NUS CORPORATION
A Halliburton Company

314063
Box 13
R3 RP
ER

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

NUS CORPORATION
SUPERFUND DIVISION

3032

02-8611-63-SR
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8611-63
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

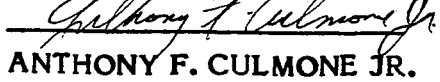
NOVEMBER 4, 1988

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

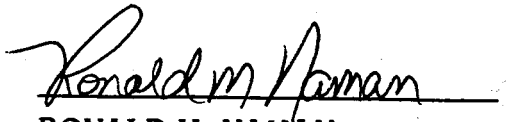


EDWARD L. LEONARD
PROJECT MANAGER



ANTHONY F. CULMONE JR.
SITE MANAGER

REVIEWED/APPROVED BY:



RONALD M. NAMAN
FIT OFFICE MANAGER

CONTENTS

Section

1. Site Inspection Report Executive Summary
2. Environmental Protection Agency Form 2070-13
3. Maps and Photographs
4. Bibliography of Information Sources
5. Press Release Summary
6. Background Information

SECTION 1

SITE INSPECTION REPORT EXECUTIVE SUMMARY

NUS CORPORATION

02-8611-63-SR
Rev. No. 0

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
EXECUTIVE SUMMARY

Hudson River Psychiatric Center **Site Name**	NYD980779490 **EPA Site ID Number**
Route 9, Poughkeepsie, Dutchess Co., NY **Address**	02-8611-63 **TDD Number**

SITE DESCRIPTION

The Hudson River Psychiatric Center (HRPC) is located in the Hudson River Valley just north of the urbanized community of Poughkeepsie, Dutchess County, New York. HRPC has six inactive landfill sites, approximately 50 acres in aggregate size, that were used between 1950 and 1979 by the Town of Poughkeepsie. HRPC disposed of institutional wastes on site for approximately 100 years. HRPC is owned by the State of New York and occupies approximately 740 acres.

There are no records of any hazardous wastes ever having been disposed of at any of these sites. Each site is located primarily in lowlands with streams running through or along disposal areas 1, 2, 5, and 6. The two unnamed streams are tributaries of the Hudson River. The Municipality of Poughkeepsie and Town of Lloyd have surface water intakes nearby in the Hudson River, for the public water supply. Also, there are a number of nonmunicipal community and private wells used in the area.

NUS Corp. Region 2 FIT conducted a site inspection at the HRPC on February 26, 1987. During the site inspection eight surface water samples were collected along with corresponding sediment samples and one leachate sample. Analytical results indicate the presence of a polychlorinated biphenyl (PCB), pesticides, polynuclear aromatic hydrocarbons (PAHs), cadmium, and silver.

Prepared by: Anthony F. Culmone Jr.
of NUS Corporation

Date: 8/28/88

SECTION 2

ENVIRONMENTAL PROTECTION AGENCY FORM 2070-13

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980779490

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)
Hudson River Psychiatric Center

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Route 9

03 CITY
Poughkeepsie

04 STATE | 05 ZIP CODE | 06 COUNTY | 07 COUNTY CODE | 08 CONG DIST.
NY | 12602 | Dutchess | 027 | 25

09 COORDINATES
LATITUDE: 41° 43' 59". N
LONGITUDE: 073° 55' 37". W

10 TYPE OF OWNERSHIP (Check one)
_ A. PRIVATE _ B. FEDERAL X C. STATE
_ D. COUNTY _ E. MUNICIPAL _ F. OTHER
_ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 2 / 26 / 87 (MONTH DAY YEAR)

02 SITE STATUS: _ ACTIVE X INACTIVE

03 YEARS OF OPERATION: 1873 (BEGINNING YEAR) / 1979 (ENDING YEAR) _ UNKNOWN

AGENCY PERFORMING INSPECTION (Check all that apply)
_ A. EPA X B. EPA CONTRACTOR NUS Corp. (Name of firm)
_ C. MUNICIPAL _ D. MUNICIPAL CONTRACTOR (Name of firm)
_ E. STATE _ F. STATE CONTRACTOR (Name of firm)
_ G. OTHER (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Peter Morton	Geologist	NUS Corp.	(201) 225-6160
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Jane Bullis	Environmental Scientist	NUS Corp.	(201) 225-6160
John Ducar	Geologist	NUS Corp.	(201) 225-6160
Gary Bielen	Environmental Scientist	NUS Corp.	(201) 225-6160
Roberta Riccio	Environmental Scientist	NUS Corp.	(201) 225-6160
Dan de Bruijn	Field Technician	NUS Corp.	(201) 225-6160

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Robert Coffey	HRPC Supervisor	Hudson River Psychiatric Center, Route 9 Branch B, Poughkeepsie, NY	(914) 452-8000

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
X PERMISSION _ WARRANT	0855	Sunny, cloudless sky, approx. 30°F, no wind.

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Amy Brochu	U.S. EPA Region 2, Edison, NJ	(201) 906-6802

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Anthony F. Culmone Jr.	EPA	NUS Corporation	(201) 225-6160	8 / 19 / 88 (MONTH DAY YEAR)

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] 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 Unknown
NO. OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] 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			
PSD	PESTICIDES	Unknown		
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

The only wastes known to have been disposed of here are Poughkeepsie municipal wastes and HRPC institutional wastes.

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

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	4-Methylphenol	106-44-5	Unknown	170J	ug/kg
OCC	Naphthalene	91-20-3	Unknown	1100	ug/kg
OCC	2-Methylnaphthalene	91-57-6	Unknown	1000	ug/kg
OCC	Acenaphthene	83-32-9	Unknown	920	ug/kg
OCC	Dibenzofuran	132-64-9	Unknown	760	ug/kg
OCC	Fluorene	86-73-7	Unknown	1100	ug/kg
OCC	Phenanthrene	85-01-8	Unknown	8100	ug/kg
OCC	Anthracene	120-12-7	Unknown	1700	ug/kg
OCC	Fluoranthene	206-44-0	Unknown	9000	ug/kg
OCC	Pyrene	129-00-0	Unknown	6400	ug/kg
OCC	Benzo(a)anthracene	56-55-3	Unknown	4200	ug/kg
OCC	Bis(2-ethylhexyl)phthalate	117-81-7	Unknown	2200	ug/kg
OCC	Chrysene	218-01-9	Unknown	4600	ug/kg
OCC	Benzo(b)fluoranthene	205-99-2	Unknown	5100	ug/kg
OCC	Benzo(k)fluoranthene	207-08-9	Unknown	3300	ug/kg
OCC	Benzo(a)pyrene	50-32-8	Unknown	4300	ug/kg
OCC	Indeno(1,2,3-cd)pyrene	193-39-5	Unknown	1700	ug/kg
OCC	Benzo(g,h,i)perylene	191-24-2	Unknown	1600	ug/kg
PSD	4,4'-DDE	72-55-9	Unknown	250	ug/kg
PSD	4,4'-DDD	72-54-8	Unknown	210	ug/kg
PSD	4,4'-DDT	50-29-3	Unknown	170	ug/kg
OCC	Aroclor-1248	12672-29-6	Unknown	1700J	ug/kg
OCC	Aroclor-1260	11096-82-5	Unknown	1,700,000	ug/kg
MES	Cadmium	7440-43-9	Unknown	105	mg/kg
MES	Silver	7440-22-4	Unknown	53	mg/kg
OCC	Chlorobenzene	108-90-7	Unknown	9	ug/kg

J - Compound present above the instrument detection limit, but below contract-specified detection limit.

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Not Applicable		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

Telecon Note: Conversation between R. Coffey, HRPC, and J. Mayo, NUS Corp.; November 6,1986.
Telecon Note: Conversation between R. Coffey, HRPC, and P. Morton, NUS Corp., March 17, 1987.
NYSDEC, Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, October 1983.
Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26, 1987.
U.S. EPA Contract Laboratory Program, Versar, Inc., Organics Analyses and Century Labs, Inc., Inorganics Analyses, Case No. 6889, Laboratory Analysis from NUS Corp. Region 2 FIT Site Inspection conducted on February 26, 1986.

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1042 — 04 NARRATIVE DESCRIPTION

Potential exists for the hazardous substances found on site to migrate into the groundwater. Approximately 1042 people living north of the site use groundwater for drinking.

01 X B. SURFACE WATER CONTAMINATION — 02 X OBSERVED (DATE: 2/26/87) — POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 64,370 — 04 NARRATIVE DESCRIPTION

Observed releases of 4,4'-DDD, 4,4'-DDE, silver, and cadmium were detected in sediment samples collected on 2/26/87. The surface water intakes for the municipal water supply of the City and Town of Poughkeepsie and Town of Lloyd are located in the Hudson River approximately 0.7 mile and 1.5 miles, respectively, downstream from the site, serving a population of approximately 64,370.

01 C. CONTAMINATION OF AIR — 02 OBSERVED (DATE:) — POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

No potential exists as each of the landfill sites is covered. No readings above background were noted during air monitoring with the OVA and HNu detectors during the NUS Corp. Region 2 FIT site inspection conducted on 2/26/87.

01 D. FIRE/EXPLOSIVE CONDITIONS — 02 OBSERVED (DATE:) — POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

The disposal areas are covered, and there were no readings above background that were detected on the air monitoring instruments. There is no past record of problems at this site, and the current conditions indicate that there is no present hazard.

01 X E. DIRECT CONTACT — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5038 — 04 NARRATIVE DESCRIPTION

The entire area is unfenced and unguarded. Approximately 5038 people live within 1 mile of the site. Access to the contaminated on-site streams is not restricted. Facility residents play golf near disposal area No. 1 where leachate is present.

01 X F. CONTAMINATION OF SOIL — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 AREA POTENTIALLY AFFECTED: Approx. 50 (ACRES) — 04 NARRATIVE DESCRIPTION

During the NUS Corp. Region 2 FIT site inspection conducted on February 26, 1987, no soil samples were collected. The potential for soil contamination does exist since stream sediment samples were found to contain contaminants.

01 X G. DRINKING WATER CONTAMINATION — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Approx. 65,412 — 04 NARRATIVE DESCRIPTION

The potential exists for contamination of drinking water as there are both a number of wells and two surface water intakes within 3 miles of the site.

01 X H. WORKER EXPOSURE/INJURY — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 WORKERS POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

There is no history of any worker injuries due to disposal of wastes on site; however, there are no restrictions to access of the contaminated stream sediments.

01 X I. POPULATION EXPOSURE/INJURY — 02 OBSERVED (DATE:) — X POTENTIAL — ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 65,412 — 04 NARRATIVE DESCRIPTION

The potential exists for groundwater and surface water contamination. Approximately 65,412 people within 3 miles of HRPC use groundwater and surface water as their source of drinking water. Since a commercial fishery as well as a sport fishery exist in the Hudson River, consumption of fish having bioaccumulated contaminants may occur.

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 X J. DAMAGE TO FLORA — 02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

There was no damage to flora noted during the site inspection on 2/26/87. Potential exists for plants to bioaccumulate contaminants, which were found to have leached into the on-site stream sediments.

01 X K. DAMAGE TO FAUNA — 02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

There was no damage to fauna noted during the site inspection on 2/26/87. However, fauna may bioaccumulate these contaminants.

01 X L. CONTAMINATION OF FOOD CHAIN — 02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

If the contaminants migrate to the Hudson River via the unnamed on-site streams, bioaccumulations in river biota may occur. This region of the Hudson River is used as a commercial fishery for shad (Alosa sapidissima). Sport fishing occurs in this region of the river also.

01 X M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 X OBSERVED (DATE: 2/26/87) _ POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

The leachate-stained soil on the northern side of disposal area No. 1 contained heavy metals. Contaminants were found in the sediments of the streams adjacent to the disposal areas.

01 N. DAMAGE TO OFFSITE PROPERTY — 02 _ OBSERVED (DATE: _____) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

No damage to off-site property was noted during the site inspection on 2/26/87.

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 _ OBSERVED (DATE: _____) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

There are no sewer or storm drain systems in use in the area.

01 X P. ILLEGAL/UNAUTHORIZED DUMPING — 02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

The six old landfill areas were unfenced, and the potential for illegal dumping existed.

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

None.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 65,412 through drinking water

IV. COMMENTS

None

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

Telecon Note: Conversation between F. Andros, Town of Poughkeepsie Water Dept., and P. Morton, NUS Corp., January 26, 1987.
Hudson River Psychiatric Center, Dutchess County, New York, EA Science and Technology, January 15, 1985. Site Investigation and Hazard Ranking reports.
New York State Atlas of Community Water System Sources, New York State Department of Health, 1982.
Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26, 1987.
Telecon Note: Conversation between F. Andros, Town of Poughkeepsie Water Dept., and P. Morton, NUS Corp., January 26, 1987.
U.S. EPA Contract Laboratory Program, Versar, Inc., Organics Analyses and Century Labs, Inc., Inorganics Analyses, Case No. 6889, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on February 26, 1987.
General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.
NYSDEC, Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, October 1983.
Telecon Note: Conversation between K. Hattala, NYSDEC, and A. Culmone, NUS Corp., October 3, 1988.
Sax, N.I. and R.J. Lewis, Sr. Hazardous chemicals desk reference. New York: Van Nostrand Reinhold Company, Inc., 1987.

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

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY 0980779490

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				The HRPC did not have any formal permits for waste disposal.
_ B. UIC				
_ C. AIR				
_ D. RCRA				
_ E. RCRA INTERIM STATUS				
_ F. SPCC PLAN				
_ G. STATE (Specify)				
_ H. LOCAL (Specify)				
_ I. OTHER (Specify)				
X J. NONE				

III. SITE DESCRIPTION

01 Storage/Disposal (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
_ A. SURFACE IMPOUNDMENT			_ A. INCINERATION	_ A. BUILDINGS ON SITE
_ B. PILES			_ B. UNDERGROUND INJECTION	Approx. 30
_ C. DRUMS, ABOVE GROUND			_ C. CHEMICAL/PHYSICAL	06 AREA OF SITE
_ D. TANK, ABOVE GROUND			_ D. BIOLOGICAL	
_ E. TANK, BELOW GROUND			_ E. WASTE OIL PROCESSING	
X F. LANDFILL	Unknown		_ F. SOLVENT RECOVERY	Approx. 740 (Acres)
_ G. LANDFARM			_ G. OTHER RECYCLING/RECOVERY	
_ H. OPEN DUMP			_ H. OTHER None (Specify)	
_ I. OTHER (Specify)				

07 COMMENTS

The HRPC is a large facility with approximately 30 buildings. Hospital buildings, police and fire departments, and 10 to 20 small houses are all present on site. The six old landfills are no longer in evidence. They are unfenced and covered with vegetation. The leachate-stained soil appears to be the result of iron staining.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

The landfills were used for municipal and institutional waste. No known liners or collection systems were used.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: X YES _ NO

02 COMMENTS

There are no barriers around the old landfills. The locations of all six disposal areas are easily accessible.

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

Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26, 1987.
Hudson River Psychiatric Center, Dutchess County, New York, EA Science and Technology, January 15, 1985. Site Investigation and Hazard Ranking Reports.
Telecon Note: Conversation between R. Coffey, Hudson River Psychiatric Center, and J. Mayo, NUS Corp., November 6, 1986.
NYSDEC, Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, October 1983.

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980779490

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. X	B.	A.	B.	C. X	A. 0.7 (mi)
NON-COMMUNITY	C.	D. X	D.	E.	F. X	B. 0.9 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

X A. ONLY SOURCE FOR DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

_ B. DRINKING

_ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)

_ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: Approx. 1042

03 DISTANCE TO NEAREST DRINKING WATER WELL: 0.9 (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
Approx. 15 (ft)	west	Approx.157 (ft)	62,000 (gpd)	_

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

Listed on Attachment A are the nonmunicipal community wells located within a 3-mile radius of the site.

10 RECHARGE AREA

X YES
_ NO

COMMENTS: The bedrock aquifier is at a shallow depth and overlain by permeable sands, gravels, and glacial till.

11. DISCHARGE AREA

X YES
_ NO

COMMENTS: Leachate-stained ground was observed on the north side of disposal area No. 1.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

X 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
Small unnamed pond	Yes	On site (mi)
Two unnamed tributaries to Hudson River.	Yes	On site (mi)
Hudson River		0.5 (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. 5,038 NO. OF PERSONS	B. 17,838 NO. OF PERSONS	C. 39,219 NO. OF PERSONS	0.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
5610	0.1 (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)

The Hudson River Psychiatric Center is on the northern outskirts of Poughkeepsie. The area to the south of the property is urban in nature. The area north of the facility is more rural and sparsely populated. The Hudson River lies to the west of the site.

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 X D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

_ A. IMPERMEABLE (Less than 10^{-6} cm/sec) X 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
0 - 23 (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 (in)	3.0 (in)	3.4 %	West	Not Applicable

09 FLOOD POTENTIAL

SITE IS IN 500 YEAR FLOODPLAIN _ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

10

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. > 2 (mi) OTHER: B. > 1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

> 1 (mi)

ENDANGERED SPECIES: Not Applicable

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. 0.5 (mi)	B. residential-0.1 (mi)	C. > 2 (mi)	D. > 1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is on the northern outskirts of Poughkeepsie. The area to the south is urban. The area to the north of the site is more rural and sparsely populated. To the west there is a sharp drop to the Hudson River. Two unnamed tributaries to the Hudson River flow through the site.

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

Telecon Note: Conversation between F. Andros, Town of Poughkeepsie Water Dept., and P., Morton, NUS Corp., January 26, 1987.
U.S. Fish and Wildlife Service list of Endangered and Threatened Wildlife and Plants, January 9, 1985.
Three-Mile Vicinity Map based on U.S. Geological Survey Maps, 15-minute series, "Poughkeepsie Quadrangle,"1957, revised 1982; "Hyde Park Quadrangle," 1963, revised 1980; "Pleasant Valley Quadrangle," 1957, revised 1981; and "Salt Point Quadrangle," 1963.
General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.
Simmons, E.T., I.G. Grossman, and R.C. Heath,Ground-Water Resources of Dutchess County, New York. NYSDEC Water Resources Commission, Bulletin GW-43. Albany, New York, 1961.
Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.
Telecon Note: Conversation between F. Andros, Poughkeepsie Water Dept., and A.Culmone, NUS Corp., August 18, 1988.
Telecon Note: Conversation between B. O'Neil, Hyde Park Water Co., and A. Culmone, NUS Corp., August 18, 1988.
Telecon Note: Conversation between J. Jankiewitz, Town of Lloyd Water Dept., and A. Culmone, NUS Corp., August 17, 1988.
Flood Insurance Rate Map for the Town of Poughkeepsie, New York, Panel No. 361142-0005-A, November 15, 1978.
Telecon Note: Conversation between K. Hattala, NYSDEC, and A. Culmone, NUS Corp., October 3, 1988.
Telecon Note: Conversation between B. Dibble, Dutchess County Soil Conservation Service, A. Culmone, NUS Corp., October 21, 1988.

Attachment A

Well	Well Number	Distance/ Location	Population Served
Dutch Garden Apartments	73	0.9 mi. - NW	450
Eleanor Roosevelt	76	2.3 mi. - N	200
Frantoni Villas	50	1.8 mi. - N	50
Green Meadow Trailer Court	44	2.7 mi. - N	44
Hyde Park Terrace Apartments	70	1.3 mi. - N	70
M and D Mobil Home Park	108	1.8 mi. - N	108
Valley Forge Mobil Home Park	60	1.1 mi. - NE	60
Willow Tree Park	30	1.7 mi. - NE	30
Woodfield Apartments	7	3.0 mi. - N	7
Total Population Served			1019

There are 6 private wells known to exist within 3 miles of the site.

Six wells at 3.8 persons/well = 23 persons

Well Number	Distance/ Location
83	2.5 mi. - N
98	1.9 mi. - N
104	2.8 mi. - N
105	2.6 mi. - N
204	2.9 mi. - N
218	2.9 mi. - N

Approximate number of persons served by wells:
1019 + 23 = 1042 persons

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980779490

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER	8	Organics sent to: Versar Inc. 6850 Versar Center Springfield, VA	Results Received 9/14/87
WASTE			
AIR			
RUNOFF		Inorganics sent to: Century Labs, Inc. 1501 Grandview Ave. Thorofare, NJ	Results Received 10/6/87
SPILL			
SOIL/Sediment	9		
VEGETATION			
OTHER/Blank	1		

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air	Air monitoring was performed during all sampling activities with an OVA flame ionization detector and an HNu photoionization detector. No readings above background were noted.

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND _ AERIAL 02 IN CUSTODY OF NUS Corp. Region 2 FIT, Edison, NJ
(Name of organization or individual)

03 MAPS 04 LOCATION OF MAPS

X YES NUS Corp. Region 2 FIT, Edison, NJ

_ NO

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None

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

Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26, 1987.

U.S. EPA Contract Laboratory Program, Versar, Inc., Organics Analyses and Century Labs, Inc., Inorganics Analyses, Case No. 6889, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on February 26, 1987.

II. CURRENT OWNER(S)

01 NAME	02 D + B NUMBER	08 NAME (PARENT COMPANY (If applicable))	09 D + B NUMBER
New York State/Hudson River Psychiatric Center			
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	**04 SIC CODE**	**10 STREET ADDRESS (P.O. Box, RFD#, etc.)**	**11 SIC CODE**
Rte. 9			
05 CITY / **06 STATE**	**07 ZIP CODE**	**12 CITY** / **13 STATE**	**14 ZIP CODE**
Poughkeepsie / New York	12602		

01 NAME	02 D + B NUMBER	08 NAME	09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	**04 SIC CODE**	**10 STREET ADDRESS (P.O. Box, RFD#, etc.)**	**11 SIC CODE**
05 CITY / **06 STATE**	**07 ZIP CODE**	**12 CITY** / **13 STATE**	**14 ZIP CODE**

01 NAME	02 D + B NUMBER	08 NAME	09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	**04 SIC CODE**	**10 STREET ADDRESS (P.O. Box, RFD#, etc.)**	**11 SIC CODE**
05 CITY / **06 STATE**	**07 ZIP CODE**	**12 CITY** / **13 STATE**	**14 ZIP CODE**

01 NAME	02 D + B NUMBER	08 NAME	09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	**04 SIC CODE**	**10 STREET ADDRESS (P.O. Box, RFD#, etc.)**	**11 SIC CODE**
05 CITY / **06 STATE**	**07 ZIP CODE**	**12 CITY** / **13 STATE**	**14 ZIP CODE**

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

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

01 NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
Not Applicable			
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**

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)

Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26 ,1987.

Hudson River Psychiatric Center, Dutchess County, New York, EA Science and Technology, January 15, 1985. Site Investigation and Hazard Ranking Reports.

