	Di-butyl Phthalates	Fluorene	Octyl Phenols	C_4 Benzene	Phenols	Methane	Ethylene	1,1,2 Trichloro 1,1,2 Trifluoro Ethane	Ethane
(1)	(1a)	(2)	(3)	(4)	(4a)	(5)	(6)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
			Gamma	7518	16	375											
3/6	4/4/77	FS					UNK	++	++	++	++	++	7	5	<15	++	++
3/8	3/16	EPA					CONT	++	++	++	++	++	++	++	++	++	++
3/30	12/16	SHD					CONT	++	++	++	++	++	++	++	++	++	++
12/30	3/11/16	FS					UNK	++	++	++	++	++	0.84	60	<15	++	++
12/1/16	12/1/16	SHD					10min	++	++	++	++	++	++	++	++	++	++
12/1/16	3/1/17	FS					UNK	++	++	++	++	++	<.5	++	++	++	++
3/17/17	3/31/17	SHD					42hr	++	++	++	++	++	++	++	++	++	++
3/17/17	3/4/17	FS					UNK	++	++	++	++	++	9.5	45	<15	++	++
3/17/17	4/4/17	GAC QC					UNK	++	++	++	++	++	10	<5	<5	++	++
3/17/17	4/3/17	GAC QC2					UNK	++	++	++	++	++	8	<5	<5	++	++
3/17/17	3/17/17	FS					UNK	++	++	++	++	++	0.5	5	<15	++	++
4/1/17	3/19/17	GAC QC					UNK	++	++	++	++	++	0	<5	<5	++	++
			Gamma	4708	A	169											

LEGEND: *Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

RESULTS (ug/l)

Activity of SHD Analysis [illegible] Checked [illegible] as noted. C - Confirmed [illegible]

Date (1)	(1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methylene Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			GRUMMAN	DISTRIB.	PLANT #1	NA																
9/11/76	4/4/77	FS					NA	<5	<5	10	<5	<5	<5	++	++	++	++	++	++	++	++	CLS
			GRUMMAN	DISTRIB.	PLANT #2	N.A.																
11/75	4/76	SHD					NA	—	+	+	+	—	—	—	++	—	—	++	++	++	++	CLS
9/[illegible]	4/4/77	FS					NA	<5	<5	39	<5	5	5	++	++	++	++	++	++	++	++	CLS
12/[illegible]	4/4/77	FS					NA	<5	<10	151	<5	++	<5	++	<10	++	++	++	++	++	++	CLS
12/[illegible]	12/31/76	SHD					NA	NOT ANALYZED - UNAPPROVED CONTAINER POSSIBLY CONTAMINATED														CLS
1/17/77	4/4/77	FS					NA	<5	<5	<5	<5	<5	<5	<5	<5	—	<5	<5	<5	—	—	CLS
			GRUMMAN	DISTRIB.	PLANT #3	N.A.																
9/[illegible]	4/4/77	FS					NA	<5	<5	15	<5	10	10	++	++	++	++	++	++	++	++	CLS
1/17/77	4/4/77	FS					NA	<5	<5	<50	<5	18	8	2000	<5	—	<5	<5	<5	—	—	CLS
			GRUMMAN	DISTRIB.	PLANT #5	N.A.																
[illegible]	4/4/77	H2M					NA	22.	21	28	110	++	++	++	++	++	++	++	++	++	++	CLS
7/75	1/6/76	SHD					NA	—	+	83.7	124	—	39.6	—	++	—	—	++	—	++	++	
9/10/76	4/4/77	FS					NA	30	<10	175	5	200	5	++	++	++	++	++	++	++	++	CLS
[illegible]	4/4/77	FS					NA	<5	<10	110	7	35	10	++	<10	++	++	++	++	++	++	CLS
[illegible]	[illegible]	EPA					NA	—	—	—	—	—	—	—	—	—	—	—	—	++	++	Limited to [illegible]
[illegible]/76	[illegible]	SHD					NA	<2	—	1.2	9.8	—	<1	<1	++	—	—	<10	—	++	++	CL
[illegible]	[illegible]	FS					NA	<5	<10	50	<5	6	5	++	<10	++	++	++	++	++	++	CL
[illegible]	4/4/77	FS					NA	<5	<5	<5	<5	<5	<5	<5	<5	—	<5	<5	<5	++	++	CLS