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

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980779490

II. CURRENT OPERATOR(S)

01 NAME	02 D + B Number	OPERATOR'S PARENT COMPANY (If applicable) 10 NAME	11 D + B NUMBER
Not Applicable			
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE
05 CITY 06 STATE	07 ZIP CODE	14 CITY 15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWNER			

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

01 NAME	02 D + B Number	PREVIOUS OPERATOR'S PARENT COMPANIES (If applicable) 10 NAME	11 D + B NUMBER
Not Applicable			
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE
05 CITY 06 STATE	07 ZIP CODE	14 CITY 15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWNER			

01 NAME	02 D + B Number	10 NAME	11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE
05 CITY 06 STATE	07 ZIP CODE	14 CITY 15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWNER			

01 NAME	02 D + B Number	10 NAME	11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE
05 CITY 06 STATE	07 ZIP CODE	14 CITY 15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 09 NAME OF OWNER			

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



1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D980779490

II ON-SITE GENERATOR

01 NAME	02 D + B NUMBER
Hudson River Psychiatric Center	
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
Rte. 9	
05 CITY / 06 STATE	07 ZIP CODE
Poughkeepsie NY	12602

III OFF-SITE GENERATOR(S)

01 NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
Town of Poughkeepsie			
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
Court House, Main Street			
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE
Poughkeepsie NY	12602		

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
Town of Poughkeepsie			
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
Court House, Main Street			
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE
Poughkeepsie NY	12602		

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)

Telecon Note: Conversation between R. Coffey, Hudson River Psychiatric Center, and P. Morton, NUS Corp., March 17, 1987.
Telecon Note: Conversation between R. Coffey, Hudson River Psychiatric Center, and J. Mayo, NUS Corp., November 6, 1986.
NYSDEC, Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, October 1983.
Hudson River Psychiatric Center, Dutchess County, New York, EA Science and Technology, January 15, 1985. Site Investigation and Hazard Ranking Reports.

II. PAST RESPONSE ACTIVITIES

01 A. WATER SUPPLY CLOSED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 D. SPILLED MATERIAL REMOVED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 E. CONTAMINATED SOIL REMOVED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 F. WASTE REPACKAGED — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 G. WASTE DISPOSED ELSEWHERE — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 H. ON SITE BURIAL — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 I. IN SITU CHEMICAL TREATMENT — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 J. IN SITU BIOLOGICAL TREATMENT — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 K. IN SITU PHYSICAL TREATMENT — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 L. ENCAPSULATION — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 M. EMERGENCY WASTE TREATMENT — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 N. CUTOFF WALLS — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 P. CUTOFF TRENCHES/SUMP — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 Q. SUBSURFACE CUTOFF WALL — 02 DATE: _____ — 03 AGENCY: _____
04 DESCRIPTION

No previous history.

II. PAST RESPONSE ACTIVITIES

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

No previous history.

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

I. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION _ YES X NO

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

There is no history of any regulatory/enforcement action at this site.

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

SECTION 3

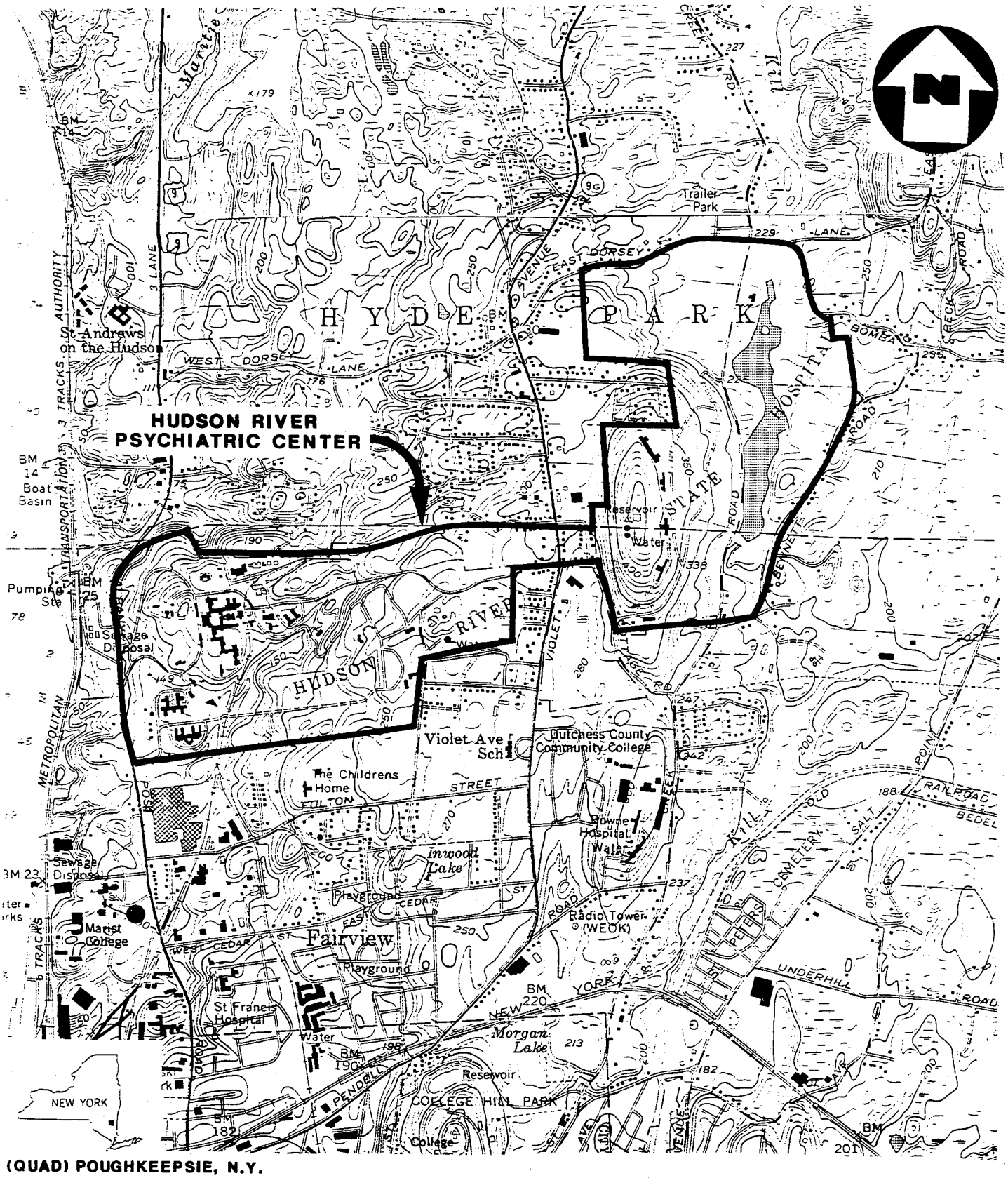
MAPS AND PHOTOGRAPHS

HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, NEW YORK

CONTENTS

Figure 1: Site Location Map
Figure 2: Site Map
Figure 3: Sample Location Map

Exhibit A: Photograph Log



(QUAD) POUGHKEEPSIE, N.Y.

FIGURE 1

SITE LOCATION MAP
HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, N.Y.

SCALE: 1" = 2000'

NUS CORPORATION

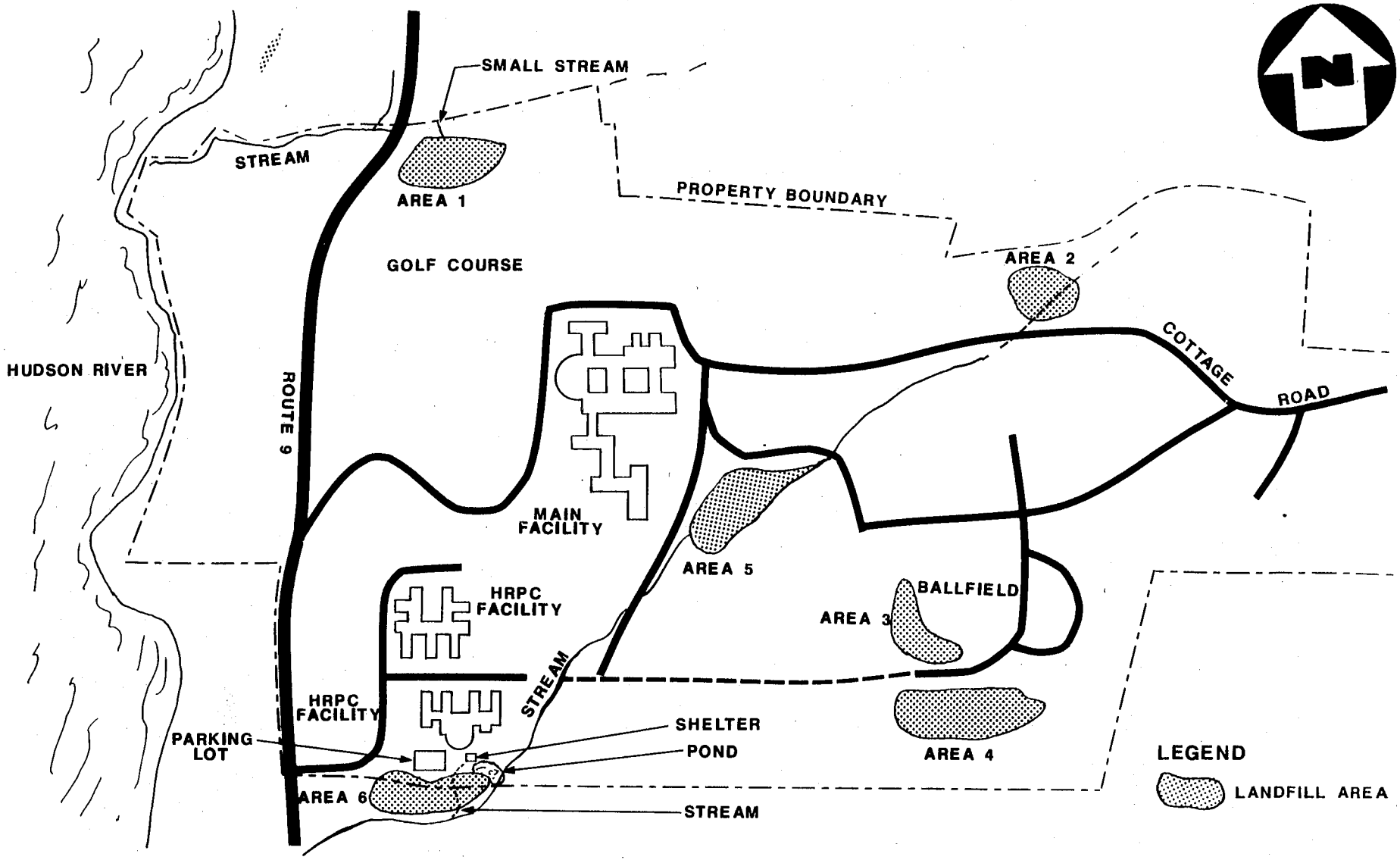


FIGURE 2

SITE MAP
HUDSON RIVER PSYCHIATRIC CENTER,
POUGHKEEPSIE, N.Y.

NOT TO SCALE

NUS CORPORATION

02-8611-63
Rev. No. 0

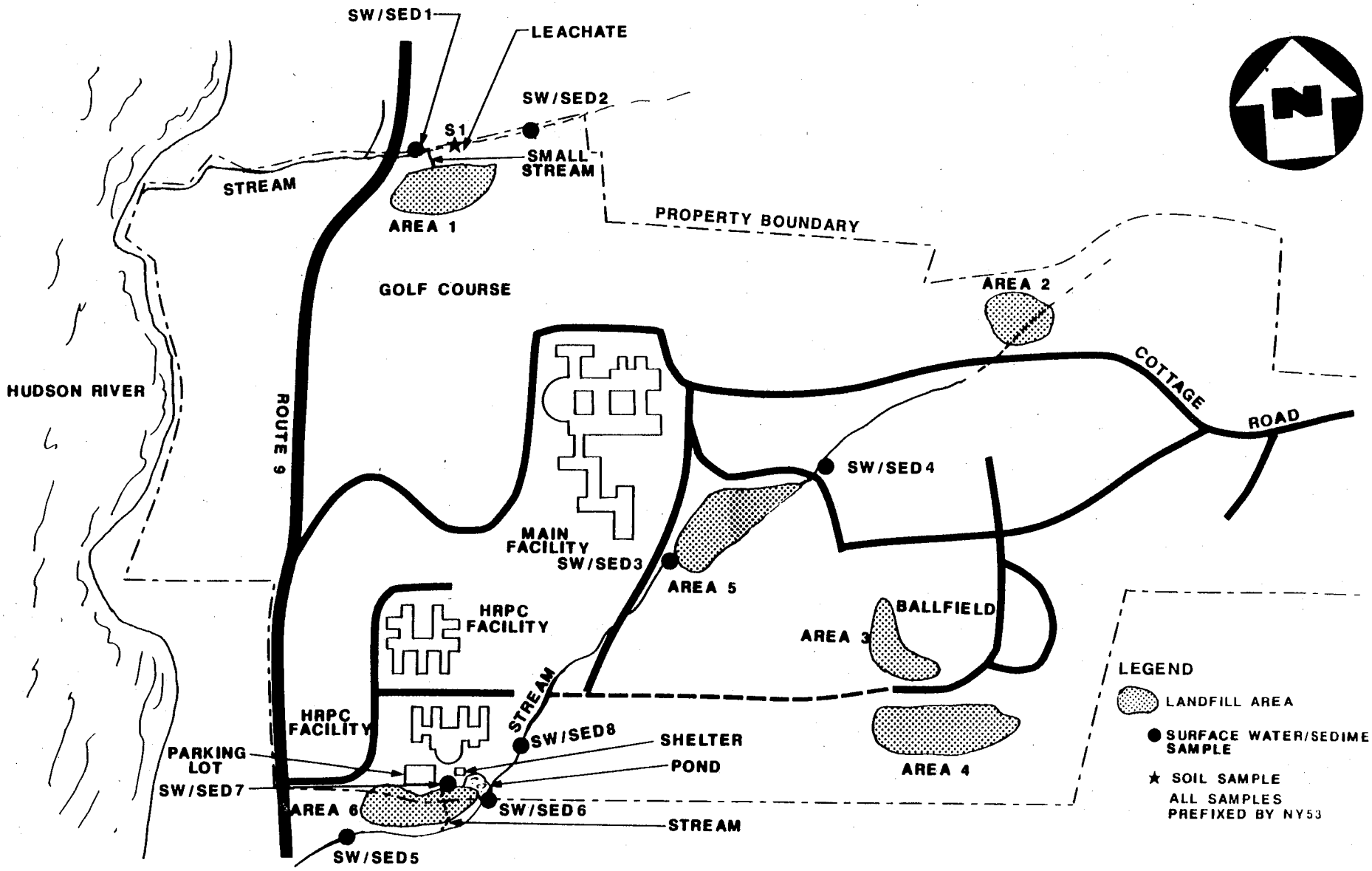


FIGURE 3

SAMPLE LOCATION MAP
HUDSON RIVER PSYCHIATRIC CENTER,
POUGHKEEPSIE, N.Y.

NOT TO SCALE

NUS CORPORATION

02-8611-63
Rev. No. C

EXHIBIT A

PHOTOGRAPH LOG

HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, NEW YORK

SITE INSPECTION: FEBRUARY 26, 1987

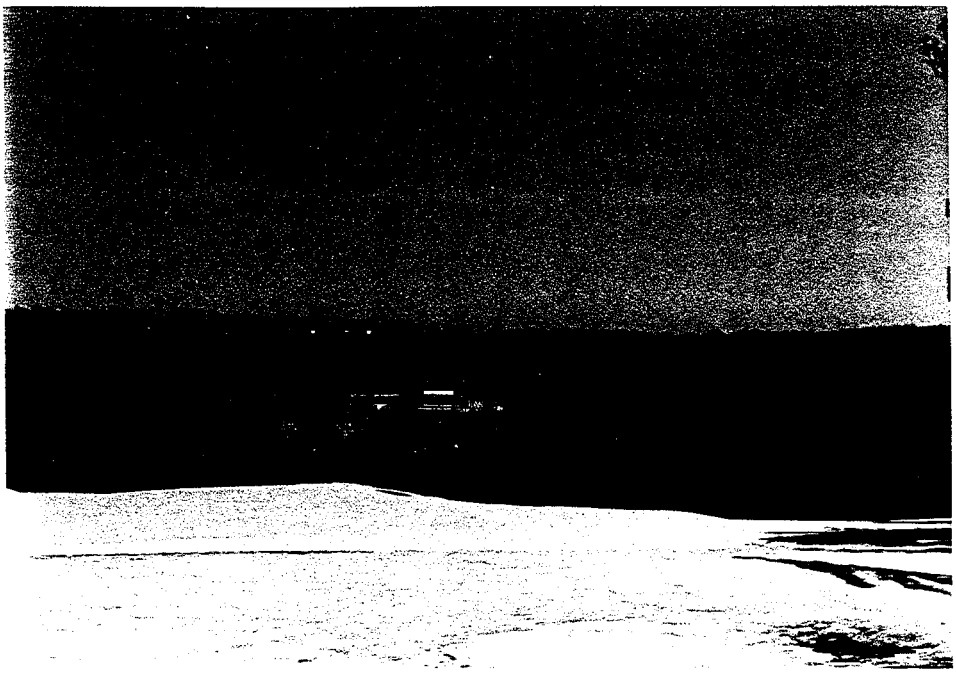
HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, NEW YORK
TDD NO. 02-8611-63
FEBRUARY 26, 1987

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS TAKEN BY PETER MORTON

Photo Number	Description	Time
1P-9	Looking west across disposal area No. 1.	1115
1P-2	Leachate discharging from northern side of disposal area No. 1.	1023
1P-3	Dan de Bruijn on level B with OVA and HNu by leachate area (no readings above background were obtained).	1021
1P-4	Dan de Bruijn collecting soil sample S-1 from area of leachate discharge.	1026
1P-5	Roberta Riccio collecting sample SW-1.	1044
1P-6	Roberta Riccio collecting sample SED-1.	1051
1P-7	Dan de Bruijn collecting sample SW-2.	1111
1P-8	Dan de Bruijn collecting sample SED-2.	1111
1P-11	Dan de Bruijn collecting sample SW-3.	1249
1P-12	Dan de Bruijn collecting sample SED-3.	1253
1P-13	Dan de Bruijn collecting sample SW-4.	1322
1P-14	Dan de Bruijn collecting sample SED-4.	1325
1P-15	Dan de Bruijn collecting sample SW-5.	1423
1P-16	Dan de Bruijn collecting sample SED-5.	1430
1P-23	Pond area where samples SW-6 and SED-6 were collected	1540
1P-18	Dan de Bruijn collecting sample SW-6.	1505
1P-19	Dan de Bruijn collecting sample SED-6.	1508
1P-24	Rusted drums adjacent to stream where SW-7 and SED-7 were collected.	1540
1P-17	Roberta Riccio collecting sample SED-7 (placard reads SW-6).	1454
1P-20	Roberta Riccio collecting sample SW-7.	1511
1P-21	Dan de Bruijn collecting sample SW-8.	1531
1P-22	Dan de Bruijn collecting sample SED-8.	1533
1P-10	Roberta Riccio decontaminating sample bottles.	1140

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-9 February 26, 1987 1115
Looking west across disposal area No. 1.
Photographer: Peter Morton



1P-2 February 26, 1987 1023
Leachate discharging from northern side of disposal area No. 1.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-3 February 26, 1987 1021
Dan de Bruijn on level B with OVA and HNu by leachate area (no readings above background were obtained).
Photographer: Peter Morton



1P-4 February 26, 1987 1026
Dan de Bruijn collecting soil sample S-1 from area of leachate discharge.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



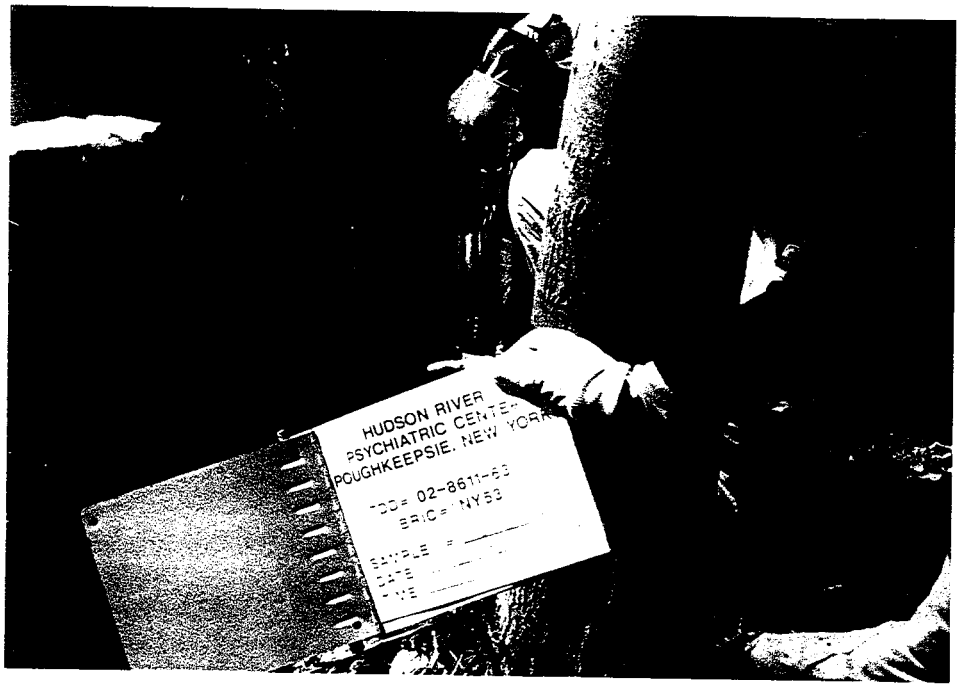
1P-5 February 10, 1987 1044
Roberta Riccio collecting sample SW-1.
Photographer: Peter Morton



1P-6 February 26, 1987 1051
Roberta Riccio collecting sample SED-1
Photographer: Peter Morton



1P-7 February 26, 1987 1111
Dan de Bruijn collecting sample SW-2.
Photographer: Peter Morton



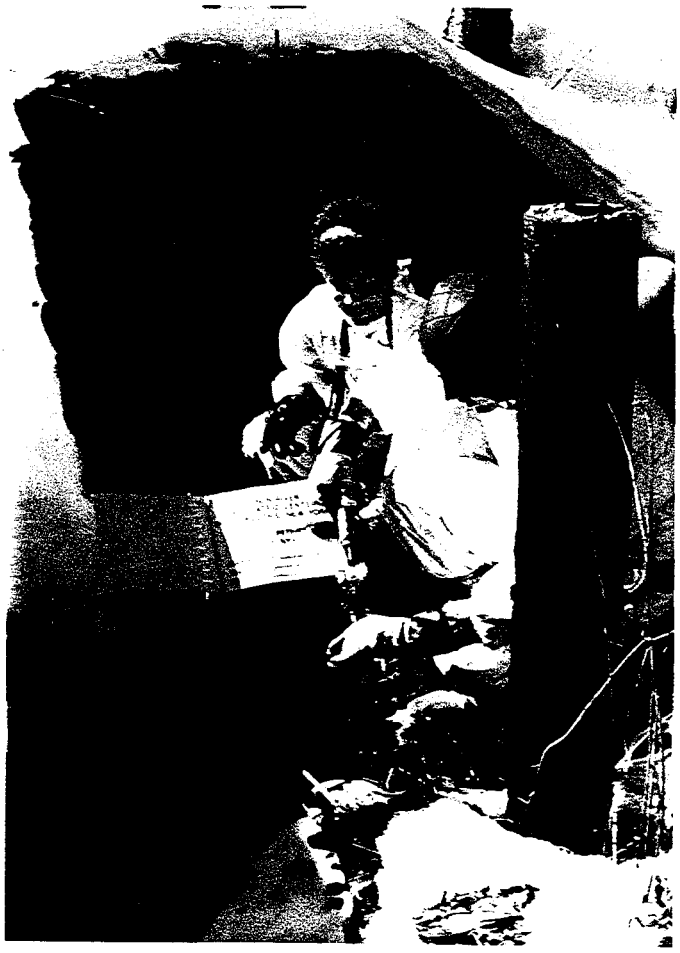
1P-8 February 26, 1987 1111
Dan de Bruijn collecting sample SED-2.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-11 February 26, 1987 1249
Dan de Bruijn collecting sample SW-3.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK

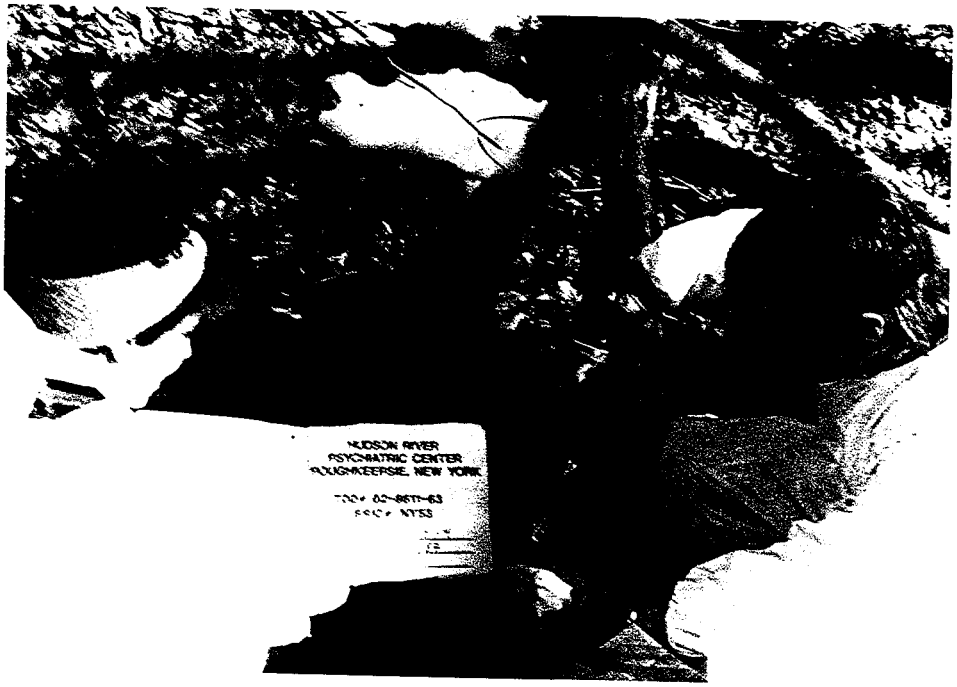


1P-12 February 26, 1987 1253
Dan de Bruijn collecting sample SED-3.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-13 February 26, 1987 1322
Dan de Bruijn collecting sample SW-4.
Photographer: Peter Morton



1P-14 February 26, 1987 1325
Dan de Bruijn collecting sample SED-4.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-15 February 26, 1987 1423
Dan de Bruijn collecting sample SW-5.
Photographer: Peter Morton

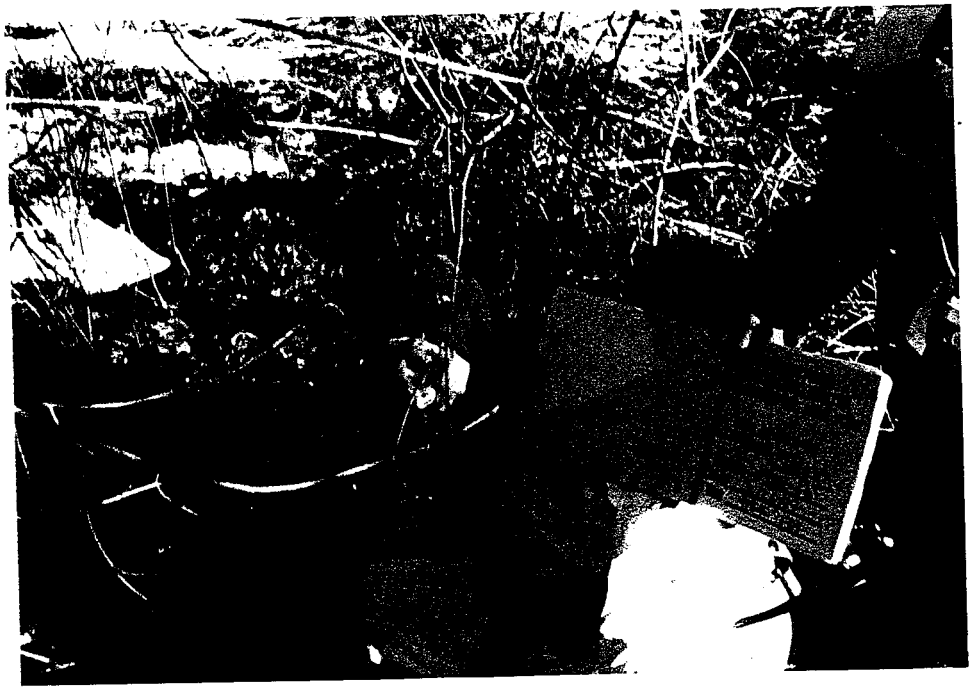


1P-16 February 26, 1987 1430
Dan de Bruijn collecting sample SED-5.
Photographer: Peter Morton



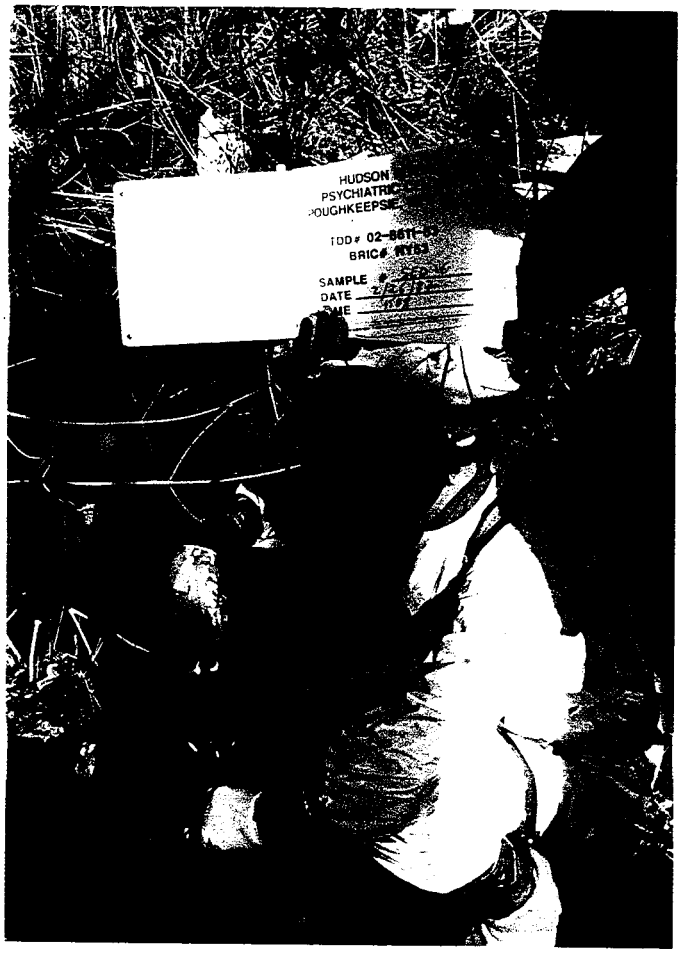
1P-23 February 26, 1987 1540
Pond area where samples SW-6 and SED-6 were collected.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-18 February 26, 1987 1505
Dan de Bruijn collecting sample SW-6.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



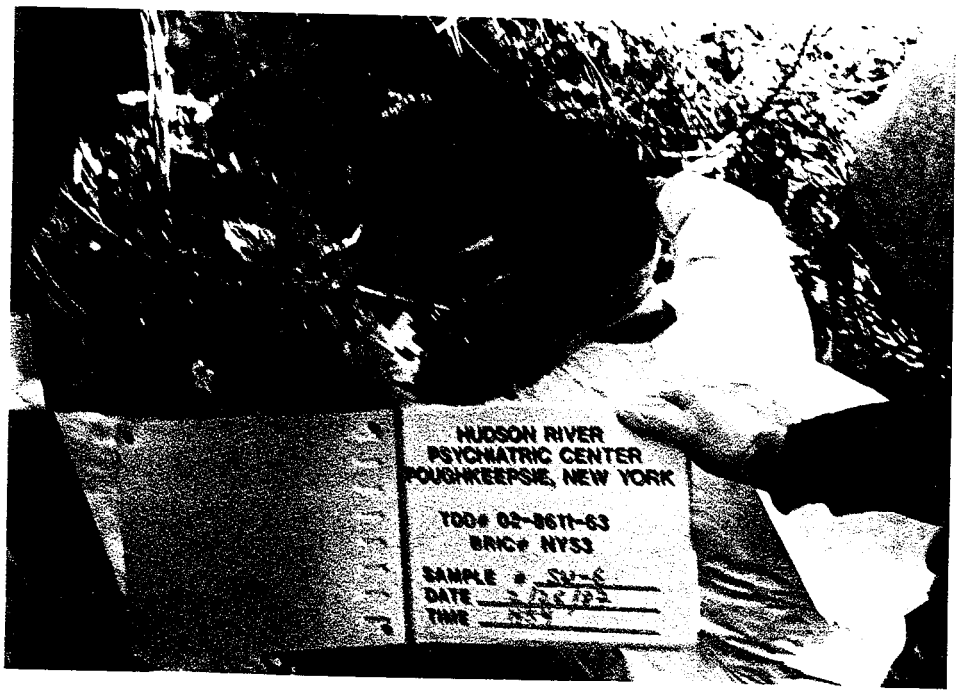
1P-19 February 26, 1987 1508
Dan de Bruijn collecting sample SED-6.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-24 February 26, 1987 1540
Rusted drums adjacent to stream where SW-7 and SED-7 were collected.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK

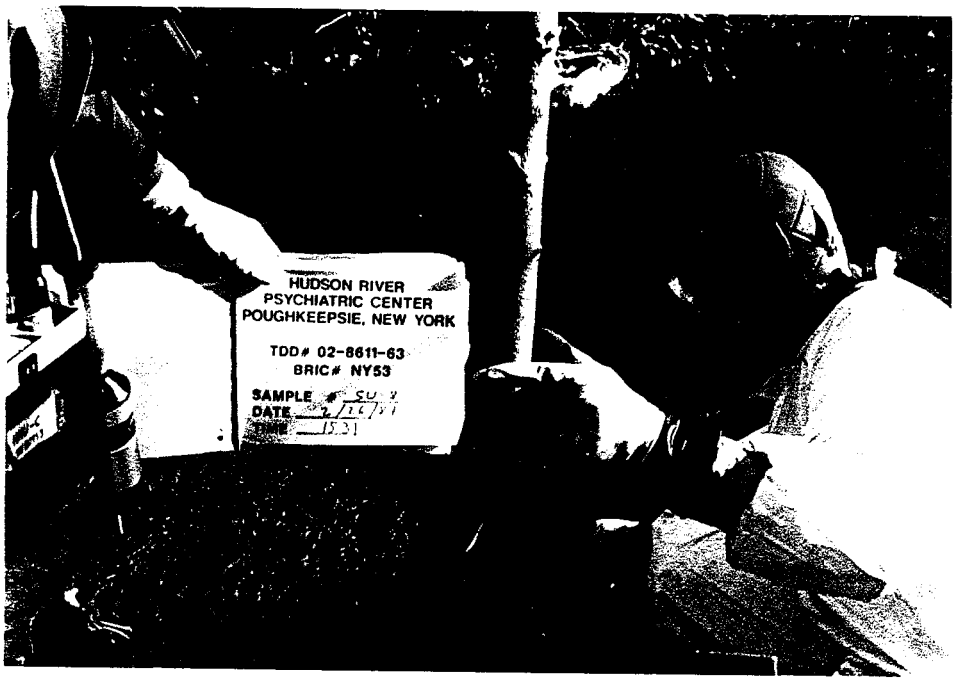


1P-17 February 26, 1987 1454
Roberta Riccio collecting sample SED-7 (placard reads SW-6).
Photographer: Peter Morton

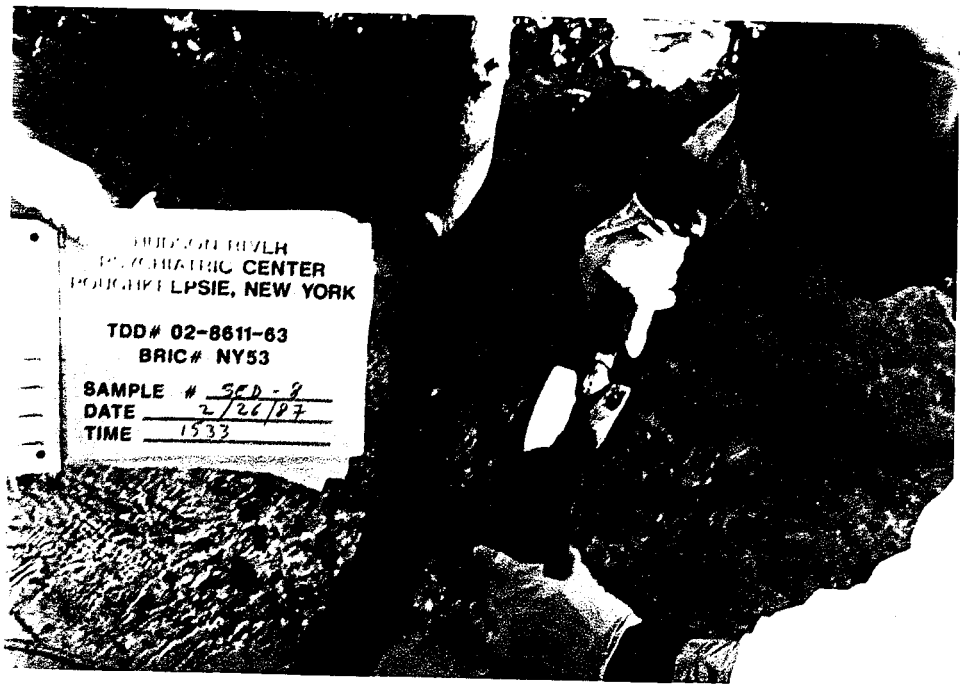


1P-20 February 26, 1987 1511
Roberta Riccio collecting sample SW-7.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-21 February 26, 1987 1531
Dan de Bruijn collecting sample SW-8.
Photographer: Peter Morton



1P-22 February 26, 1987 1533
Dan de Bruijn collecting sample SED-8.
Photographer: Peter Morton

HUDSON RIVER PSYCHIATRIC CENTER, POUGHKEEPSIE, NEW YORK



1P-10 February 26, 1987 1140
Roberta Riccio decontaminating sample bottles.
Photographer: Peter Morton

SECTION 4

BIBLIOGRAPHY OF INFORMATION SOURCES

BIBLIOGRAPHY OF INFORMATION SOURCES

	SOURCE	LOCATION
1.	Field Notebook No. 0024, Hudson River Psychiatric Center, TDD No. 02-8611-63, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, February 26, 1987.	NUS Corp. Edison, NJ
2.	Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.	NUS Corp. Edison, NJ
3.	Hudson River Pyschiatric Center, Dutchess County, New York, EA Science and Technology, January 15, 1985. Site Investigation and Hazard Ranking Reports.	NUS Corp. Edison, NJ
4.	Simmons, E.T., I.G. Grossman, and R.C. Heath. Ground-Water Resources of Dutchess County, New York. NYSDEC Water Resources Commission, Bulletin GW-43. Albany, New York, 1961.	NUS Corp. Edison, NJ
5.	Telecon Note: Conversation between K. Hattala, NYSDEC, and A. Culmone, NUS Corp., October 3, 1988.	NUS Corp. Edison, NJ
6.	New York State Atlas of Community Water System Sources, New York State Department of Health, 1982.	NUS Corp. Edison, NJ
7.	Three-Mile Vicinity Map based on U.S. Geological Survey Maps, 15-minute series, "Poughkeepsie Quadrangle," 1957, revised 1982; "Hyde Park Quadrangle," 1963, revised 1980; "Pleasant Valley Quadrangle," 1957, revised 1981; and "Salt Point Quadrangle, " 1963.	NUS Corp. Edison, NJ NUS Corp. Edison, NJ
8.	Telecon Note: Conversation between F. Andros, Town of Poughkeepsie Water Dept., and P. Morton, NUS Corp., January 26, 1987.	NUS Corp. Edison, NJ
9.	U.S. Fish and Wildlife Service List of Endangered and Threathened Wildlife and Plants, January 9, 1985.	NUS Corp. Edison, NJ
10.	General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.	NUS Corp. Edison, NJ
11.	Telecon Note: Conversation between B. Dibble, Dutchess County Soil Conservation Service, and A. Culmone, NUS Corp., October 21, 1988.	NUS Corp. Edison, NJ
12.	NYSDEC, Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, October 1983.	NUS Corp. Edison, NJ

BIBLIOGRAPHY OF INFORMATION SOURCES

	SOURCE	LOCATION
13.	U.S. EPA Contract Laboratory Program, Versar, Inc., Organics Analyses, and Century Labs, Inc., Inorganics Analyses, Case No. 6889, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on February 26, 1987.	NUS Corp. Edison, NJ
14.	Telecon Note: Conversation between R. Coffey, Hudson River Psychiatric Center, and J. Mayo, NUS Corp., November 6, 1986.	NUS Corp. Edison, NJ
15.	Telecon Note: Conversation between R. Coffey, Hudson River Psychiatric Center, and P. Morton, NUS Corp., March 17, 1987.	NUS Corp. Edison, NJ
16.	Flood Insurance Rate Map for the Town of Poughkeepsie, New York, Panel No. 361142-0005-A, November 15, 1978.	NUS Corp. Edison, NJ
17.	Telecon Note: Conversation between J. Jankiewitz, Town of Lloyd Water Dept., and A. Culmone, NUS Corp., August 17, 1988.	NUS Corp. Edison, NJ
18.	Sax, N.I. and R.J. Lewis, Sr. Hazardous chemicals desk reference. New York: Van Nostrand Reinhold Company Inc., 1987.	NUS Corp. Edison, NJ
19.	Telecon Note: Conversation between F. Andros, PoughKeepsie Water Dept., and A. Culmone, NUS Corp., August 18, 1988.	NUS Corp. Edison, NJ
20.	Telecon Note: Conversation between B. O'Neil, Hyde Park Water Co., and A. Culmone, NUS Corp., August 18, 1988.	NUS Corp. Edison, NJ

SECTION 5

PRESS RELEASE SUMMARY

SUMMARY STATEMENT

The Hudson River Psychiatric Center (HRPC) is located in Poughkeepsie, Dutchess County, New York. The site lies along the northern edge of this urbanized community. The land to the north and east is rural in nature. The western border is the railroad right-of-way along the Hudson River. The facility is owned and operated by the State of New York and occupies approximately 740 acres.

HRPC has six inactive landfill sites that were used between 1950 and 1979 by the Town of Poughkeepsie for municipal waste. HRPC disposed of its institutional wastes on site for approximately 100 years. There are no records of any hazardous wastes ever having been disposed of at any of these sites.

Each of the landfills is located primarily in lowlands with streams running through or along disposal areas 1, 2, 5, and 6. These streams are tributaries of the Hudson River. The Municipality of Poughkeepsie and Town of Lloyd have a surface water intakes nearby in the Hudson for the public water supply. Also, there are a number of nonmunicipal community and private wells in the area.

A site inspection was conducted at the HRPC on February 26, 1987. During the site inspection eight surface water samples were collected with corresponding sediment samples and one leachate sample. Analytical results indicate the presence of a polychlorinated biphenyl (PCB), pesticides, polynuclear aromatic hydrocarbons (PAHs), cadmium, and silver. There is no record of any remedial or enforcement actions being conducted at this site.

SECTION 6

BACKGROUND INFORMATION

REFERENCE NO. 1

NUS CORPORATION

II

0024



HUDSON RIVER PSYCHIATRIC CENTER
TDD# 02-8611-63
PROJECT MANAGER - PETER E MORTON
LOGBOOK 0024 PSM
FEBRUARY 3, 1987

GUIDANCE FOR PROPER USE OF LOG BOOKS

Purpose

- Serves to document onsite activities and be understandable to an outside
- A person not present when field activities were being documented should read

GUIDANCE FOR PROPER USE OF LOG BOOKS

Purpose

- Serves to document onsite activities and be understandable to an outside reader.
- Provides the basis for later written reports.
- Used an an evidentiary document and may be used in legal proceedings.

Distribution

- Controlled by the project manager and distributed as appropriate to personnel designated by the project manager.

General Procedures

- Record information in language which is objective and factual.
- Use ink. Waterproof ink is recommended.
- Leave first two pages blank. They serve as space for the table of contents to be added when the log book is complete.
- The first written page identifies the date, time, TDD number, site name, location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- Start on a new page at the start of each day's field activities. This page should identify date, time, TDD number, site name and location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- List all persons leaving or entering the site.
- Information recorded in the log book should be in chronological order.
- Sign and date each page, log all entries using a 24 hour clock. Entries should be time logged every 15 to 30 minutes.
- Corrections are to be lined through and initialed. No erroneous notes are to be made illegible.
- Include a sketch or map of the site which can be used to locate photo or sample locations. Note landmarks, indicate north, and if possible include an approximate scale. Include as many sketches and maps as necessary.
- A person not present when field activities were being documented should read each completed page, and countersign and date when satisified that the written notes are understandable.

Specific Field Activities To Be Documented

- Record the who, what and where of field activities.
- Indicate sampling and photo locations on a site sketch or map.
- As part of the chain of custody procedure, recorded in-situ sampling information must include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, and any preservative used.
- Information for in-situ measurements must include a sample ID number, the date, time, and personnel taking measurements. Pertinent in-situ measurements include but are not limited to pH, temperature, conductivity, flow measurements, continuous air monitoring measurements, and stack gas analysis. If infield calculations are necessary they must be checked and signed by a second team member.
- Create a photo log to document photos taken in the field. These must include date, time, photographer, sample number, roll number, frame number, photo ID number and description. Indicate if the film is for slides or prints in the column for roll number. Photo ID numbers can be added at the time the photo log is assembled.
- Record onsite health and safety measures used. Describe observed potential hazards to health and safety. Document the level of protection used, decontamination procedure used and specific decontamination solutions.
- When sampling is complete, a summary log is to be completed. It must include date, time, sample number, description, field book reference page, and the number and date of the chain of custody from on which the sample is listed. Indicate whether or not the sample was split.
- Record details regarding relevant information obtained during onsite interviews. Include names of persons interviewed, the interest group represented, their address and phone number.
- Record any other relevant information which would be difficult to generate at a later date.