Date Collected (1)	Date Analysis Received (1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Naphthalene (22)	Di-butyl Phthalates (23)	Fluorene (24)	Octyl Phenols (25)	C4 Benzene (26)	Phenols (27)	Methane (28)	Ethylene (29)	1,1,2 Trichloro 1,1,2 Trifluoro Ethane (30)	Ethane (31)
			GRUMMAN	DISTRIB	PLANT #1	NA											
9/6/76	4/4/77	FS					NA	**	**	**	**	**	14.5	5	<15	**	**
			GRUMMAN	DISTRIB	PLANT #2	NA											
11/75	4/76	SHD					NA	**	**	**	**	**	**	**	**	**	**
9/16/76	4/4/77	FS					NA	**	**	**	**	**	.65	5	<15	**	**
12/2/76	4/4/77	FS					NA	**	**	**	**	**	<.5	70	<15	**	**
7/1/76	12/3/76	SHD					NA		NOT	ANALYZED							
1/31/77	4/4/77	FS					NA	**	**	**	**	**	1.1	8	<15	**	**
			GRUMMAN	DISTRIB	PLANT #3	NA.											
9/6/76	4/4/77	FS					NA	**	**	**	**	**	12.8	<5	<15	**	**
1/17/77	4/4/77	FS					NA	**	**	**	**	**	.8	15	<15	**	**
			GRUMMAN	DISTRIB	PLANT #5	N.A.											
1/13/76	4/4/77	H2M					NA.	**	**	**	**	**	140	<1	<1	**	**
7/76	8/76	SHD					NA	**	**	**	**	**	**	**	**	**	**
9/16/76	4/4/77	FS					NA	**	**	**	**	**	14.6	5	<15	**	**
10/21/76	4/4/77	FS					NA	**	**	**	**	**	**	**	**	**	**
11/30/76	12/1/76	EPA					NA	**	**	**	**	**	**	**	**	**	**
11/26/76	12/3/76	SHD					NA	**	**	**	**	**	**	**	**	**	**
11/30/76	12/20/76	FS					NA	**	**	**	**	**	0.84	30	<15	**	**
1/17/77	4/4/77	FS					NA	**	**	**	**	**	<.5	8	<15	**	**

DIVISION OF ENVIRONMENTAL SERVICES — GRUMMAN WATER SUPPLIES, NASSAU COUNTY

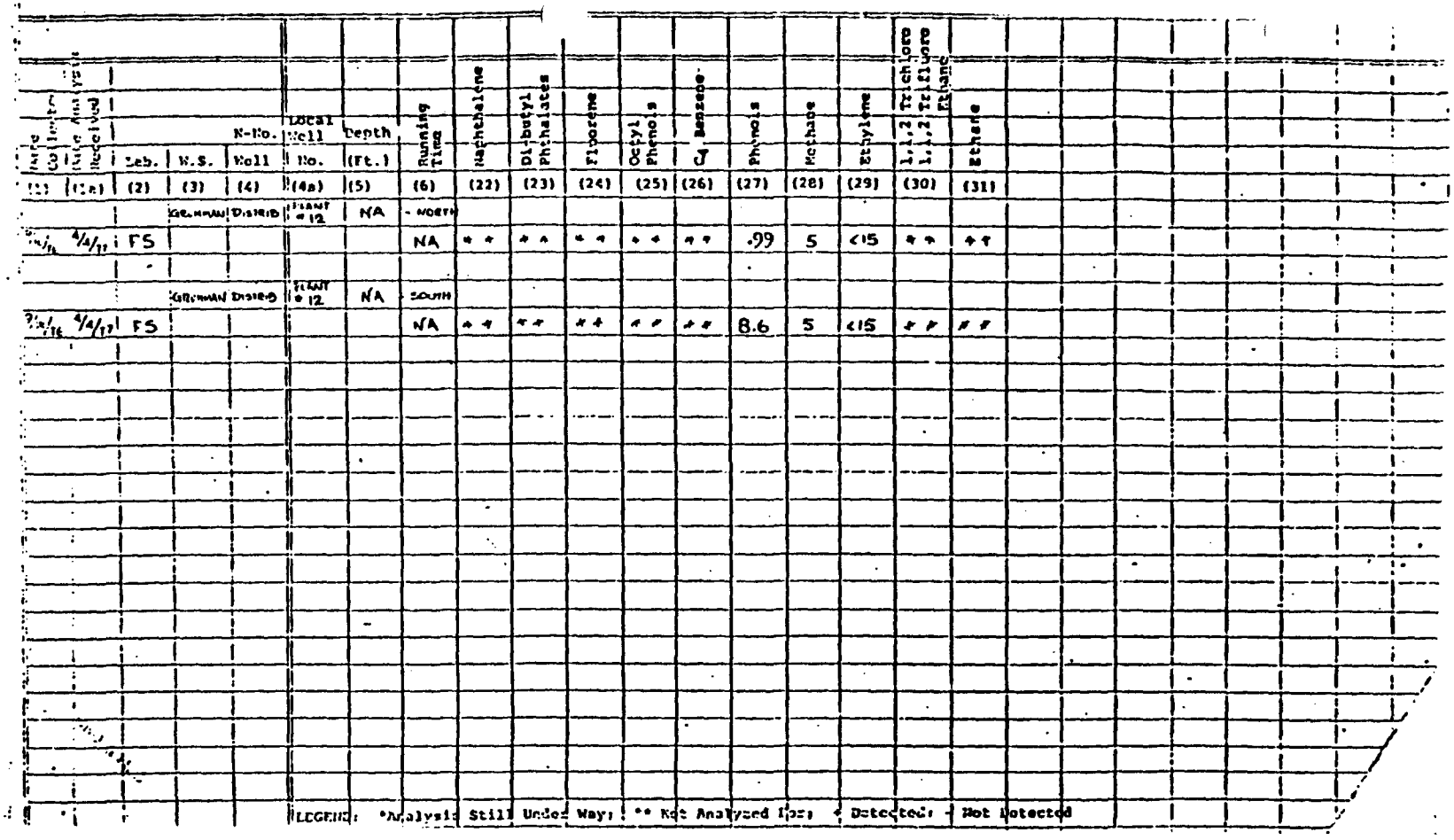
RESULTS (ug/l)