12-561-63

Table of contents
Hudson River Psychiatric Center

Description	Page
site reconnaissance	3-7
site inspection activities	8-16
Sample Summary	20
Photolog	30

Peter C. Morton 3/2/87 RR 3/3/87

02-8611-63 2-17-87

Hudson River Psychiatric center
Site reconnaissance

NUS Personnel

Peter Morton - Project manager
Ross Dimmick - Site safety officer
Roberta Riccio - Assist, witness observations made

The following NUS ~~personnel~~ personnel have read and understood the copy of the work/safety plan:

Name	Signature
Peter Morton	I wrote it
Ross Dimmick	Ross E Dimmick
Roberta Riccio	Roberta Riccio

1025 Arrive on site meeting with Bill Sleight and John Horton of HRPC
Mr. Horton will take us around site

weather conditions - ~10° F, ~~low~~ 1m brisk breeze from NE, clear, sunny

1045 North edge of area 1 small, iron stained leachate discharging, flowing towards stream - soil sample

Peter Morton 2-17-87 Ross Dimmick 2/17/87

1035 Small stream north of area 1 Looks like 2 SW samples will be possible (one upgrad one down)

1105 Area 2 bounded on the outlying ridge where area of drums is by pile of tree trunks. Snow cover is too great to see any stained soil or leachate. Area below looks like it is probably a wet area in stream in summer time, but it is now covered now. Very small stream to insignificant to obtain sample present - no sampling locations noted here

2 drums noted one empty one upside down - R. Dimmick obtained no readings above background w/ OVA, no sample localities noted

1133 John Horton shows me the location of the other sites and leaves us by area 5.
R Dimmick setting OVA ready, we will look at 5 then return for 3 and 4. Area 6 is now a parking lot
R Ricca has Hilti ready also

1140 heading out to area 5

Pete S. Morton 2/17/87
2-17-87

02-8611-63 2-17-87

PM

1150 At downstream end of small stream cutting area 5 - was standing water in sediment on bank
- small oily patch of stagnant water 4 x 4 inch away
0.5 ~ 1 PPM w/ OVA right on the patch, nothing with HNu. Nothing in breathing zone
- SW, sed sample here
Rushes + cattails cover the site

No readings above background in wet marsh areas 5 upstream

At upstream end of stream 5 temp SW sample with mark to be obtained moving upstream both with big axis - SW, sed sample - upstream sed would look better for sample

1205 At road at far end of 5, heading back to Edmonton

1215 Back at Suburban.
HNu appears to be dead (not responding to exhaust)
2 Recon packing it away

1225 Parked Suburban at parking lot above areas 3+4

1233 Empty metal tank in area (6' x 2' diam)
no readings in tank. Tank, not covered field.
Little of note - No readings on OVA

Peter S. Morton 2-17-87 Robert Ord 2/17/87

02-8611-65 2-17-87

1245 Area 3 - large flat field (old dump, now baseball outfield) and small "valley" with, or with, leachate, if any, would be visible

1303 Back at suburban. No sample locations or anything else of note at either of the areas. No notable sample areas or drainage. ~~of note~~ on

We will proceed now to area 6, the last of the landfills.

1319 At parking lot by area 6

One upgradient sample in area stream just to area 6 (see map on p. 7)
small field stream (too small for water well collect and sample) from north into stream running E-W past area 6

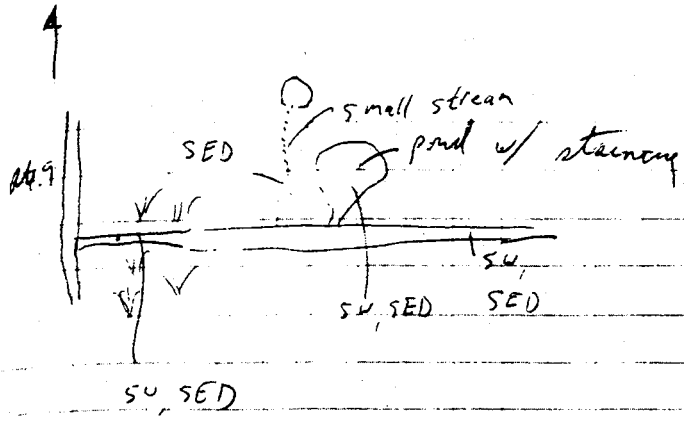
Small pond w/ stained appearance, just east of power vaults - SW SED Sample - Bring Scoop

No readings

(No upgradient SW SED)

Peter Morton 2-17-87 Lou A. Cerbo 2/17/87

02-PGH-63 2-17-87



1356 The area around area 6 is buried w/ snow
There was some staining (iron?) in water and sed
in pond (see map) small stream feeding from North
is too small for water sample, we'll take sed anyway

1359 Leaving site

Peter T. Morton 2-17-87 2/17/87

02-8611-05

2/26/87

Site inspection
Hudson River Psychiatric Center - NYS

NUS Personel

Peter Morton	Project Manager
Gary Bielen	Site Safety officer
Jane Bullis	Sample Management
Roberta Riccio	Sampler
Dan deBruijn	Sampler
John Ducar	Assist where needed, Assist SMO

The following NUS Personel have read and understood aspects of the work/safety plan:

Name	Signature
Gary Bielen	Gary Bielen
Jane Bullis	Jane Bullis
Roberta Riccio	Roberta Riccio
Dan deBruijn	Dan deBruijn
John Ducar	John Ducar

Peter Morton 2/26/87 Roberta Riccio 2/26/87

02-8611-63 2/26/87

weather conditions - sunny, cloudless sky, temp ~ 30°; no wind

0455 Arriving on site, J. Bullis and D. Ducan will set up decon in parking lot by main gate, P. Horton going to meet with Bill Sleight

905 At Bill Sleight's office, & told them we'll be ready to start in about 20 minutes

910 Back at decon (main gate). Decon is set up, R. Riccio and D. de Bruijn are getting suited up (Saranex, Latex boot covers, LBD gloves)

G. Bieler firing up air monitoring instruments

925 G. Bieler giving tailgate safety meeting

935 Camera ready, we will now go back and meet with John Horton

950 Arrive at area 1, really we don't have travels

1010 Back at area 1

Peter Horton 2/26/87

R. Riccio 2/26/87

02-8611-03 2/26/87

1020 D. de B rings on air to distrub leachate soil and take air readings - No readings

SCBA # 30717

R. Ricci got no readings before ground was disturbed

1023 D. de B off air

Photos 1 and 2 of leachate
3 DdB on air w/ HNu, OVA } Photo #1 was overlook looking west over area 1, forgot to note it PR 3/9/87

#4 DdB collecting S-1 on level D. S-1 collected from leachate (appears iron stained) discharging from northern edge of disposal area #1

1039 We're down at stream below area 1, G. Bielen is monitoring air above stream

R. Ricci will collect SW-1, downstream sample below area 1

1044 Photo # 4 PM 5 R Ricci collecting SW-1
No air readings

Lets. porter
2/26/87 PR 2/26/87

New York State
Department of
Environmental Conservation

SHAMINDER P. SINGH
Sanitary Engineer
Bureau of Hazardous Site Control
Division of Solid and Hazardous Waste

21 South Putt Corners Road
New Paltz, NY 12561

(914) 255-5453

02-8611-65 2/26/87

1051 Photo #6 PM R. Ricci collecting Sed 1
No readings

255-5453

SW-1, SED 1 were collected on downstream side of where small stream ~~stream or water~~ PM draining area 1 enter stream flowing north of area 1

1108 We'll collect upgradient sample upstream by north of corrugated steel drainage that stream flows through. ← 2nd C.B. drainage ~~upstream from small feeder stream upstream direction~~ garage parking lot RR. RR

1111 Photo #7 PM
Dd collecting SW-2, SED 2
No readings
on
Photo #8 SED 2

1113 Shaminder Singh } NYDEC arrive on-site
Milton Baanswell }

1130 Back at base with samples
Geologist on site for most part
Samuel Harding

Peter S. Anton RR 2/26/87
2/26/87

02-8611-63 2/26/87

1140 Proctor II in #9 R Riccio decon ing sample bottle

1150 P proctor, R Riccio, L Creisling leave decon to go find rest room facilities

The rest of the crew stays decon ing samples and preparing for next sample collection

1220 ? preparing to leave decon area to collect SW3/Sed3 and SW4/SED4 at area 5

1230 P proctor, G Bieber, R Riccio, D deBruijn, L Creisling at parking area above area 5

D. deBruijn going on air to go down and monitor air

SCBA # 307171

1236 D. deBruijn on-air

1241 DD reports no readings of disturbed sediment at downgradient locale

1242 DD off air

Heading up to truck for sample bottles

Peter Proctor RR 2/26/87
2/26/87

02-8611-63 2/26/87

1249 photo # 9 on
Dd collecting SW-3

The OVA which just went in no longer working

SW-3 was collected 10' upstream from where stream draining area 5 passes through culvert and grate and leaves area

The OVA has been repaired

No readings above background

1310 At upgradient location of area 5, on upstream side of road

Dd will go on air

SCBA # 30717

1316 Dd on air

no readings w/ OVA, HNu

1320 Dd off air

1322 Photo # 10 Dd collecting SW-4, no readings
1324 photo # 11 Dd collecting SED-4, no reading,
No readings on instrument
1335 Finished SW-4, back to decon, DEC people have left site.

Pete Morton
2/26/87 RR 2/26/87

02-861-63 2/26/87

1344 Back at decon with samples SW3/SED3 SW4/SED4

1347 D1 decontaminating samples

1418 Morton & Ricci doing recon for next sample to be collected at area 6

1418 D1 on-site, 307171

No readings above background

1421 D1 off site

1423 Dd collecting SW5, Photo # 12-13 PM — SW5 collected due south of island in HRPC driveway by main gate

1431 Dd collecting SED5, Photo # 13 PM

1445 back at decon w/ samples

1450 going for SW6/SED6 and SW7/SED7

1452 C/A out of gas, weld use HNu

1454 R Ricci collecting SED7, Photo # 14-15 PM — collected from small feeder stream, SW of pic nic shelter, remains of 3 or 4 old drums found resting over bank — photo of hole left after sampling

Plus and redo SED6 PM SW-6

Pete S. Morton RF 2/26/87
2/26/87

1503 DA collecting SW 6 from small pond to the northeast side of pic-nic shelter

1505 Photo # 16 PM, no H2S readings

1508 DA collecting SED 6, Photo # 17 PM

1511 R Ricco collecting SW 7, Photo # 18 PM

1524 No readings on H2S at SW-7 150' upstream from pic-nic shelter

1531 DA collecting SW-8, Photo # 19 PM

1533 DA collecting SED-8, Photo # 20 PM

1540 Used remaining photos (only 2 left, I've neglected to note a couple of uses inadvertently) to photograph pond by SW-6 and collected drums by SW-7 PM

1542 Back at decon all samples are decon'd, S Bailey + T Ducas are finishing up SW, R Ricco DA GB cleaning up site GB packing away SCBA's

Pete S. Morton
2/26/87

RR 2/26/87

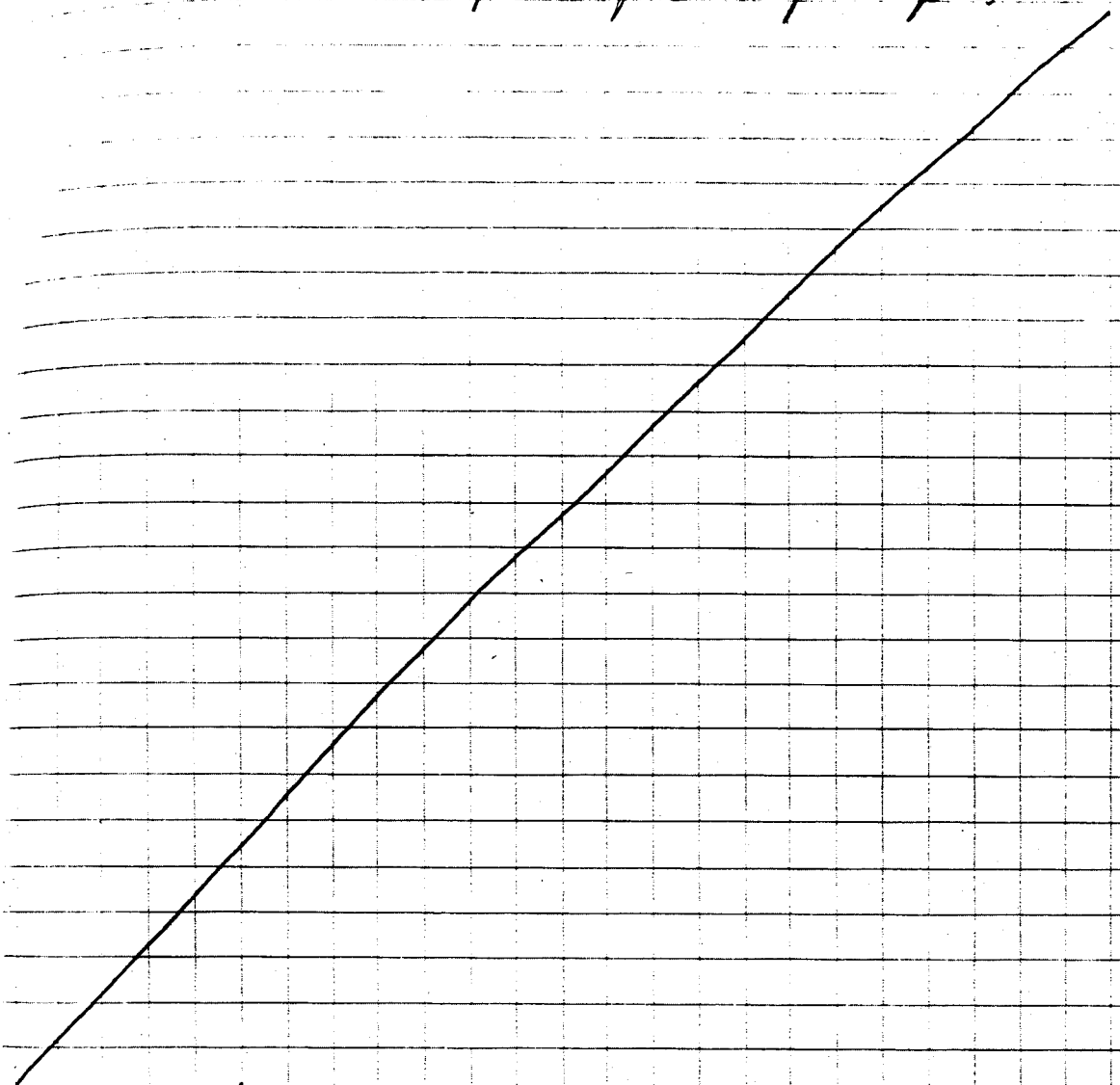
02-8611-63 2/26/87

1555 All samples packed and being transferred to Suburban

1557 - Garbage generated has been bagged and disposed of in HRPC dumpster

1558 - Leaving site for Holiday Inn

1705 - Federal Express picked up samples



Peter S. Morton RR 2/26/87
2/26/87

Sample Summary

Case # 6889

Airbill #	495164935	495164773
NUS Sample #	Organic	Inorganic
SW-1	BI976	MBI475
SW-2	BI977	MBI476
SW-3	BI978	MBI477
SW-4	BI979	MBI478
SW-5	BI920	MBI479
SW-6	BI981	MBI480
SW-7	BI982	MBI481
SW-8	BI983	MBI482
SED-1	BI968	MBI467
SED-2	BI969	MBI468
SED-3	BI970	MBI469
SED-4	BI971	MBI470
SED-5	BI972	MBI471
SED-6	BI973	MBI472
SED-7	BI974	MBI473
SED-8	BI975	MBI474
S-1	BI967	MBI466
Blank	BI984	MBI483

Organics sent to: Versar Inc.
6850 Versar Center
Springfield, VA. 22151
Attn: Charlie Carter

Inorganics sent to: Century Labs Inc.
1501 Grandview Ave.
Thorofare, N.J. 08086
Attn: Ken Bond

Peter Porter 3/2/87

RR 3/3/87

02-

~~Photo #~~ ~~Print #~~

Photo #	Frame Print #	Time	Des
1	1	1023	P.
2	2	1023	P
3	3	1027	Dan
4	4		Dan
5	5	1044	R.
6	6	1051	R.
7	7	1111	D
8	8	1111	D.
9	10	1140	D.
10	11	1249	D.
11	PA ~~12~~ 13	1327	D.
12	PA ~~13~~ 14	1328	D.
13	PA ~~14~~ 15	1423	D.
14	16	1431	D.
15	17	1454	D
16	18	1505	D.
17	PA ~~18~~ 19	1508	D.
18	20	1511	D
19	21	1531	D
20	22	1533	D

02-8611-65 2/26/87

Hudson River Psychiatric Center

~~Print #~~

PHOTOLOG

All photographs taken by Peter Morton, print and slide taken of all shots

Print #	Time #	Description
	1023	Photographs of leachate discharging from northern side of disposal area #1
	1023	
	1027	Dan deBruijn on level B with OVA and HNu by leachate
		Dan deBruijn collecting sample S-1
	1044	R. Riccio collecting sample SW1
	1051	R. Riccio collecting sample SED1
	1111	D. deBruijn collecting sample SW2
	1114	D. deBruijn collecting sample SED2
	1140	R. Riccio decontaminating sample bottles
	1249	D. deBruijn collecting SW3
13	1327	D. deBruijn collecting SW4 ← SED 3 collected by Ocd
14	1328	D. deBruijn collecting SED4
15	1423	D. deBruijn collecting SW5
	1431	D. deBruijn collecting SED5
17	1454	R. Riccio collecting SED7 (placard read ~~SED~~ SW 6) PM
	1505	D. deBruijn collecting SW6 (placard ~~SW-6~~)
19	1508	D. deBruijn collecting SED6 ~~(placard SED6)~~ PM
20	1511	R. Riccio collecting SW7
21	1531	D. deBruijn collecting SW8
22	1533	D. deBruijn collecting SED8

RR 3/3/87 Peter Morton 3/2/87

REFERENCE NO. 2

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

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

United States
Environmental Protection
Agency

1984

Distance	Assigned Value
>150 feet	0
76 to 150 feet	1
21 to 75 feet	2
0 to 20 feet	3

Net precipitation (precipitation minus evaporation) indicates the potential for leachate generation at the facility. Net seasonal rainfall (seasonal rainfall minus seasonal evaporation) data may be used if available. If net precipitation is not measured in the region in which the facility is located, calculate it by subtracting the mean annual lake evaporation for the region (obtained from Figure 4) from the normal annual precipitation for the region (obtained from Figure 5). EPA Regional Offices will have maps for areas outside the continental U.S. Assign a value as follows:

Net Precipitation	Assigned Value
<-10 inches	0
-10 to +5 inches	1
+5 to +15 inches	2
>+15 inches	3

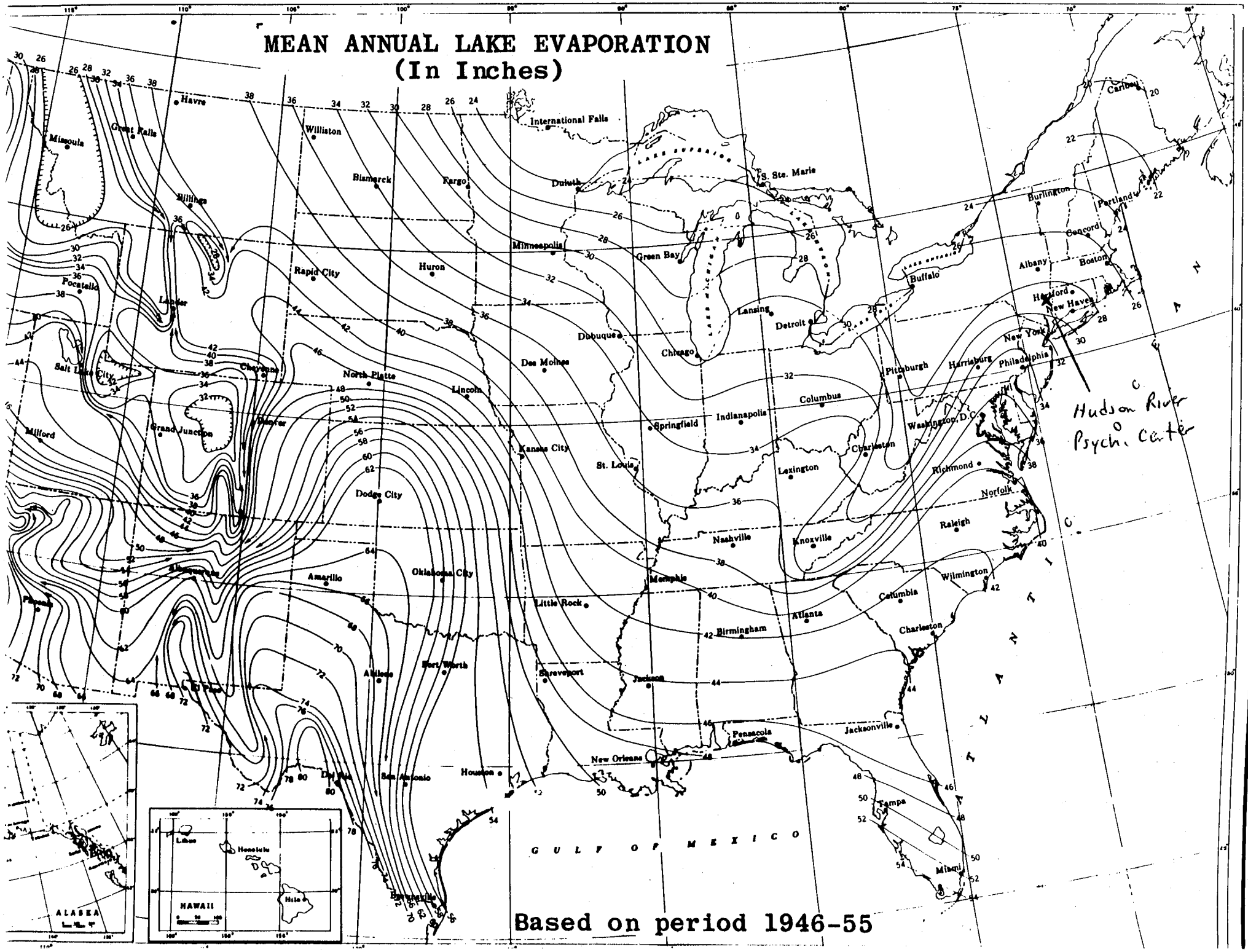
Permeability of unsaturated zone (or intervening geological formations) is an indicator of the speed at which a contaminant could migrate from a facility. Assign a value from Table 2.

Physical state refers to the state of the hazardous substances at the time of disposal, except that gases generated by the hazardous substances in a disposal area should be considered in rating this factor. Each of the hazardous substances being evaluated is assigned a value as follows:

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

Physical State	Assigned Value
Solid, consolidated or stabilized	0
Solid, unconsolidated or unstabilized	1
Powder or fine material	2
Liquid, sludge or gas	3

3.3 Containment

Containment is a measure of the natural or artificial means that have been used to minimize or prevent a contaminant from entering ground water. Examples include liners, leachate collection systems, and sealed containers. In assigning a value to this rating factor (Table 3), consider all ways in which hazardous substances are stored or disposed at the facility. If the facility involves more than one method of storage or disposal, assign the highest from among all applicable values (e.g., if a landfill has a containment value of 1, and, at the same location, a surface impoundment has a value of 2, assign containment a value of 2).