[illegible] Analysis in [illegible] ug/l [illegible] Chloroform [illegible] as noted.
C - Confirmed in [illegible]

(1)	(1a)	Lab. (2)	W.S. (3)	N-No. Well (4)	Local Well No. (4a)	Depth (Ft.) (5)	Running Time (6)	Vinyl Chlorides (7)	Chloroethylene 1,2 DI (8)	Chloroethylene 1,1,2 TRI (9)	Chloroethylene TETRA (10)	TriFluoro TriChloro Ethane (11)	1,1,1 TriChloro Ethane (12)	Chloroform (13)	Toluene (14)	Bromo Dichloro Methane (15)	Carbon Tetrachloride (16)	Benzene (17)	Methylene Chloride (18)	Ethyl Ether (19)	Total Halogenated Volatile Organics (20)	Comments (21)
			GRUMMAN	DISTRIB	PLANT #12	NA																MENS [illegible]-NORTH
[illegible]	[illegible]	FS					NA	50	<5	312	12	300	5	**	**	**	**	**	**	**	**	CLS
			GRUMMAN	DISTRIB	PLANT #12	NA																MENS [illegible]-SOUTH
[illegible]	[illegible]	FS					NA	<5	<5	<5	<5	5	<5	**	**	**	**	**	**	**	**	CLS

Legend: * Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

HRC 001 0178



Date Sampled	Date Analyzed	Date Received	Seb.	W.S.	N-No. Well	Local Well No.	Depth (Ft.)	Running Time	Naphthalene	Di-butyl Phthalates	Fluorene	Octyl Phenols	C4 Benzene	Phenols	Methane	Ethylene	1,1,2 Trichloro 1,1,2 Trifluoro Ethane	Ethane
(1)	(1a)		(2)	(3)	(4)	(4a)	(5)	(6)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
				GERMAN	DISTRICT	PLANT #12	NA	- NORTH										
4/4/17		FS						NA	**	**	**	**	**	.99	5	<15	**	**
				GERMAN	DISTRICT	PLANT #12	NA	- SOUTH										
4/4/17		FS						NA	**	**	**	**	**	8.6	5	<15	**	**

LEGEND: *Analysis Still Under Way; ** Not Analyzed For; + Detected; - Not Detected

Hooker/Rico Attachment 7.3-3

STATE OF NEW YORK
DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH

APPENDIX B

MEMORANDUM

April 15, 1980

To: G. Eadon, Ph.D.

From: R. S. Narang, Ph.D. RSN

Subject: Results of Analyses for Vinyl Chloride in Samples Collected 4 April, 1980 from Wells on the Property of Grumman Corp., Bethpage, LI

Analysis for Vinyl chloride in wells 5,6,8, and 14 on Grumman Property was carried out using the protocol established by NYS Dept. of Health. The presence of vinyl chloride in two samples was confirmed by mass spectrometry. Results are expressed as mean values for triplicate analyses.