3.4 Waste Characteristics

In determining a waste characteristics score, evaluate the most hazardous substances at the facility that could migrate (i.e., if scored, containment is not equal to zero) to ground water. Take the substance with the highest score as representative of the potential hazard due to waste characteristics. Note that the substance that may have been observed in the release category can differ from the

TABLE 3

CONTAINMENT VALUE FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

	Assigned Value
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3

B. Containers

	Assigned Value
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3

C. Piles

	Assigned Value
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstablized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstablized, and no liner	3

D. Landfill

	Assigned Value
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

substance used in rating waste characteristics. Where the total inventory of substances in a facility is known, only those present in amounts greater than the reportable quantity (see CERCLA Section 102 for definition) may be evaluated.

Toxicity and Persistence have been combined in the matrix below because of their important relationship. To determine the overall value for this combined factor, evaluate each factor individually as discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

	Value for Persistence			
Value for Toxicity	0	1	2	3
0	0	0	0	0
1	3	6	9	12
2	6	9	12	15
3	9	12	15	18

Persistence of each hazardous substance is evaluated on its biodegradability as follows:

Substance	Assigned Value
Easily biodegradable compounds	0
Straight chain hydrocarbons	1
Substituted and other ring compounds	2
Metals, polycyclic compounds and halogenated hydrocarbons	3

more specific information is given in Tables 4 and 5.

Toxicity of each hazardous substance being evaluated is given a value using the rating scheme of Sax (Table 6) or the National Fire Protection Association (NFPA) (Table 7) and the following guidance:

Toxicity	Assigned Value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA level 3 or 4	3

Table 4 presents values for some common compounds.

Hazardous waste quantity includes all hazardous substances at a facility (as received) except that with a containment value of 0. Do not include amounts of contaminated soil or water; in such cases, the amount of contaminating hazardous substance may be estimated.

On occasion, it may be necessary to convert data to a common unit to combine them. In such cases, 1 ton = 1 cubic yard = 4 drums and for the purposes of converting bulk storage, 1 drum = 50 gallons. Assign a value as follows:

Tons/Cubic Yards	No. of Drums	Assigned Value
0	0	0
1-10	1-40	1
11-62	41-250	2
63-125	251-500	3
126-250	501-1000	4
251-625	1001-2500	5
626-1250	2501-5000	6
1251-2500	5001-10,000	7
>2500	>10,000	8

3.5 Targets

Ground water use indicates the nature of the use made of ground water drawn from the aquifer of concern within 3 miles of the hazardous substance, including the geographical extent of the measurable concentration in the aquifer. Assign a value using the following guidance:

Ground Water Use	Assigned Value
Unusable (e.g., extremely saline aquifer, extremely low yield, etc.)	0
Commercial, industrial or irrigation and another water source presently available; not used, but usable	1
Drinking water with municipal water from alternate unthreatened sources presently available (i.e., minimal hookup requirements); or commercial, industrial or irrigation with no other water source presently available	2
Drinking water; no municipal water from alternate unthreatened sources presently available	3

Distance to nearest well and population served have been combined in the matrix below to better reflect the important relationship between the distance of a population from hazardous substances and the size of the population served by ground water that might be contaminated by those substances. To determine the overall value for this combined factor, score each individually as discussed below. Match the individual values assigned with the values in the matrix for the total score.

Value for Population Served	Value for Distance to Nearest Well				
	0	1	2	3	4
0	0	0	0	0	0
1	0	4	6	8	10
2	0	8	12	16	20
3	0	12	18	24	30
4	0	16	24	32	35
5	0	20	30	35	40

Distance to nearest well is measured from the hazardous substance (not the facility boundary) to the nearest well that draws water from the aquifer of concern. If the actual distance to the nearest well is unknown, use the distance between the hazardous substance and the nearest occupied building not served by a public water supply (e.g., a farmhouse). If a discontinuity in the aquifer occurs between the hazardous substance and all wells, give this factor a score of 0, except where it can be shown that the contaminant is likely to migrate beyond the discontinuity. Figure 6 illustrates how the distance should be measured. Assign a value using the following guidance:

Distance	Assigned Value
>3 miles	0
2 to 3 miles	1
1 to 2 miles	2
2001 feet to 1 mile	3
< 2000 feet	4

Population served by ground water is an indicator of the population at risk, which includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses, or trains. If aerial photography is used, and residents are known to use ground water, assume each dwelling unit has 3.8 residents. Where ground water is used for irrigation, convert to population by assuming 1.5 persons per acre of irrigated land. The well or wells of concern must be within three miles of the hazardous substances, including the area of known aquifer contamination, but the "population served" need not be. Likewise, people within three miles who do not use water from the aquifer of concern are not to be counted. Assign a value as follows:

Population	Assigned Value
0	0
1-100	1
101-1,000	2
1,001-3,000	3
3,001-10,000	4
>10,000	5

4.0 SURFACE WATER ROUTE

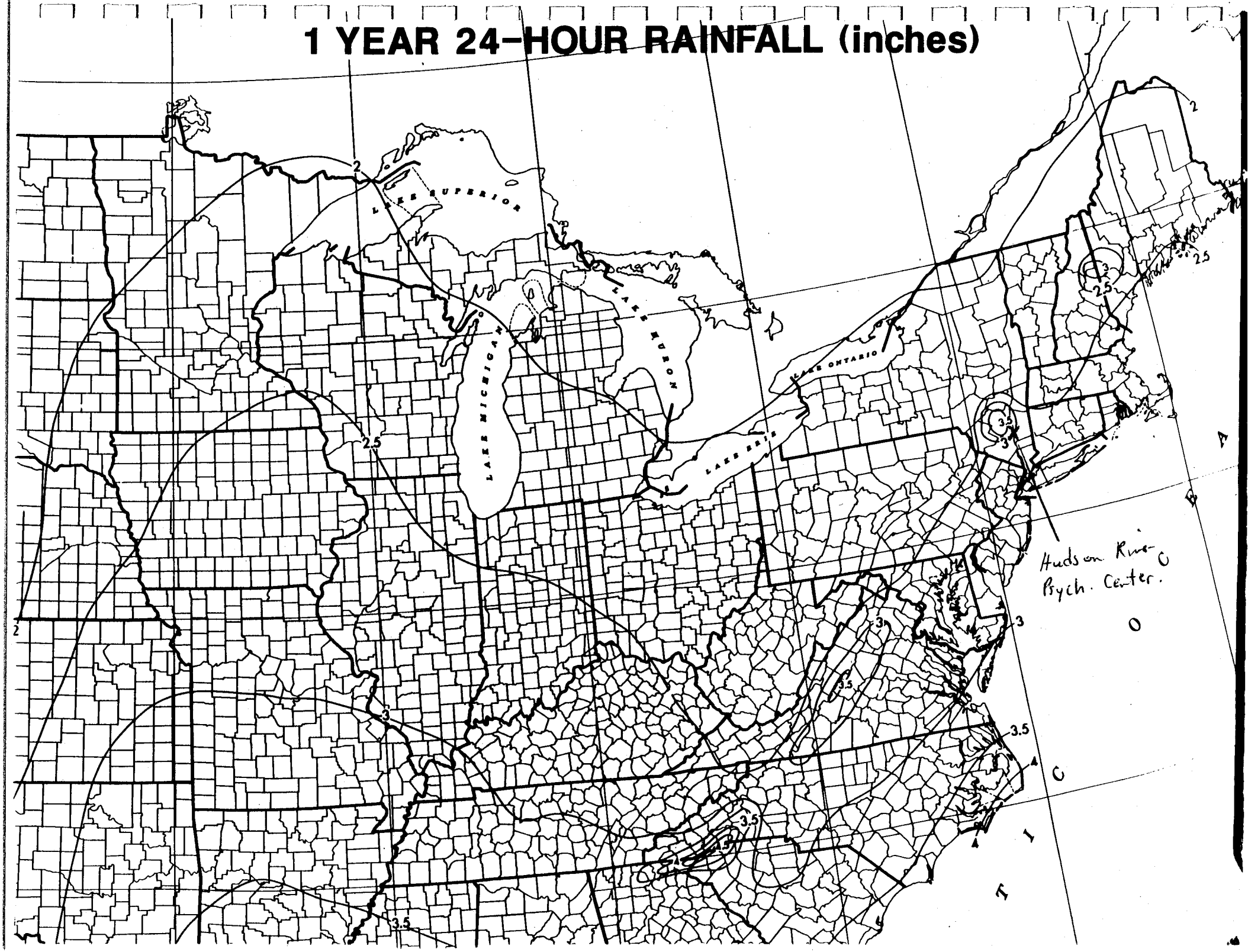
4.1 Observed Release

Direct evidence of release to surface water must be quantitative evidence that the facility is releasing contaminants into surface water. Quantitative evidence could be the measurement of levels of contaminants from a facility in surface water, either at the facility or downhill from it, that represents a significant (in terms of demonstrating that a release has occurred, not in terms of potential effects) increase over background levels. If direct evidence of release has been obtained (regardless of frequency), enter a value of 45 on line 1 of the work sheet (Figure 7) and omit the evaluation of the route characteristics and containment factors. If direct evidence of release is lacking, enter a value of 0 on line 1 and continue with the scoring procedure.

4.2. Route Characteristics

Facility slope and intervening terrain are indicators of the potential for contaminated runoff or spills at a facility to be transported to surface water. The facility slope is an indicator of the potential for runoff or spills to leave the facility. Intervening terrain refers to the average slope of the shortest path which would be followed by runoff between the facility boundary and the nearest downhill surface water. This rating factor can be assessed using topographic maps. Table 8 shows values assigned to various facility conditions.

1 YEAR 24-HOUR RAINFALL (inches)



4.3 Containment

Containment is a measure of the means that have been taken to minimize the likelihood of a contaminant entering surface water either at the facility or beyond the facility boundary. Examples of containment are diversion structures and the use of sealed containers. If more than one type of containment is used at a facility, evaluate each separately (Table 9) and assign the highest score.

4.4 Waste Characteristics

Evaluate waste characteristics for the surface water route with the procedures described in Section 3.4 for the ground water route.

4.5 Targets

Surface water use brings into the rating process the use being made of surface water downstream from the facility. The use or uses of interest are those associated with water taken from surface waters within a distance of three miles from the location of the hazardous substance. Assign a value as follows:

Surface Water Use (Fresh or Salt Water)	Assigned Value
Not currently used	0
Commercial or industrial	1
Irrigation, economically important resources (e.g., shellfish), commercial food preparation, or recreation (e.g., fishing, boating, swimming)	2
Drinking Water	3

Distance to a sensitive environment refers to the distance from the hazardous substance (not the facility boundary) to an area containing an important biological resource or to a fragile natural setting that could suffer an especially severe impact from pollution. Table 10 provides guidance on assigning a value to this rating factor.

Population served by surface water with water intake within 3 miles downstream from facility (or 1 mile in static surface water such as a lake) is a rough indicator of the potential hazard exposure of the nearby population served by potentially contaminated surface water. Measure the distance from the probable point of entry to surface water following the surface water flow (stream miles). The population includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses and trains. The distance is measured from the hazardous substance, including observations in stream or sediment samples, regardless of facility boundaries. Where only residential houses can be counted (e.g., from an aerial photograph), and residents are known to be using surface water, assume 3.8 individuals per dwelling unit. Where surface water is used for irrigation, convert to population by assuming 1.5 persons per acre of land irrigated. Assign a value as follows:

Distance to Surface Water

Population	>3 miles	2-3 miles	1-2 miles	2001 feet to 1 mile	0-2000 feet
0	0	0	0	0	0
1-100	0	4	6	8	10
101-1000	0	8	12	16	20
1001-3000	0	12	18	24	30
3001-10,000	0	16	24	32	35
>10,000	0	20	30	35	40

8.0 DIRECT CONTACT

The direct contact hazard mode refers to the potential for injury by direct contact with hazardous substances at the facility.

8.1 Observed Incident

If there is a confirmed instance in which contact with hazardous substances at a facility has caused injury, illness, or death to humans or domestic or wild animals, enter a value of 45 on line 1 of the work sheet (Figure 12) and proceed to line 4 (toxicity). Document the incident giving the date, location and pertinent details. If no such instance is known, enter "0" on line 1 and proceed to line 2.

8.2 Accessibility

Accessibility to hazardous substance refers to the measures taken to limit access by humans or animals to hazardous substances. Assign a value using the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0
or	
an artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	

Barrier (continued)	Assigned Value
Security guard, but no barrier	1
A barrier, but no separate means to control entry	2
Barriers do not completely surround the facility	3

8.3 Containment

Containment indicates whether the hazardous substance itself is accessible to direct contact. For example, if the hazardous substance at the facility is in surface impoundments, containers (sealed or unsealed), piles, tanks, or landfills with a cover depth of less than 2 feet, or has been spilled on the ground or other surfaces easily contacted (e.g., the bottom of shallow pond or creek), assign this rating factor a value of 15. Otherwise, assign a value of 0.

8.4 Waste Characteristics

Toxicity. Assign a value as in Section 3.4.

8.5 Targets

Population within one-mile radius is a rough indicator of the population that could be involved in direct contact incidents at an uncontrolled facility. Assign a value as follows:

Population	Assigned Value
0	0
1 - 100	1
101 - 1,000	2
1,001 - 3,000	3
3,001 - 10,000	4
>10,000	5

REFERENCE NO. 3

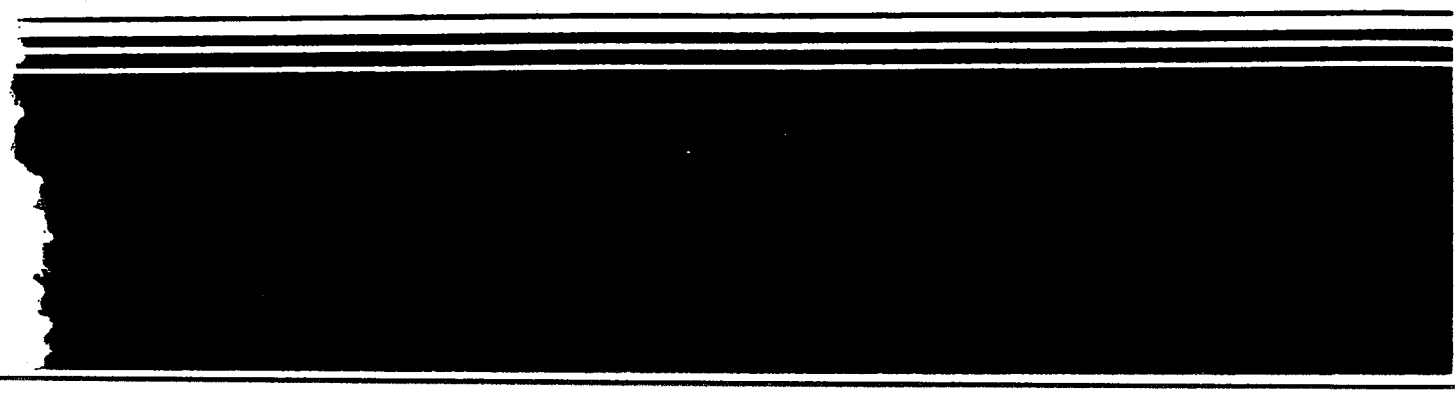
Environmental Protection Agency
Remedial Response
Washington, DC 20460
July, 1981

EPA

Potential Hazardous Waste Site

Preliminary Assessment

Hudson River Psychiatric Center



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

EPA

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

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Hudson River Psychiatric Center	North Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Poughkeepsie	NY	12602	Dutchess		
09 COORDINATES LATITUDE: 41° 43' 25"	LONGITUDE: 73° 55' 40"				

10 DIRECTIONS TO SITE (Starting from nearest public road):
Follow Route 9 north from Poughkeepsie, NY. The facility entrance is 3/4 mile north of the city limits.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
State of New York Hudson River Psychiatric Center	North Road			
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
Poughkeepsie	NY	12602	(914) 452-8000	
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 1/15/85 (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): EA Science and Technology

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

03 YEARS OF OPERATION
1950 (BEGINNING YEAR) | 1979 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Municipal refuse from the City of Poughkeepsie, institutional waste from the Hudson River Psychiatric Center.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Leachate seepage observed to surface waters. Possible groundwater impacts.

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
R. Kapp	EA Science & Technology		(914) 692-6706
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
G. McCleary		EA	(301) 771-4950	6/14/85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NEW

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A SOLID
- [ ] B POWDER FINES
- [ ] C SLUDGE
- [ ] E SLURRY
- [ ] F LIQUID
- [ ] G GAS
- [ ] D OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

TONS: unknown

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
- [X] M NOT APPLICABLE

III. WASTE TYPE Unknown

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

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

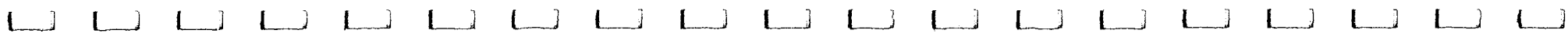
01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	None		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

EA Site Inspection, 15 January 1985.
NYSDEC Files.
Dutches County Department of Health Files.



Site Coordinates: Latitude - 41°43'25"; Longitude - 73°55'40"

HUDSON RIVER PSYCHIATRIC CENTER

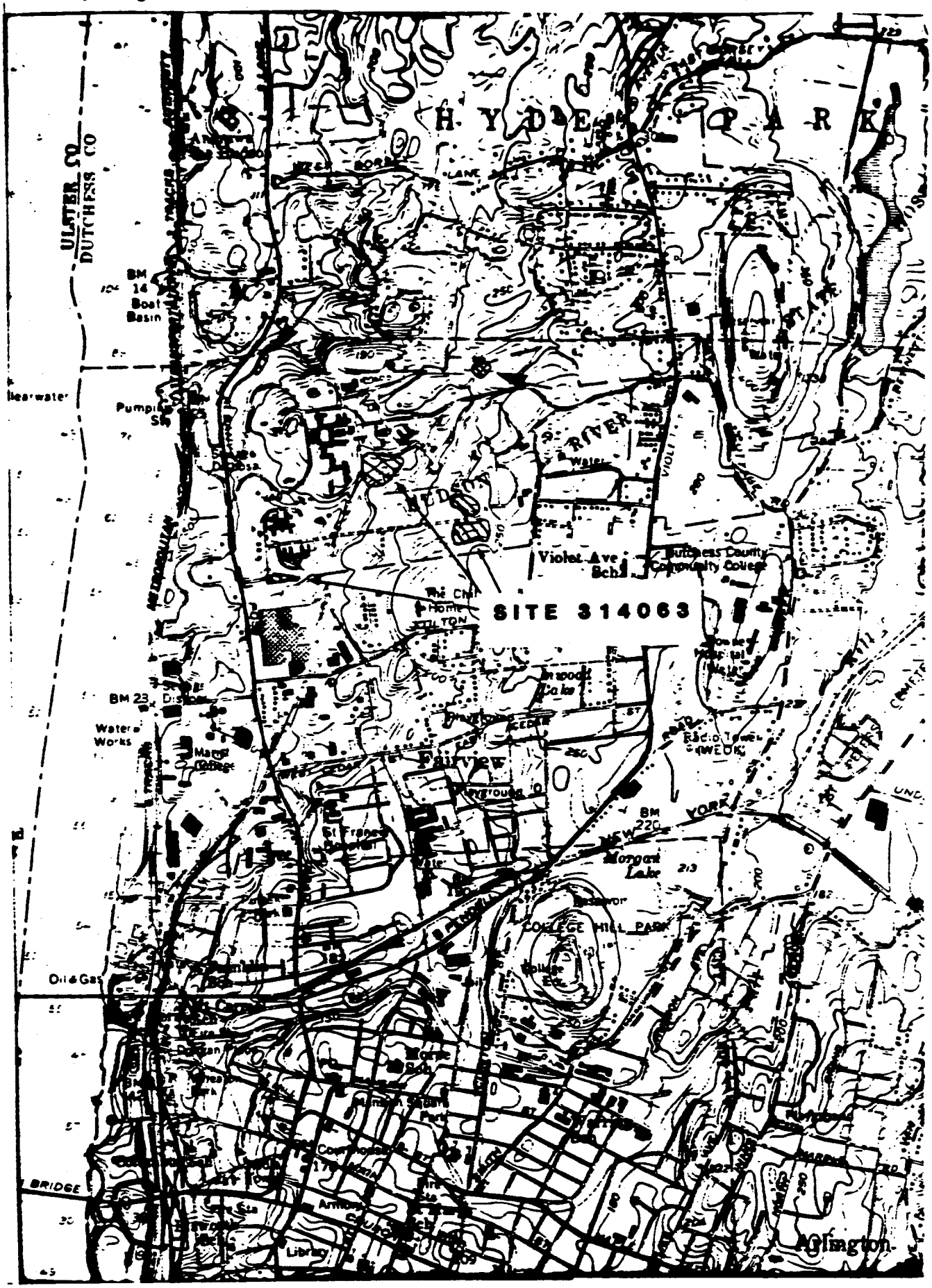


Figure 1-1. POUGHKEEPSIE QUAD

1. EXECUTIVE SUMMARY

The Hudson River Psychiatric Center (HRPC) (New York I.D. No. 314063 EPA No. New) located on Route 9 north of the City of Poughkeepsie, New York, is the site of six small and inactive municipal and institutional landfills (Figure 1-1, Plate 1-1). The landfilling sites are located throughout the 700+ acres of the HRPC in Dutchess County.

Landfilling municipal wastes by the City of Poughkeepsie and the Town of Poughkeepsie began in the 1950s and continued until 1979. The HRPC landfilled institutional wastes on site until 1973 or 1974, for a period of 100 years. The landfills were created in topographic low areas such as streams and wetlands. This practice resulted in seepage and contamination problems at several of the fill areas. In particular, the majority of problems have been documented at Landfill No. 5 where a drainage pipe for the stream has been constructed within the fill material.

The Hazard Ranking System Score for HRPC has been developed using the largest score for each of the six areas. The preliminary HRS scores for this site are as follows: Migration Score (S_M) = 0 Direct Contact Score (S_{DC}) = 0. The low Migration Score is attributable to a lack of information on waste types and quantities. There is no data available in the surface water or ground water near the six landfill areas. Surface water and/or ground-water contamination

is probable at four of the landfill locations. Although leachate seeps were not observed at two of the six areas, ground-water and/or surface water contamination potential exists. Bedrock outcrops were observed at the site. With confirmed releases to ground water and surface water, the maximum S_M attainable for this site is 52.79.

The recommendations for a Phase II investigation includes investigating ground-water contamination at all the sites and surface water contamination at four of the sites where seeps from the landfill have been observed or where surface water discharges through the area landfilled. The proposed Phase II study includes the collection and analysis of 11 ground-water samples, 6 surface water samples, 1 leachate sample, and 7 sediment samples. The estimated cost to complete the Phase II investigation at the HRPC site is 140,125.

3. SCOPE OF WORK

The Phase I investigation of the Hudson River Psychiatric Center site involved a site inspection by EA Science and Technology, as well as record searches and interviews. The following agencies or individuals were contacted:

Contact	Information Received
Mr. Paul Fadden Business Administrator Hudson River Pyschiatric Center North Road Poughkeepsie, New York 12602 (914) 452-8000	Site history
Mr. Vladimir Bukovac Assistant Business Administrator Hudson River Psychiatric Center North Road Poughkeepsie, New York 12602 (914) 452-8000	Site history
Mr. Cliff Benward Hudson River Psychiatric Center North Road Poughkeepsie, New York 12602 (914) 452-8000	Locations of disposal areas
Mr. William Sullivan, P.E. Senior Sanitary Engineer New York State Department of Environmental Conservation 21 South Putt Corners Road New Paltz, New York 12561 (914) 255-5453	In-place toxics file
Mr. Jack Hill Director of Environmental Health Dutchess County Health Department County Office Building 22 Market Place Poughkeepsie, New York 12601 (914) 431-2044	Site file

Contact	Information Received
Mr. Louis A. Evans, Atty. New York State Department of Environmental Conservation 202 Mamaroneck Avenue White Plains, New York 10601-5381	No file
Mr. Charlie Shaw Dutchess County Environmental Management Council Route 44 Millbrook, New York 12545 (914) 677-3488	Site file
Mr. Marsden Chen, P.E. New York State Department of Environmental Conservation Bureau of Site Control 50 Wolf Road Albany, New York 12233-0001 (518) 457-0639	No file
Mr. Kevin Walter, Atty. New York State Department of Environmental Conservation Division of Hazardous Waste Enforcement 50 Wolf Road Albany, New York 12233-0001 (518) 457-5637	No file
Mr. John Iannotti, P.E. New York State Department of Environmental Conservation Bureau of Remedial Action 50 Wolf Road Albany, New York 12233-0001 (518) 457-5637	No file
Mr. Earl Barcomb New York State Department of Environmental Conservation Landfill Operations Vatrano Road Albany, New York 12205 (518) 457-2051	No file

Contact	Information Received
Mr. Peter Skinner, Atty. New York State Attorney General's Office Room 221 Justice Building Albany, New York 12224 (518) 474-2432	No file
Mr. Ron Tramontano/Mr. Charlie Hudson Bureau of Toxic Substance Assessment New York State Department of Health Tower Building 84 Holland Avenue Albany, New York 12237 (518) 473-8427	No file
Mr. Jim Covey New York State Department of Environmental Conservation Tower Building 84 Holland Avenue Albany, New York 12237 (518) 473-4637	Community Water Supply Atlas
Mr. Alvin Reilley New York State Department of Health Regional Director of PH Engineering 145 Huguenot Street Fifth Floor New Rochelle, New York 10801 (914) 632-4133	No file
Mr. Perry Katz U.S. Environmental Protection Agency Region II Room 757 26 Federal Plaza New York, New York 10278 (212) 264-4595	No file
Ms. Diana Messina U.S. Environmental Protection Agency Region II Surveillance and Monitoring Branch Woodbridge Avenue Edison, New Jersey 08837 (201) 321-6776	No file

4. SITE ASSESSMENT

4.1 SITE HISTORY

The Hudson River Psychiatric Center (HRPC), located on Route 9 in Poughkeepsie, New York, is the site of six small and inactive landfills which were used for municipal and institutional garbage (Appendix A1.1-1). The generators which disposed at the site were the City and Town of Poughkeepsie (municipal garbage) and HRPC (institutional wastes). The types and quantities of wastes are somewhat undefined but, in general, the wastes are expected to include household refuse, municipal trash and garbage, refrigerators, stoves, etc. The HRPC operated their own landfill on site until 1973 or 1974, for a period of approximately 100 years. One section (referred to as Area 2 on Figure 1-1) was used solely by the HRPC, while the remaining five areas were also used by the City or Town of Poughkeepsie (Appendixes A1.1-2 through A1.1-4). The City and/or Town of Poughkeepsie apparently used the HRPC sites between the 1950s and 1979 (Appendix A1.1-1). Site operational practices generally included appropriate daily soil cover (Appendixes A1.1-2 through A1.1-4). Any monitoring that took place is expected to have been limited at best, and no monitoring wells were installed. According to the Dutchess County Department of Health (DCDOH), there is no documentation available to suggest that toxic or hazardous wastes were ever deposited at this site. During the 1960s, complaints were issued by neighbors of the HRPC and by the DCDOH regarding the unsightly and unsanitary conditions at these landfills, and attempts were made by the DCDOH to improve operating conditions and/or to close the landfills (Appendixes A1.1-5 through A1.1-13). The areas were generally low and wet with visible springs or small streams. Leachate from the garbage began to color

standing water a brilliant red, and the organic muds in these low areas became extremely odorous. Many other problems with litter, lack of daily cover and compaction, and related operational deficiencies led to the closing of the landfills sometime during the mid- and late 1970s. Leachate and ponding problems occurred at both Landfill No. 5 and Landfill No. 6. Remedial actions for the problems at Area 5 included excavating and installing new concrete drainage pipe in the fill (Appendixes A1.1-2 through A1.1-4). Excavation was completed to an approximate depth of 25 feet. Clean fill and cover material were trucked in.

4.2 SITE TOPOGRAPHY

The HRPC site is located in Poughkeepsie, New York, and is composed of six separate landfill areas. Examination of a 1980 aerial photograph (Plate 1-1) indicates that a seventh area may be related to Area 5. This seventh area was not visited during EA's site inspection. The topography of each of the six areas visited by EA is described separately in each of the following sections.

Area 1, 14-5a

Disposal Area 1 is presently a golf course for the HRPC residents. The disposal area is located 100 feet northwest of the administrative offices for the HRPC. The area occupies approximately 2-3 acres and is located adjacent to a steep embankment to an unnamed tributary to the Hudson River. A stone fence is located on the northwest boundary of the site and is assumed to indicate the extent of landfilling. The area is grass covered and gently sloping, with

2-10 percent slopes on the top of the fill. The slope from the landfill perimeter to the surface water on the northwest side of the landfill is approximately 40 percent. The nearest residence to Area 1 is on the north side of the tributary, approximately 500 feet from the disposal area.

Area 2, 14-5b

The 2- to 3-acre landfill is at the termination point of an old railroad spur. It is located on the northeast side of the HRPC facility. The area is remote but accessible, since there is no fence restricting access. The landfill is gently sloping, approximately 8 percent slope to the creek which flows through the site.

Area 3, 14-5c

The landfill is located in the southeast corner of the HRPC facility, on the north side of the access road (Area 4 is located on the south side of the access road). The landfill occupies approximately 3 acres and includes a ball field. The prevailing site slope is approximately 5 percent and the area west of the ball field is relatively well vegetated with no apparent land use.

Area 4, 14-5d

Across the road from Area 3 is Area 4 which consists of 5 acres with an average slope of 6 percent. An underground, slate-lined drainage ditch passes through the site. It is unknown where this drain discharges. Bedrock outcrops are

present in the middle of the site. The extent of the landfilling is not discernible from topographic features. The area delineation previously defined by the DCDOH is assumed to be the extent of the landfill.

Area 5, 14-5e

The 3-acre disposal area is located in a wetland in the center of the HRPC. A stream which originally discharged through the area was covered during the landfilling at the site. As a result of this practice, significant ponding occurred, and it was necessary to construct a drainage system within the fill material. Access to the area is facilitated by a road which runs north of the area. The area is vegetated with grass and brush.

Area 6, 14-5f

This area borders a stream (discharging from Areas 2 and 5) which discharges to the Hudson River 2,000 feet downgradient from the site. There are evident seeps from the fill discharging to the stream. Red leachate and stained soil is evident on the banks. The slope from the top of the fill area to the stream is approximately 40 percent. The fill area is paved on the northwest part of the area. A pavillion is present in the middle of the area. Since it has been in place during the period of landfilling, it is assumed landfilling occurred around the building. An HRPC building is approximately 200 feet from the site.

4.3 SITE HYDROGEOLOGY

The surficial geology varies across the site and includes four general categories: silt and clay lacustrine deposits in the northwestern portion of the site, sand and gravel outwash deposits of glacial origin in the western and central portion, more than 3 feet of glacial till in the southeastern portion, and less than 3 feet of glacial till or exposed bedrock in the northeastern portion (Appendix A1.3-1). The regional surficial deposits are generally glacial till with occasional sand and gravel deposits of very limited areal extent.

The bedrock underlying the glacial sediment throughout most of the site is predominatly graywacke and shale of the Ordovician Age Austin Glen Formation. The eastern edge of the site is underlain by the western edge of a thrust sheet which is comprised of shale, argillite, and chert of the Ordovician Age Mt. Merino/ Indian River and Stuyvesant Falls Formations.

Based upon the available literature, the bedrock is designated as the aquifer of concern (Aquifer Nos. 1, 2, and 25 by Gerber as shown in Appendix A1.3-2). The aquifer of concern is bounded on the west by the Hudson River. This aquifer has been developed by wells as the public water supply for several residential subdivisions located north of the site. The reported depth to ground water varies from 7 feet below ground surface at Well Du 469 located about 2,000 feet southeast of Area 6, to 41 feet below ground surface at Well Du 757 located about 1,200 feet southeast of Area 6 (Simmons et al. 1961). The glacial sand and gravel deposit contiguous with the HRPC property and the glacial till have not been developed as a source of public water supply.

Based upon the available data, hydraulic connection between the glacial sediments and the bedrock aquifer of concern cannot be confirmed at the site. However, such a connection is possible, particularly in Area 4 (the southwestern portion of the property) where bedrock was observed to be exposed at ground surface, in the northwestern portion of the property where bedrock is reportedly overlain by less than 3 feet of glacial till (exposed at surface), and in the west where bedrock is reportedly overlain by unconsolidated sand and gravel.

Both the City of Poughkeepsie and the HRPC obtain their water from intakes along the Hudson River. However, each of these two intakes is immediately down river from the confluence of one of the two streams which drain the HRPC property. Most of the residential and commercial area surrounding the site is served by the City of Poughkeepsie water plant. There are some private homes that have not been connected to the City water system.

The data in this section is based upon:

1. Gerber, R.G. 1982. Final Report, Water Resources Study for Dutchess County: Hyde Park, Poughkeepsie, Pleasant Valley and Salt Point Quads with Surficial and Bedrock Aquifer Delineations.

2. Simmons, E.T. et al. 1961. Ground-Water Resource of Dutchess County, New York: Well Logs.

3. New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

4.4 SITE CONTAMINATION

Waste Types and Quantities

The type and quantities of wastes disposed of the HRPC landfills are somewhat unknown. The areas have been used by HRPC for institutional waste disposal for 100 years. An incinerator existed on site for the destruction of pathogenic and pharmaceutical wastes. Incinerator ash was disposed in an area separate from the sites in question. Other institutional wastes were disposed in the landfills identified. Area 2 was used by HRPC exclusively but the remaining five areas were also used by the City or the Town of Poughkeepsie. Therefore, there is a mixture of institutional wastes and municipal wastes in most of the areas.

In three of the areas, there is noticeable leachate flowing from the disposal areas to surface waters. No soil or water sample analyses are available to characterize the extent and nature of the observed leachate problems.

Ground Water

No data available.

Surface Water

No data available.

Soil

No data available.

Air

No data available.

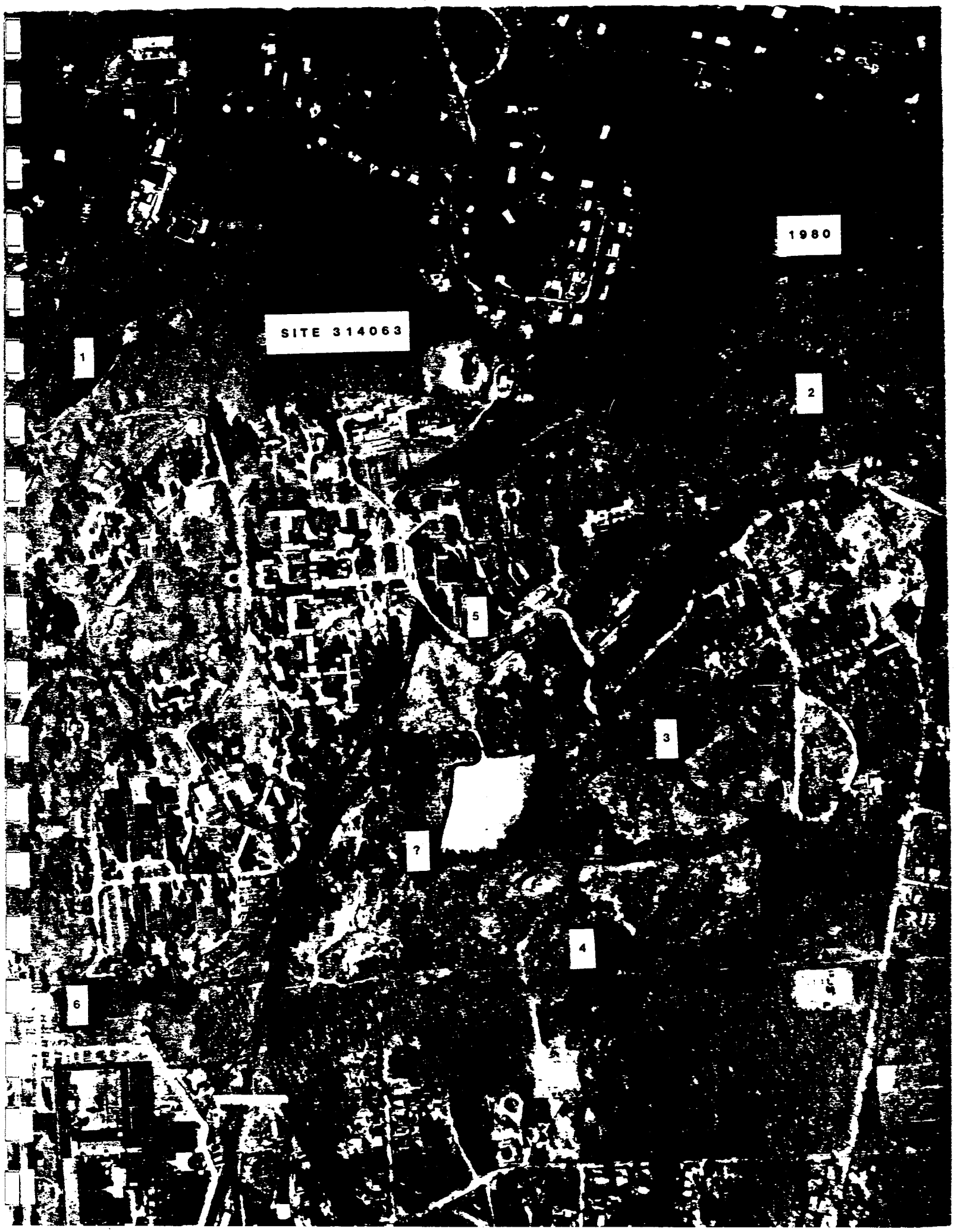
HUDSON RIVER PSYCHIATRIC CENTER
TOWN OF POUGHKEEPSIE, DUTCHESS COUNTY

The Hudson River Psychiatric Center (HRPC), located on Route 9 in Poughkeepsie, New York, is the site of six small inactive landfills. The HRPC landfilled institutional wastes on site until 1973 or 1974, for a period of 100 years. The City and the Town of Poughkeepsie apparently used the small landfill areas for municipal wastes beginning in the 1950s and continuing until 1979. The six designated disposal sites range from 2 to 5 acres and are located throughout the 700+ acres of the HRPC of Dutchess County.

The landfills were created in topographic low areas such as streams and wetlands. As a result, heavy leachate seepage into an unnamed tributary to the Hudson River is occurring in at least two of the six landfills. A drainage system was constructed within one of the landfills to alleviate the problem.

The volume and characteristics of hazardous waste disposed at the site are unknown. Although the aquifer of concern is tapped by several wells to the north of the site and the HRPC and the City of Poughkeepsie obtain their water from intakes along the Hudson River, no data on ground water or surface water are available at this time. An estimated population of 1,889 is served by ground water in the aquifer of concern, within a 3-mile radius of the site. The population served by the surface water intakes from the Hudson River is estimated to be 32,000.

Plate 1-1. Aerial photograph (1980) of the Hudson River Psychiatric Center, with apparent extent of landfill areas outlined.


1980
SITE 314063
1
2
3
4
5
6
7

6. ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

6.1 ADEQUACY OF EXISTING DATA

There is no data available on the surface water or ground water near the six landfill sites at the Hudson River Psychiatric Center. Leachate has been observed discharging from several of the landfill areas. Historically, there has been drainage problems through fill Area 5. A pipe has been installed in the fill to facilitate surface water discharge through the fill. Areas 2, 4, 5, and 6 are landfills in wetlands and/or streams. These areas should require more data/further investigation to adequately score the site.

6.2 RECOMMENDATIONS

Surface water and/or ground-water contamination is probable at four of the landfill locations. Although leachate seeps were not observed at two of the six sites, ground-water, and/or surface water contamination potential exists. Bedrock outcrops were observed at one site. The recommendations for a Phase II investigation includes investigating ground-water contamination at all the sites and surface water contamination at four of the sites where seeps from the landfill have been observed or where surface water discharges through the area landfilled.

6.3 PHASE II WORK PLAN

6.3.1 Task 1 - Mobilization and Site Reconnaissance

Project mobilization includes review of the Phase I report and updating the site data base with any new information made available since completion of the Phase I report. Based on that review, a draft scope of work for this site will be agreed to and a project schedule developed. At this time, a draft Quality Assurance/Quality Control (QA/QC) document will be prepared in accordance with the most up-to-date NYSDEC guidelines.

Site reconnaissance will be performed to examine general site access for Phase II studies. Site reconnaissance will familiarize key project personnel with the site, enable the project geologists to evaluate potential boring/well locations, and enable the project Health and Safety Officer to develop specific health and safety requirements for the field activities. Emergency, fire, and hospital services will be identified. Standard practice during site reconnaissance is an air survey with a HNU photoionization detector (HNU). The air survey would be performed around the site perimeter and throughout the site for safety purposes. Detection of releases to air during site reconnaissance may warrant further confirmation studies. Based on the Phase I study, it is expected that field activities will require only Level D health and safety protective measures.

6.3.2 Task 2 - Geophysics

Multidepth EM and earth resistivity surveying will be performed around the perimeter of the six site areas to evaluate the potential presence of ground-water contaminant plumes and stratigraphic conditions. The number of stations and value of depth settings will be determined on the basis of field conditions. Results of the geophysics will be used to refine the specifications for locations, depths, and number of observation wells to be installed.

6.3.3 Task 3 - Preparation of Final Sampling Plan

All data collected during Tasks 1 and 2 will be evaluated to finalize sampling and boring/well locations. The final sampling plan will be developed and submitted to NYSDEC for approval. The plan will include final sampling locations, boring and well specifications, and reference pertinent portions of the QA/QC Plan. A final budget will be developed to complete the drilling and sampling program.

6.3.4 Task 4 - Test Borings and Observations Wells

Based upon currently available information, EA recommends the installation of 11 borings/observation wells. This work would be performed under the fulltime supervision of a geologist. It is anticipated that the following drilling methods will be used: (1) hollow-stem auger in the unconsolidated sediments, and (2) air or water rotary in bedrock. Prior to the drilling of

each boring/well, and at the completion of the last boring/well, the drilling equipment which comes in contact with subsurface materials will be steam-cleaned, as well as the split spoon sampler after obtaining each sample. Soil sampling will be performed using a split spoon sampler at approximately 5-ft intervals and at detected major stratigraphic changes. An HNU would be used to monitor the potential organic vapors emitted during drilling operations and from each soil sample. Samples of major soil/unconsolidated sediment units will be collected for grain-size analysis.

It is anticipated that the wells to be installed at this site will be completed in bedrock, approximately 10-15 feet below the ground-water table. Standard construction of such a well would include 10 feet of 4-in. diameter threaded-joint PVC screen and an appropriate length of PVC riser with a bottom plug cap, sand pack, bentonite seal, and protective surficial steel casing with a locking cap.

Upon completion and development of the wells by air surging/pumping, the vertical elevation of the upper rim of each well casing will be surveyed in order to aid in evaluation of the ground-water flow direction. Depending upon the yield of each Phase II well, a short-term, low-yield pumping test will be performed in each well.

For cost estimating purposes, it is assumed that:

a. The depth of each of the 11 wells will average 25 feet below ground surface.

b. The 11 wells will require 20 days to install, develop, and test.

c. All drill sites are accessible by truck-mounted drilling rigs as determined by the driller.

d. There are no excessive amounts of cobbles/boulders which would increase drilling time.

e. Steam-cleaning of drilling/sampling equipment will be performed at each boring/well location. The fluids will be discharged to ground surface.

f. All drill cuttings, fluids, and development water will be left on, or discharged to, the ground surface in the immediate area of the activity.

g. That permission from appropriate land owners to drill borings/wells on their property will be a simple process (expedited by the NYSDEC, if necessary) so that delays during field operations are not incurred.

6.3.5 Task 5 - Sampling

All sampling and analysis will be conducted in accordance with the project QA/QC Plan. The analytical program for every water and sediment sample will include the 130 organic and 25 inorganic parameters listed in Statement of Work No. 784, New York State Department of Environmental Conservation Superfund and Contract Laboratory Protocol, January 1985. Also, all additional non-priority pollutant GC/MS major peaks will be identified and quantified. Major peaks

will be considered as those whose area is 10 percent or greater than the calibrating standard(s). Based upon the currently available information, collection and analysis of the following numbers and types of samples is recommended:

11 Ground-water samples (one from each Phase II well).

6 Surface water samples.

1 Leachate sample from Area 6.

7 Sediment samples (one from each surface water and leachate sample location).

6.3.6 Task 6 - Contamination Assessment

EA will evaluate the data obtained during the records search and field investigation: prepare final HRS scores and documentation forms; complete EPA Form 2070-13 and Part One of 2070-12 and summarize site history, site characteristics, available sampling and analysis data; and determine the adequacy of the existing data to confirm release, and if there is a population at risk.

6.3.7 Task 7 - Remedial Cost Estimate

EA will evaluate remedial alternatives for the site and develop a list of potential options given the information available on the nature and extent of contamination. Approximate costs estimates for the selected potential remedial options will be computed. This work is not intended to be, or a substitute for, a formal cost effectiveness analysis of potential remedial actions.

6.3.8 Task 8 - Final Phase II Report

In accordance with current (January 1985) NYSDEC guidelines, the Phase II report will include:

a. The results of the Phase II investigation, complete with boring logs, photos, and sketches developed as part of the Phase II field work.

b. Final HRS scores with detailed documentation.

c. Selected potential remedial alternatives and associated cost estimates.

In addition to the final Phase II report, the following raw data and resulting reduction would be provided to NYSDEC:

a. geophysical
b. well logs
c. all sampling forms and data
d. all analytical data

e. chain-of-custody forms

f. soil sampling forms and classifications

g. other collected information.

6.3.9 Task 9 - Project Management/Quality Assurance

A Project Manager will be responsible for the supervision, direction, and review of the project activities on a day-to-day basis. A Quality Assurance Officer will ensure that the QA/QC Program protocols are maintained and that the resultant analytical data are accurate.

6.4 PHASE II COST ESTIMATE

Based on the scope of work and assumptions described above, the estimated costs to complete the Phase II investigation of the Hudson River Psychiatric Center site are as follows:

Consultant Costs (including labor, direct costs, fee)	$ 57,385
Drilling Contractor	32,740
Laboratory	50,000
Total	$140,125

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: Hudson River Psychiatric Center

LOCATION: Poughkeepsie, Dutchess County, New York

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No observed release. Assigned value = 0.

Rationale for attributing the contaminants to the facility:

Not applicable.