WELL NO.	ACCESSION NO.	TIME	µg/L; Vinyl Chloride
5	080428-30	72 hr.	15.0
6	080400-2	Initial	0.7
6	080404-6	15 min.	1.1
6	080412-14	2 hr.	2.6
8	080396-98	26 hr.	10.4 **
8	080432-34	98 hr.	11.0
14	080388-90	Initial	80-50*
14	080392-94	15 min.	29.3
14	080408-10	3 hr.	10.0 **

* Amount of vinyl chloride in Well 14 dropped very quickly with increasing sampling time. This may indicate the presence of higher levels of vinyl chloride in the well line than in the aquifer.

** Presence of Vinyl Chloride confirmed by mass spectrometric analysis.

RSN/cj

8. ADEQUACY OF AVAILABLE DATA TO PREPARE FINAL HRS

Data currently available are sufficient to confirm the existence of ground water contamination attributable to the Hooker/Ruco facility. Thus, no additional effort is required for purposes of generating a final HRS score. The available data are not sufficient for evaluating potential options for remedial action, however.

APPENDIX

HAZARDOUS WASTE DISPOSAL SITES REPORT, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

9. PHASE II WORK PLAN

Given the spatial extent of ground water contamination and the nature of the aquifer, remedial action would undoubtedly involve some form of ground water treatment. In addition, it is possible that there exists a pocket of contaminated soil near the recharge basins, acting as source of contamination, for which excavation or some other form of remedial action might be appropriate. A program of borings and soil sampling is recommended to evaluate the utility of such supplemental cleaning techniques.

9.1 DETAILED WORK PLAN

Two borings (one at the southern recharge area and one at the northeast area), 100 feet deep, with soil samples taken at 10 foot intervals for analysis of volatile organics, to be completed as observation wells screened in the lower 10 feet. One ground water sample to be taken from each well for priority pollutant analysis.

9.2 HEALTH AND SAFETY PLAN

Activities

Phase II activities include: test borings and soil sampling.

General Corporate Occupational Health and Safety (COSH) Plan

The four levels of personnel protection which have been identified for use in the current project are summarized below.

Level 1: Self-Contained Positive Resource Demand--Breathing apparatus with fully encapsulated suit.

Level 2: Self-Contained Positive Resource Demand--Breathing apparatus (4-hour portable or line) with TYVEK-SARAN encapsulated disposable suit (with chemical splash suits as necessary), boots, and gloves (double NEOPRENE over VITON).

Level 3: Air purifying respirator with chemical cartridge (standard organics/acid gases/radionuclides/fumes/mists/dusts/particles), TYVEK-SARAN or polylaminated-coveralls (with hood and booties), safety boots, gloves (NEOPRENE over VITON), hard hats with integral face shield and goggles, and personal first-aid kit.

Level 4: Ibidem Level 3 except respirator use is optional. Respirators must be available in beltpack at all times.

Additionally, specific standard operating procedure manuals will be developed for each phase of work. These manuals include instructions for use of respirators, Draeger tubes, and portable organic vapor analyzers (OVA). Emergency medical information will also be included. Basic field procedures such as site entry and exit will be presented.

Ruco Site COSH Plan

Each of the activities expected to occur on any site may require a different level of protection. Likewise, the level of protection required may vary from site to site. The following level(s) of protection have been designated for use at the Ruco site:

Level 4 entire study.

If high concentrations of vinyl chloride are present in the ground water, drilling and sampling crews should wear self-contained breathing apparatus, as activated carbon respirators provide little protection against this known human carcinogen.

9.3 COST ESTIMATE

Work Element	Estimated Cost
Test borings and observation wells	$11,200
Sampling and analysis	7,800
Remedial cost estimate	2,500
Report preparation	2,500
Project management and administration	3,400
Total Estimated Cost	$27,400

4/-15-11(2/80)

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Code:_____

Site Code: 130004

Name of Site: Hooker Chemical and Plastics (Ruco Polymer) Region: 1

County: Nassau Town/City Hicksville

Street Address New South Road

Status of Site Narrative:

Site is an active manufacturing facility for polyesters, PVC compounds, polyurethanes and plasticizers. Under Hocker's operation, sumps were used to discharge toxic organic compounds to groundwater. There is also a history on on-site spills and leaks of organic chemicals.

Type of Site: Open Dump ☐ Landfill ☐ Structure ☐ Treatment Pond(s) ☐ Lagoon(s) ☒ Number of Ponds_____ Number of Lagoons_____

Estimated Size_____ Acres

Hazardous Wastes Disposed? Confirmed ☒ Suspected ☐

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
PVC resins	40 million gallons (minimum) of whole wastes, 1956-1975 period.
vinyl chloride	
trichloroethylene	50,000-250,000 lbs./year of organic compounds, 1951-1975
vinyl acetate	
perchloroethylene	

* Use additional sheets if more space is needed.

HRC 001 0186