***

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Based on the available literature, the bedrock is designated as the aquifer of concern. The bedrock underlying the glacial sediment is predominantly graywacke and shale of the Ordovician Age Austin Glen Formation. The eastern edge of the site is underlain by the western edge of a thrust sheet comprised of shale, argillite, and chert of the Ordovician Age Mt. Merino/Indian River and Stuyvesant Falls Formation. The aquifer of concern is bounded on the west by the Hudson River and the aquifer has been developed by wells as public water supply for residential developments north of the site.

References:

1. Gerber, R.G. 1982. Final Report Water Resources Study for Dutchess County: Hyde Park, Poughkeepsie, Pleasant Valley and Salt Point Quads.

2. Simmons, E.T. et al. 1961. Ground-Water Resource of Dutchess County, New York: Well Logs.

3. New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

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

7 foot reported in Well Du 469; bedrock exposed at ground surface in Area 4.

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

Assumed to be <6 feet. Depth to aquifer of concern $D_{(gw)} - D_{(fill)}$ = 1 foot. Assigned value = 3.

Net Precipitation

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

Mean annual = 40 inches.

Reference: Cornell Univ. Agr. Expt. Sta. Bulletin 1009, Ithaca, New York.

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

Mean annual = 28 inches.

Reference: Federal Register Vol. 47 No. 137, July 16, 1982.

Net precipitation (subtract the above figures):

12 inches. Assigned value = 2.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Hoosic gravelly sand loam.

Reference: USGS, 1955. Soil Survey of Dutchess County.

Permeability associated with soil type:

Moderately permeable, estimated range 10^{-3}-10^{-5} cm/sec. Assigned value = 2.

Physical State

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

Garbage, refuse. Assigned value = 1.

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

No liner, no runon/runoff control.

Method with highest score:

No liner.

Reference: EA Site Inspection, 15 January 1985.

Assigned value = 3.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Unknown.

Compound with highest score:

Assigned value = 0.

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):

Unknown quantity of hazardous waste.

Basis of estimating and/or computing waste quantity:

Not applicable. Assigned value = 0.

***

5 TARGETS

Ground Water Use

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

The aquifer of concern has been developed by wells for public water supplies for several subdivisions within the City limits.

Assigned value = 3.

Distance to Nearest Well

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

The nearest well drawing from the aquifer is a private residence, approximately 500 feet north of the disposal area designated Area 1.

Distance to above well or building:

500 feet. Assigned value = 4.

Reference: EA Site Inspection, 15 January 1985.
USGS. 1982. Poughkeepsie, NY 7.5-Minute Series Quad.

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:

The aquifer of concern is the bedrock within a 3-mile radius up to the Hudson River on the west.

Community Water Supplies:	Population
Eleanor Roosevelt	200
Franton Villas	50
Green Meadow Trailer Court	44
Hyde Park Terrace Apt.	70
M&D Mobile Home Park	108
Valley Forge Mobile Home Park	60
Willow Tree Park	30
Woodfield Apt.	7
Haviland Apt.	100
Total	669

Reference: New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

Homes with private wells:

321 x 3.8 persons	1,222
Total	1,889

Reference: Poughkeepsie, Hyde Park, and Pleasant Valley Quads.

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):

Unknown.

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

1,889. Assigned value = 3. Combined value = 30.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

No data on release to surface water. Assigned value = 0.

Rationale for attributing the contaminants to the facility:

Not applicable.

***

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Average slopes for Sites 1-6 ranged from 2 to 32 percent.

Reference: EA Site Inspection, 15 January 1985.

Name/description of nearest downslope surface water:

Unnamed tributary to Hudson River.

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

Not applicable, sites are located partially in surface water.

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

Yes.

Reference: USGS. 1982. Poughkeepsie, NY 7.5 Minute Series Quad.
New York State Department of Health. 1982.
New York State Atlas of Community Water System Sources.
EA Site Inspection, 15 January 1985.

Assigned value = 3.

Is the facility completely surrounded by areas of higher elevation?

The facility is not completely surrounded by higher elevation.

1-Year, 24-Hour Rainfall in Inches

2.5 inches

Reference: U.S. Department of Commerce. 1963. Rainfall Frequency Atlas of the U.S. TP 40.

Assigned value = 2.

Distance to Nearest Downslope Surface Water

0 feet - surface water discharges through the fill material.

Assigned value = 3.

Physical State of Waste

Garbage, refuse. Assigned value = 1.

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no runon/runoff control.

Method with highest score:

Landfill, not covered, no diversion.

Assigned value = 3.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Unknown. Assigned value = 0.

Compound with highest score:

Not applicable.

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):

Unknown. Assigned value = 0.

Basis of estimating and/or computing waste quantity:

Not applicable.

***

5 TARGETS

Surface Water Use

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

The Hudson River which is the receiving water for the unnamed tributaries through the site is the drinking water supply for both the City of Poughkeepsie and the Hudson River Psychiatric Center.

Reference: New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

Assigned value = 3.

Is there tidal influence?

Yes.

Distance to a Sensitive Environment

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

None.

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

1,500 feet.

Reference: USGS. 1982. Poughkeepsie, NY 7.5-Minute Series Quad.

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

0.25-1.0 mile. The Hudson River channel due west of the HRPC site is considered an important shortnose sturgeon (Acipenser brevirostrum) wintering habitat and may be used at other times of the year as well. The Significant Habitat Unit is recommending that the deepwater portion of the river in this area be designated by the NYSDEC as a "significant coastal fish and wildlife habitat."

Assigned value = 2.

Reference: Brown, L. 1985. Personal Communication, 9 October 1985. Significant Habitat Unit, New York State Department of Environmental Conservation, Delmar, New York.

Population Served by Surface Water

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

	Population Served
Hudson River Psychiatric Center	2,000
City of Poughkeepsie 1,500 feet downstream of site	30,000
Total	32,000

Reference: New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

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

Unknown.

Total population served:

32,000 people.

Name/description of nearest of above waterbodies:

The Hudson River is a large river that serves the area as a recreational and water supply use.

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

Hudson River Psychiatric Center (Distance from Area 1 to Hudson River. HRPC intake is at the termination point of the unnamed tributary which borders Area 1).	500 feet
City of Poughkeepsie Distance from Area 6 to Poughkeepsie intake.	2,500 feet

Reference: New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

Assigned value = 40.

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No data available. Assigned value = 0.

Date and location of detection of contaminants:

Not applicable.

Methods used to detect the contaminants:

Not applicable.

Rationale for attributing the contaminants to the site:

Not applicable.

***

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Not applicable.

Most incompatible pair of compounds:

Not applicable.

Toxicity

Most toxic compound:

Not applicable.

Hazardous Waste Quantity

Total quantity of hazardous waste:

Not applicable.

Basis of estimating and/or computing waste quantity:

Not applicable.

***

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

3,600. Residences (268 X 3.8 persons = 1,018), plus 1/10 of the population of Fairview (585), plus the population of the HRPC (2,000).

References: NYSDOH. 1982. New York State Atlas of Community Water System Sources.

NYSDOT. 1983. New York State Map Gazetteer.

Distance to a Sensitive Environment

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

None.

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

1,500 feet.

Reference: USGS. 1982. Poughkeepsie, NY 7.5 Minute Series Quad.

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

0.25-1.0 mile. The Hudson River is habitat to the shortnose sturgeon, an endangered species.

Land Use

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

500 feet.

Reference: USGS. 1982. Poughkeepsie NY 7.5-Minute Series Quad.

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

None.

Reference: USGS. 1982. Poughkeepsie NY 7.5-Minute Series Quad.

Distance to residential area, if 2 miles or less:

300 feet.

Reference: USGS. 1982. Poughkeepsie NY 7.5-Minute Series Quad.

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

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

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

No.

Reference: EA Site Inspection, 15 January 1985.

New York Statewide Comprehensive Recreation Plan 1983: Map. New York State Office of Parks, Recreation, and Historic Preservation.

REFERENCE NO. 4

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

WATER RESOURCES COMMISSION

Ground-Water Resourses of Dutchess County, New York

By

E. T. SIMMONS, I. G. GROSSMAN, AND R. C. HEATH
Geologists, U. S. Geological Survey



Prepared by the

U. S. GEOLOGICAL SURVEY

in cooperation with the

NEW YORK WATER RESOURCES COMMISSION

BULLETIN GW-43

ALBANY, N. Y.

1961

Purpose and Scope of Report

The investigation of ground water in Dutchess County is part of an overall study of the ground-water resources of New York State which is being made by the U. S. Geological Survey in cooperation with the New York Water Resources Commission. The purpose of these investigations is to collect and evaluate data on the source, occurrence, availability, utilization, and quality of ground water. Figure 1 shows Dutchess County and other upstate areas in which similar investigations have been or are being conducted. Reports already published are listed on the back cover of this report.

The importance of ground water in Dutchess County is illustrated by the fact that most farms, rural homes, and recreational camps, as well as many industries and public water systems are dependent on wells for their water supply. The relatively rapid economic growth of the county in recent years has resulted in a significant increase in the use of ground water.

The work on which this report is based consisted of the following:

1. Collection of data on the depth, diameter, depth to water, yield, type of water-bearing material, and other pertinent facts concerning more than 1,000 selected wells and test holes in the county. Records of more than 650 of these wells are given in table 13. Similar data were collected also for 60 springs, and the records of more than 50 of these are given in table 9.

2. Collection and analysis of water samples for determination of chemical quality.

3. Mapping of the bedrock and glacial deposits in those parts of the county for which existing maps were not adequate for the needs of the study.

4. Collection of data on the use of ground water.

The field work was done principally by E. T. Simmons under the supervision of E. S. Asselstine and M. L. Brashears, Jr., formerly geologist-in-charge and district geologist, respectively. Most of the well and spring records were collected by V. H. Rockefeller, E. T. Simmons, and Harry Wilson. The unconsolidated deposits were mapped by Walter S. Wetterhall. A preliminary draft of the manuscript was prepared by Mr. Simmons prior to his resignation from the Geological Survey. The final report was prepared

GEOGRAPHY

Location and Setting

Dutchess County is in southeastern New York State, about halfway between New York City and Albany. It is one of a row of counties east of the Hudson River that border on the New England States. The county is bordered on the east by the State of Connecticut, on the south by Putnam County, on the west by the Hudson River, and on the north by Columbia County and the Commonwealth of Massachusetts.

Dutchess County is rectangular in outline and has an area of 816 square miles. It extends about 34 miles in a north-south direction and 22 miles in an east-west direction. Most of it lies between meridians 73°30' and 73°59' west longitude and parallels 41°30' and 42°04' north latitude. The population of the county in 1950 was 136,781, about 40 percent of which was concentrated in the cities of Poughkeepsie and Beacon.

Topography

The surface of Dutchess County is moderately irregular, consisting of an almost continous alternation of hills and valleys (pl. 1). Flat areas, though present in most parts of the county, are generally small and occupy a minor proportion of the area. The county is divided on the basis of topography into two relatively distinct parts. The smaller of these consists of the area in the northwestern part of the county west of Wappinger Creek and longitude 73°45'W. This area is characterized by numerous small, irregularly shaped hills, most of which range in height from about 20 to about 100 feet above the intervening valleys. Scattered throughout the area, however, are a few small, regularly shaped hills that rise 200 to 300 feet or more above the adjacent valleys. Altitudes in this area range from about 40 feet above sea level near the Hudson River to about 900 feet above sea level at Old Round Top. Drainage is not so well developed as in the remainder of the county, as indicated by the presence of numerous swamps.

The remainder of the county--that is, east of longitude 73°45' W. in the northern part of the county and east and south of Wappinger Creek in the central and southern parts of the county--is characterized by numerous regularly shaped hills and low mountains. These are larger and generally higher than those in the northwestern part. Many of the hills in this area range in altitude from 500 to 1,000 feet above the floors of the valleys. The highest altitudes generally occur along the southern and eastern boundaries of the county. South Beacon Mountain, near the southwest corner of the county reaches an altitude of 1,602 feet above sea level. Brace Mountain, in the extreme northeast corner, reaches an altitude of 2,311 feet above sea level, the highest point in the county. South Beacon Mountain and the other mountains in the southern part of the county mark the northern limit of the Hudson Highlands, a belt of northeast-trending mountains under-

lain by resistant granite and gneiss. Brace Mountain and the other mountains along the eastern border of the county are a part of the Taconic Mountains (Fenneman, 1938, p. 1). Drainage is well developed in this area and swamps, though present, are not common.

Although hills and low mountains are the most characteristic topographic features of the eastern and southern parts of the county, the area includes several relatively extensive lowlands. The most prominent of these include the valley of Fishkill Creek, immediately north of the Hudson Highlands; the more or less continuous lowland, locally referred to as the Harlem Valley, near the eastern border of the county which includes the valleys of Swamp River, Tenmile River, and Webatuck Creek; and the area in the vicinity of Pine Plains near the northern boundary of the county. The otherwise flat surfaces of the lowlands are interrupted in many places by low hills 50 to 200 feet high. The flat surfaces of the lowlands range in altitude from about 400 to about 600 feet above sea level. The lowlands are underlain by limestone, and they owe their existence to the fact that the limestone is more susceptible to solution and other weathering processes than are the shale, quartzite, and crystalline rocks that underlie the remainder of the county.

Drainage

All of Dutchess County except the eastern part is in the Hudson River drainage basin (fig. 2). The Hudson River stands approximately at sea level and its stage rises and falls in response to ocean tides as far north as the locks of the barge canal at Troy, 50 miles north of the county. The largest streams in the county tributary to the Hudson are Wappinger Creek and Fishkill Creek. Wappinger Creek flows 32 miles across the county, from Pine Plains in the northeast to New Hamburg in the southwest. It has a total fall of 460 feet and an average fall of about 14 feet per mile. Fishkill Creek drains most of the central and southern parts of the county. It flows southwesterly from the vicinity of North Clove to the Hudson River at Beacon. It has a total fall of about 600 feet in 26 miles, or an average fall of about 23 feet per mile. Two of the major tributaries of the Hudson flow outside the county throughout most of their courses. Roeliff Jansen Kill, which drains a small area in the north-central part of the county, enters the Hudson River in Columbia County. The East Branch of the Croton River, which drains a small area in the southeastern part of Dutchess County, flows southward through Putnam County and southwestward into the Hudson River in Westchester County. Small areas are drained by Crum Elbow Creek, Landsman Kill, Stony Kill, and other small streams which generally flow southwestward into the Hudson River.

A small area of about 200 square miles in the eastern part of the county is drained by the Tenmile River, which flows eastward to the Housatonic River in Connecticut.

GEOLOGY

Ground water occurs in all the geologic formations in Dutchess County and most of these are important sources of water. With respect to the principal kinds of openings in which the water occurs, these formations are placed in two major groups: (1) consolidated rocks that range in age from Precambrian to Ordovician, and (2) unconsolidated deposits of Pleistocene and Recent age. The areal extent of the different bedrock formations is shown on plate 2. These rocks underlie the entire county and crop out at the surface principally on hillsides and hilltops. In most of the county, however, the bedrock is overlain by unconsolidated deposits, which range in thickness from less than a foot on steep hills to more than 100 feet in some of the larger valleys. The areal extent of the different types of unconsolidated deposits is shown on plate 3. The principal events leading to the present-day distribution of the consolidated rocks and unconsolidated deposits in the county are described briefly in the following paragraphs. Although this report is a cooperative product of the New York Water Resources Commission and the U. S. Geological Survey, the geologic nomenclature does not necessarily follow that of the U. S. Geological Survey.

Geologic History

The oldest known strata in the county were laid down as clayey and limy mud and sand in a sea which covered the area in Precambrian time, more than 500 million years ago. After deposition, these strata were subjected to great heat and pressure which accompanied the intrusion of extensive masses of granite. The sediments were metamorphosed to a gneiss by the heat and pressure, and the gneiss is now so completely penetrated by the granite that the two look very much alike and hence are referred to on the bedrock map (pl. 2) as "undifferentiated granite and gneiss." The intrusion of the granite was followed by a long period of erosion during which the area was reduced to a low plain.

During the Cambrian, the first period of the Paleozoic era, the sea once again advanced over the area. A thick mass of sediments, consisting chiefly of sand and limy mud, collected on the sea floor. Deposition of limy mud and of clay and sandy clay continued into the succeeding Ordovician period. All these sediments were subsequently consolidated into beds of sandstone, limestone, and shale. At the end of the Ordovician, these beds were folded, metamorphosed, and raised above sea level during an episode of mountain-making known as the Taconic orogeny. During this orogeny the sandstone, limestone, and shale in the southern and eastern parts of the county were converted, through metamorphism, to quartzite, marble, and phyllite and schist. During and following the Taconic orogeny the area was subjected to another long period of erosion. Some deposition may have occurred in the general area during subsequent periods of the Paleozoic era, although no bedrock younger than Ordovician is known to occur. Crustal movements near the end of Devonian time known as the Acadian disturbance, during which rock in areas to the north and west were faulted, also may have affected the rock in Dutchess County.

At the close of the Paleozoic era the rocks were again folded and were broken and displaced along thrust faults during a series of large-scale crustal movements, which have been called the Appalachian revolution. Many of the fractures along which the consolidated rocks are broken probably resulted from these crustal movements. The recognizable fractures include both joints and faults. Many of the more important faults are shown on plate 2. Faults are relatively abundant in the southern part of the county and control the extent of the different bedrock formations at many places.

In the succeeding Mesozoic era, the area was eroded to a lowland. The many pegmatite and mafic dikes that cut the Paleozoic rocks probably were intruded in this era.

In the Cenozoic era, the most recent era in the earth's history, the land was again elevated, and a new cycle of erosion began. Near the end of the Cenozoic, in Pleistocene time, continental glaciers advanced more than once across most of the State. The general direction of ice movement was toward the south or southeast. It is believed that at times the ice was thick enough to cover completely the highest peaks in the Taconic Mountains and the Hudson Highlands. Deposits of mixed unconsolidated material consisting chiefly of clay and boulders, called till, were laid down directly by the ice over much of Dutchess County. Gravel, sand, and silt were deposited in the stream valleys during and after the melting or wasting of the ice. At places these deposits blocked preglacial channels, resulting in the formation of lakes and swamps in which silt, clay, some peat, and other fine-grained deposits were laid down. After the ice disappeared, the land was partially reelevated. This rejuvenated the streams, which are now actively eroding both glacial debris and exposed bedrock. Although erosion is dominant at the present time, some deposition is occurring in lakes and swamps and on the flood plains of the larger streams. The deposition in lakes fed by perennial streams is probably more or less continuous, whereas deposition in swamps and on the flood plains is principally restricted to flood periods. Sediments laid down during the last few thousand years are referred to as Recent alluvium. The alluvium consists largely of thin layers of clay, silt, sand, and gravel.

Geologic Units

As indicated in the preceding paragraphs, the unconsolidated deposits of Dutchess County consist of four distinct types, three of Pleistocene age and one of Recent age. The areal extent of the deposits of Pleistocene age is shown on plate 3, and their lithologic characteristics and water-bearing properties are summarized in table 2. The deposits of Recent age are not distinguished on plate 3 because of their slight thickness and discontinuity. The consolidated rocks underlying Dutchess County consist of four distinct units, one of Precambrian age and three of Paleozoic age. The areal extent of these units is shown on plate 2 and their geologic and hydrologic characteristics are summarized on table 2.

Table 2.--Geologic units in Dutchess County and their water-bearing properties

Class	Age	Geologic Unit		Maximum thickness (feet)	Character of material	Water-bearing properties
Unconsolidated deposits	Recent	Alluvium		30±	Clay, silt sand, and gravel deposited by present-day streams in lakes, swamps, and on flood plains.	Not important as source of water because of limited thickness and restriction to discontinuous areas adjacent to streams. Potentially important, however, in larger valleys where coarse-grained material permits induced infiltration from nearby streams.
	Pleistocene	Stratified drift	Sand and gravel	200	Irregularly interbedded and interlensing sand and gravel formed by glacial melt-water streams.	Most productive source of ground water in county, though restricted in areal extent to portions of main stream valleys. Yields moderate to large supplies from properly constructed wells. Water moderately hard in parts of the valleys underlain by Stockbridge limestone.
		Stratified drift	Lacustrine deposits	200	Clay and silt deposited in glacial lakes.	Yields little water. Generally acts as a confining bed where underlain by permeable deposits.
		Unstratified drift	Till	150	Heterogeneous mixture of boulders and clay deposited by glacial ice. In places, contains small lenses of sand and gravel. Locally called "hardpan."	Generally thin and impermeable but yields small supplies to wells of large diameter.
Consolidated rocks	Late (?) and Middle Ordovician	Hudson River formation		3,000+	Shale or slate, chiefly gray or black but locally red, purple, and green. Contains beds of grit, limestone, limestone conglomerate, and black chert. Metamorphosed to phyllite and in east to schist.	Most extensive bedrock formation in county. Yields average 16 gpm. Water moderately soft and fairly low in dissolved solids, but hydrogen sulfide reported in some wells.
	Ordovician and Cambrian	Stockbridge limestone		1,000±	White, blue, and gray limestone and dolomite metamorphosed to marble in east. Veins of calcite and quartz common.	Chiefly restricted to valley areas. Most productive bedrock formation; yields average 22 gpm and range widely from 0 to 220 gpm. Water moderately hard and relatively high in dissolved solids.
	Early Cambrian	Cheshire quartzite		600±	Strong, compact rock composed almost entirely of quartz. Generally white except locally, where impurities result in buff or pink color.	Unimportant as a source of ground water because of small areal extent. Yields of five wells in southern part of county average 10 gpm.
	Precambrian	Undifferentiated granite and gneiss		Unknown	Banded black and white gneiss and gray or pink granite. Chief minerals feldspar and quartz. Locally contains basic dikes, quartz veins, and minor amounts of schist and marble.	Principally restricted to southern part of county. Yields of wells average 11 gpm. Water generally soft and low in dissolved solids.

Consolidated Rocks

The bedrock underlying the county is composed of highly metamorphosed rocks of Precambrian age, and partially metamorphosed rocks of Paleozoic age. The older rocks, those of Precambrian age, consist mainly of granite and gneiss. The younger rocks, of Paleozoic age, consist of a larger variety of rock types, including quartzite, limestone, dolomite, marble, shale, phyllite, slate, and schist. Differences in age, degree of metamorphism, and lithology influence the water-bearing properties of the consolidated rocks. Thus, as an aid in understanding the occurrence of ground water in these rocks in different parts of the county, each of the principal types, as differentiated in table 2, is discussed separately in the following paragraphs.

Undifferentiated granite and gneiss.--Almost a tenth of Dutchess County is underlain at or near the surface by masses of northeast-trending igneous and metamorphic rocks of Precambrian age consisting chiefly of granite and gneiss. The largest mass underlies the southern part of the county from the Hudson River to the Connecticut State line. This mass ends abruptly 2 to 3 miles north of the southern border of the county against a series of sub-parallel major faults (pl. 2). Erosion of less resistant Paleozoic rocks north of the faults has resulted in a row of granite and gneiss spurs which are prominent topographic features in the southern part of the county.

The second largest mass of granite and gneiss underlies the group of prominent hills east of Dover Plains. Smaller bodies of granite and gneiss crop out at Corbin Hill, north of Pawling; at Stissing Mountain, west of Pine Plains; northeast of Beacon; and south of Sprout Creek, a few miles southeast of Poughkeepsie (pl. 2). The elongate mass northeast of Beacon has been called the Matteawan granite (Mather, 1843, pl. 18) and the Glenham gneiss (Gordon, 1911, p. 18). In the southwestern part of the county, the granite was subdivided into the Canada Hill granite and Storm King granite by Berkey and Rice (1921). The gneiss, which contains some schist and limestone, was called "Grenville gneiss and schists" by Berkey and Rice. However, in an earlier study of the southwestern part of the county, Gordon (p. 11) grouped together all the granite and gneiss along the southwestern border of the county under the term "Precambrian gneisses."

Balk (1932 and 1936) mapped the same rocks in the eastern part of the county and made a detailed study of their structure. In his reports, and in a report by Barth (1936), the granite and gneiss were combined into one major group, undifferentiated Precambrian gneiss. Because these rocks have not been further subdivided in the eastern part of the county and because there appear to be no significant differences in their water-bearing properties, the granites and the gneisses are grouped together in this report as "undifferentiated granite and gneiss."

probably about 1,000 feet in most places in the county. The Stockbridge limestone weathers readily and commonly forms valley and lowland areas. In the valley of Fishkill Creek, solution cavities filled with clay and sand have been reported.

Hudson River formation.--The Hudson River formation is the most extensive bedrock unit in the county. As may be seen from plate 2, it extends from the Hudson River in the west to the Connecticut State line in the east, interrupted by only a few relatively narrow limestone belts. The name "Hudson River slate group" was first used by Mather (1840, p. 212, 256-258) for the slaty rocks in the southeastern part of the State. Gordon (1911) mapped these rocks in the Poughkeepsie quadrangle as the "Hudson River group." Berkey and Rice (1921) mapped the same rocks in southwestern Dutchess County as "Hudson River shales and phyllites." In the southeastern part of the county these rocks are referred to as "Hudson River pelite" in publications by Balk (1936) and Barth (1936). In the Copake quadrangle in southeastern Columbia County, the names Elizaville shale (mainly Cambrian, possibly including some Lower Ordovician), Berkshire schist (Ordovician), and Trenton black slate (Ordovician) have been used by Weaver (1957, pl. 1) for rocks that extend southward into northeastern Dutchess County. Ruedemann (1942) divided the predominantly argillaceous rocks in the Catskill quadrangle, in northwestern Dutchess County, into the Nassau beds and Schodack shale (including Bomoseen grit) of Cambrian age, and the Deepkill shale and Normanskill shale (including the Mount Merino member and the Austin Glen member) of Ordovician age. As used in this report, the Hudson River formation includes all the argillaceous and schistose rocks in Dutchess County.

Although the Hudson River formation is preponderantly argillaceous, it includes a large variety of rock types. The lower part of the unit contains much sandstone ("grit") and is locally called bluestone by some well drillers. The unit also contains chert and beds of sandstone, limestone, and conglomerate. Quartz veins are very abundant. The shale itself is locally black, gray, red, or green.

The metamorphism of the Hudson River formation increases in intensity from northwest to southeast, just as in the Stockbridge limestone. At Red Hook, in the northwestern part of the county, the unit is a shale. The shale grades imperceptibly southeastward into a slate and then into a lustrous phyllite. Between the valley of Wappinger Creek and the headwaters of Fishkill Creek, it is chiefly a phyllite. Farther southeast, between Fishkill Creek and the Harlem Valley it is predominantly a garnet-bearing schist. In the extreme southeastern part of the county, east of Pawling, it is a gneissic schist. The gneissic schist in this area contains amphibolite lenses and pegmatite intrusions.

Unconsolidated Deposits

Unconsolidated material deposited chiefly by glaciers and glacial melt water in Pleistocene time, lies on the bedrock in Dutchess County. Minor amounts of stream-laid material of Recent age mantle the Pleistocene deposits in a few narrow, discontinuous valley areas and in some lakes and swamps. The unconsolidated deposits are widespread and relatively thick, at least in lowland areas. The greatest thickness occurs in the gorge of the Hudson River, where borings for the Catskill Aqueduct of New York City penetrated several hundred feet of fill, most of which is probably of glacial origin. The deepest boring was at the Storm King crossing, near the Putnam County line, where bedrock reportedly was encountered at a depth of 608 feet below river level. If this reported depth is correct, the deepest part of the bedrock gorge probably is somewhat below 608 feet because it is unlikely that the drill was situated at exactly the deepest point. The layers penetrated by these borings ranged in composition from a mixture of clay and boulders to sand and gravel.

The Pleistocene drift is divided into three units, shown on plate 3: (1) till (unstratified drift), consisting of a mixture of rock materials deposited directly by the ice; (2) lacustrine deposits, consisting of silt and clay laid down in lakes; and (3) sand and gravel deposited in lowlands and in lakes from glacial melt water.

Till.--Till consists of a heterogeneous mixture of rock fragments of all sizes from microscopic particles of clay to large boulders several feet in diameter. As may be seen on plate 3, it is the most widespread of the Pleistocene deposits.

The till was laid down directly from the glacial ice, which was thick enough to pass over the highest peaks in the county, as well as the highest peaks of the Catskill and Taconic Mountains. The ice moved in a southerly direction, as indicated by the alinement of grooves and striations on exposed rock surfaces. Erosion was the dominant process in upland areas. Thus, the present-day cover of glacial debris in these areas is generally thin (less than 30 feet thick) or absent. Exceptions exist where thick deposits of till were laid down beneath the ice in the form of elliptical hills known as drumlins. These hills may contain as much as 200 feet of clay till. In lowland areas, the dominant process was that of deposition and the glacial deposits in these areas are relatively thick. For example, well Du 758, about 2 miles southwest of Wappingers Falls, penetrated 140 feet of unconsolidated material before reaching the Hudson River formation.

The rock fragments composing the till were derived mainly from the bedrock in the immediate area. In areas underlain by shale, slate, phyllite, and schist, the till consists largely of clay. In areas underlain by limestone, dolomite, or marble, the till contains numerous calcareou pebbles. Six mechanical analyses were made by the U.S. Department of Agriculture (Secor and others, 1955, p. 128) of samples of soil in the count

derived from glacial till. These samples consisted mainly of calcareous sandstone and some admixed shale, slate, limestone, and igneous erratics. The samples were collected from progressively greater depths. The analyses show that more than half of each sample consisted of silt and clay, and that the content of sand and fine gravel increased slightly from a low of 36.3 percent (by weight), at a depth of 0 to 10 inches, to a high of 43.0 percent, at a depth of 68 to 144 inches. In some areas, lenses of relatively clean sand may occur in till. However, sand lenses in till are generally thin and of small areal extent. Most of the till is clayey and some of it may even be cemented or compacted to form a tough aggregate referred to as "hardpan" by local drillers.

Lacustrine deposits.--Stratified drift deposited in glacial lakes underlies several areas in the county, notably along the Hudson River and in the lowland north of the Hudson Highlands in the southwestern part of the county. The approximate extent of these deposits where they compose the uppermost unconsolidated deposit is shown on plate 3. As may be seen from the plate, they underlie an irregularly shaped and relatively extensive area in the northwestern corner of the county, from the mouth of Crum Elbow Creek north to the county line. In the southwestern part of the county, they underlie numerous small areas from Poughkeepsie south to the Highlands.

Woodworth (1905, p. 175) believed that the lacustrine deposits along the Hudson River were laid down in one large lake, called glacial Lake Albany, which was dammed by a single tongue of stagnant ice. Cook (1942, p. 192) suggests, on the other hand, that the deposits were laid down in a complex series of small lakes rather than in a single lake. These lakes were largely restricted to the area adjacent to the Hudson River in the western part of the county. Thus, lacustrine deposits either are not present in the eastern part of the county or, if present, occupy relatively small areas and are covered by other unconsolidated deposits which obscure their presence.

The lacustrine deposits in the western part of the county contain layers of silt and clay that were deposited in those parts of the lakes in which the water was relatively quiet. The deposits also contain interbedde layers of sand and silt that were laid down near the mouths of streams entering the lakes. At the time the lakes drained, the lacustrine deposits formed a terrace that sloped westward toward the present channel of the Hudson River. The altitude of the terrace ranges from about 220 feet near its eastern margin to about 120 feet near the river. This terrace has been considerably modified by postglacial stream erosion.

Sand and gravel.--Stratified drift consisting principally of sand and gravel underlies extensive areas in the major stream valleys and in some tributary valleys. As shown in plate 3, the most extensive deposits are ir the valleys drained by Fishkill Creek, Sprout Creek, Swamp River, Tenmile River, and Wappinger Creek.

Most of the sand and gravel consists of stream-laid deposits, called outwash, laid down by melt water streams. The deposits range from layers of relatively clean sand to layers composed of a mixture of sand and gravel. The alternation of layers of coarse and fine material reflect changes in the conditions under which the beds were laid down.

Stratified sand and gravel in the county occurs in four principal forms: kames, kame terraces, valley trains, and deltas. Kames, in the form of small conical hills, are relatively common in the extreme southern part of the county at the northern margin of the Hudson Highlands. They are present also between the Hudson River and U.S. Highway 9, about 3 miles south of Poughkeepsie. Kame terraces, relatively flat topped deposits of sand and gravel on the sides of valleys are prominent in the valley of Swamp River. They have also been observed by Woodworth (1905, p. 121) along the Hudson River between Poughkeepsie and the mouth of Wappinger Creek. Valley-train deposits are long and narrow deposits of sand and gravel underlying valley floors. These deposits underlie parts of many of the principal stream valleys, including those of Wappinger Creek, Fishkill Creek, Webatuck Creek, Crum Elbow Creek, and Tenmile River (pl. 3). Delta deposits laid down where melt water streams entered glacial lakes, have been mapped at New Hamburg, at the mouth of Wappinger Creek, by Woodworth (p. 119) and have been observed also in the Valley of Swamp River. There are large deltas also at Rhinebeck and Red Hook. Deposits of sand and gravel in the principal stream valleys of the county are discussed in greater detail in the section devoted to the occurrence of water in unconsolidated deposits.

GROUND WATER

Source and Movement

Ground water occurs in all the consolidated and unconsolidated deposits of Dutchess County. Records of 675 wells (table 13) and about 50 springs (table 9) provide information on its occurrence in the different deposits.

Practically all ground water in the county is derived from local precipitation. An inch of rain, or snow having a water content equivalent to 1 inch of rain, falling on an area of 1 square mile yields about 17 million gallons of water. The average annual precipitation is about 45 inches, or about 1.6 billion gallons per day, on the 816 square miles of the county.

A large part of the precipitation returns to the atmosphere by evaporation, is transpired by vegetation, or runs off to streams. The remainder percolates into the ground. The amount of precipitation entering the ground depends chiefly on (1) the porosity, permeability, and water content of the surficial deposits, (2) the slope of the land, (3) the amount and kind of vegetal cover, and (4) the intensity and amount of precipitation. It is

evident that more infiltration occurs where rain falls at a slow steady rate on flat land than where it falls at a rapid rate on steeply sloping land.

Some of the water that percolates into the ground is held by molecular attraction in the zone of aeration, where some interstices contain air or other gases, in addition to water. Water not held by molecular attraction percolates downward to the zone of saturation--the zone in which pore space are filled with water under hydrostatic pressure. Only water in this zone is referred to as ground water and is available to supply wells and springs.

Water in the zone of saturation may be unconfined or confined. Where the water only partially fills a permeable bed, its surface, called the water table, is free to rise and fall and the water is said to be under water-table (unconfined) conditions. Where water completely fills a permeable bed that is overlain by a relatively impermeable bed, its surface is not free to rise and fall (although the hydrostatic pressure of the water may fluctuate) and the water is said to be under artesian (confined) conditions. Water under artesian conditions will rise in a well above the zone in which it was encountered, though not necessarily above the land surface. The total number of flowing wells in Dutchess County is quite small; only 20 of the 675 wells listed in table 13 are reported to flow for all or part of the year. The remaining wells either tap artesian water that is not under sufficient pressure to rise above the land surface or tap water that is under water-table conditions.

The top of the zone of saturation, the water table, follows the configuration of the land surface and is at a higher altitude beneath hills than beneath valleys. However, the top of the zone of saturation is generally at a greater depth beneath hills than beneath valleys, and therefore the water table is flatter than the surface topography. Depths to water have been reported for about 470 of the 675 wells in table 13.

Ground-water levels fluctuate in response to changes in the amount of water in storage in the ground. This quantity reflects the balance between recharge and discharge. Thus, recharge from rain or melting snow causes a rise in water levels. Discharge from wells, springs, or seepage into streams in excess of recharge results in a decline in water levels. The fluctuation of ground-water levels follows a fairly regular pattern. Normally, water levels begin to rise in the late fall when plant growth stops and evaporation losses are reduced. The levels remain relatively unchanged during the winter or decline slightly. Precipitation in the spring before evapotranspiration losses have become significant generally causes a rise in ground-water levels. Water levels begin to decline in the late spring when the transpiration of plants and evaporation losses consume most of the precipitation. However, the extent of these seasonal fluctuations differs markedly, both between different types of deposits and between different topographic situations. The largest fluctuations, ranging from 10 to 20 feet, generally occur in wells in the relatively

impermeable deposits, such as till, and in wells in bedrock underlying the hills. The smallest fluctuation, ranging from 5 to 10 feet, generally occur in wells in the more permeable unconsolidated deposits, such as sand and gravel, and in wells in bedrock in the valleys.

In an effort to obtain information on the fluctuation of water levels in Dutchess County, observations were begun in the fall of 1948 in well Du 321 on the Vanderbilt Mansion National Historical Site in the village of Hyde Park about 5 miles north of Poughkeepsie. The observations were temporarily discontinued between 1950 and 1953. In April 1953, a continuous water-stage recorder was installed on the well which is 128 feet deep; the depth to which it is cased and the type of material penetrated by the well are unknown. A graph of monthly water-level measurements at the well and monthly precipitation at Poughkeepsie are shown in figure 4. The graph of the water level from 1948 to 1950 more or less follows the expected seasonal pattern. However, soon after measurements were resumed in 1953 it became apparent that the water-level fluctuations depart considerably from the normal seasonal pattern. A graph of cumulative departures of precipitation from the monthly average is also shown on figure 4. It may be observed that there is a relatively close correlation between the water level in the well and the cumulative departure of precipitation. The water level in the well fluctuates in response to changes in barometric pressure. The charts from the continuous water-stage recorder show also the presence of tidal fluctuations. Although there is a possibility that these fluctuations result in part, at least, from tides in the Hudson River, a preliminary study indicates that they are due principally to earth tides.

The water-bearing characteristics of the unconsolidated deposits and the bedrock differ widely. Much of this difference is due to the type of openings in which the water is stored-- primary openings, consisting of intergranular pore spaces, or secondary openings, developed along joints, bedding planes, and faults. Most, if not all, of the water in the unconsolidated deposits is contained in primary openings. In the bedrock, on the other hand, most of the primary openings have been reduced in size by cementation, compaction, and crystallization. Thus, most of the water in bedrock occurs in secondary openings. The quantity of water that may be stored in a deposit depends on the porosity, or the percentage of the total volume of the deposit that is occupied by pores and other openings. Although no porosity determinations have been made for the deposits in Dutchess County, it may be assumed, on the basis of determinations made on similar deposits in other parts of the country, that the porosity of the unconsolidated deposits ranges from about 10 to 20 percent for till to about 15 to 35 percent for sand and gravel. The porosity of the bedrock, on the other hand, is considerably lower, probably not exceeding 2 or 3 percent in most places. Therefore, the quantity of water stored in a given volume of bedrock is 5 to 15 times less than the quantity stored in an equal volume of unconsolidated deposits.

The rate at which water moves through deposits, and thus the readiness with which it is available for withdrawal from wells, is controlled by the permeability of the material. Permeability, which is related to the size and degree of interconnection of pore spaces and other openings, is normally very low in bedrock, till, and fine-grained unconsolidated deposits, such as silt and clay. It is moderately high in deposits of coarse sand and in deposits of sand and gravel.

In view of these significant differences between the water-bearing characteristics of the unconsolidated deposits and those of the bedrock, the following discussion of the occurrence of ground water in Dutchess County is divided into two sections, one devoted to the unconsolidated deposits and one devoted to the bedrock.

Occurrence of Water in Unconsolidated Deposits

Unconsolidated surficial deposits overlie the bedrock almost everywhere in Dutchess County. These are divided into two units on the basis of their water-bearing characteristics. The first consists of unstratified deposits termed "till," which predominate in upland areas, and the second consists of stratified deposits of gravel, sand, silt, and clay, which predominate in valley areas.

Deposits in Uplands

Till, a mixture of rock materials ranging in size from clay to large boulders, is the principal unconsolidated deposit on the hills (pl. 3). Although till is generally unsorted and unstratified, in a few areas it contains lenses or irregular bodies of sand and gravel. Till overlying limestone generally consists of clay mixed with grains, pebbles, and cobbles of limestone, whereas till overlying slate and schist consists principally of clay mixed with a little quartz sand, and a small percentage of sandstone pebbles and cobbles. Granite and gneiss are generally overlain by a sandy till containing an abundance of large boulders. Till generally ranges in thickness from 10 to 20 feet on hilltops to 20 to 40 feet on the slopes. However, in a few valley areas and other places it is more than 100 feet thick. Its greatest thicknesses are generally found in drumlins-- low, elliptical hills shaped by the Pleistocene ice sheet. Osborne Hill, about 4 miles north-northeast of Beacon in the southwestern part of the county (pl. 1), is believed to be a drumlin. Well Du 455, on the east side of this hill, penetrated about 120 feet of till, as shown in the log in table 12.

Glacial till is not a productive water-bearing deposit because of its poor sorting and high clay content. Water in usable quantities can generally be obtained from till only from large-diameter wells, which provide a large area for the infiltration of water and a large volume for the storage of water between periods of use. The average yield of the six wells for which

yields have been reported is 3 gpm (gallons per minute) with a range from 1 to 4 gpm. The yields of most wells that draw from till are not known, because pumps are operated for only short periods and draw largely from water stored in the well. In general, wells tapping till may be expected to yield only a few hundred gallons a day.

The permeability of till is very low, and hence the movement of ground water into and through the deposit is extremely slow. As a result, most of the precipitation on areas underlain by till either runs off on the surface or is intercepted by plants to satisfy transpiration needs before it can reach the water table. Most wells drawing water from till are dug only a few feet below the water table. Thus, during dry periods many of these wells either "go dry" or fail to yield the required quantity of water. Most wells in Dutchess County reported to have been inadequate one or more times since construction, or to have failed completely, are dug wells tapping glacial till. Many of these wells are on hills, and the failures are largely due to seasonal decline of the water table.

Deposits in Valleys

The thickest unconsolidated deposits in Dutchess County occur in valleys and other lowland areas. These deposits consits of (1) till, (2) fine-grained stratified deposits of silt and clay, and (3) coarse-grained stratified deposits of sand and gravel. Plate 3 is a map of the county showing the principal unconsolidated deposit in each area. Areas shown as underlain by till generally do not contain any other unconsolidate deposit. Till in many of the valley areas underlies low irregularly shape hills that are surrounded by stratified deposits. In other areas, as at Pawling in the southeast corner of the county, the till extends from the uplands across the lowlands as a relatively continuous sheet. Till in the lowlands is generally thicker than in the uplands. Its average thickness is probably between 25 and 50 feet, though the actual thickness in some areas exceeds 100 feet. The water-bearing characteristics of the till are similar to those of the till in the uplands.

The fine-grained stratified deposits are widely distributed throughou most valley areas. Those areas in which the unconsolidated deposits consi entirely or almost entirely of clay and silt are shown on plate 3. However fine-grained stratified deposits are present also in many of the areas sho on the map to be underlain by sand and gravel. In these areas the clay an silt may either overlie, be interbedded with, or underlie the sand and gra Plate 3 shows that most of the areas in which clay and silt is the princip unconsolidated deposit are in the western part of the county, either adjacent to or near the Hudson River. These deposits are generally less than 50 feet thick, although they are as much as 125 feet thick in the are bordering the Hudson River south of Rhinebeck.

In view of the extremely low permeability of the clay and silt, the deposit will not yield water in usable quantities to wells and springs. In those areas in which clay and silt is the only or the principal unconsolidated deposit, ground-water supplies can be obtained only from the underlying bedrock. Although clay and silt is not important as a source of water, it exerts considerable influence on the occurrence of water. On the terraces adjacent to the Hudson River in the northwestern part of the county the clay and silt retards or prevents recharge to the underlying bedrock. Conversely, in the lower parts of many of the valleys the clay and silt retards upward leakage of water from the underlying beds of sand and gravel and bedrock. In these areas the water in the sand and gravel and in the bedrock occurs under artesian conditions, and in a few places is under sufficient pressure to flow at the land surface.

The sand and gravel is the most productive water-bearing deposit in the county. Plate 3 shows that this material underlies most of the lower part of the main valleys and many of the larger tributary valleys. The sand and gravel appears to have been laid down by swift-flowing streams of glacial melt water which were heavily laden with rock debris derived from the melting ice. As both the character and the amount of rock debris carried by the streams varied considerably from time to time, the thickness, character, and extent of the sand and gravel deposits vary considerably within relatively short distances. The beds of sand and gravel are associated with beds of silt and clay almost everywhere. In some areas wells penetrate as many as two or three distinct layers of sand and gravel, which are interbedded with layers of silt and clay. The layers of sand and gravel are generally less than 25 feet thick, although in some areas they are as much as 50 feet thick.

Deposits of sand and gravel are utilized extensively as a source of water supply. In these deposits small-diameter driven wells with screened drive points will generally yield water in sufficient quantity for domestic, farm, and small commercial needs. The moderate to large quantities of water needed by municipalities and industries can generally be obtained from large-diameter drilled wells. According to the quantity of water required and the character of the deposit, such wells may be either screened or finished with open-end casings. A comparison of the yield of screened and unscreened wells is shown in table 5. The yield of unscreened wells for which records were collected ranged from 3 to 200 gpm and averaged 38 gpm. The yield of screened wells ranged from 20 to 800 gpm and averaged 318 gpm.

The thickest section of unconsolidated deposits in the county underlies the present channel of the Hudson River. These deposits range in character from clay and silt to gravel and boulders. Berkey and Rice (1921, pl. 47a) indicate that more than 100 feet of sand underlies the river in the southeastern part of the county, about 0.1 mile north of the Putnam County line. The sand underlies about 100 feet of silt and clay and is underlain in turn by clay and by gravel, cobbles, and boulders. The sand is not continuous across the river but lenses out laterally. It also

lenses out both upstream and downstream, as shown by the results of drilling for the Delaware Aqueduct at Chelsea, about 10 miles north of the Putnam County line. Here much of the material consists of clay and other fine sediments. No wells are known to draw water from the stratified deposits underlying the channel of the river in Dutchess County.

Occurrence of Water in Consolidated Rocks

Joints, faults, bedding planes, and other openings serve as main channels for the storage and movement of water in the bedrock. The yield of wells in bedrock is determined primarily by the size, abundance, and continuity of these openings. Joints are the most important openings because they are numerous and widespread. Most of the major joints in Dutchess County dip relatively steeply and strike northeast, in conformity with the regional geologic structure. Cross joints and randomly oriented joints also are abundant locally. The spacing of joints generally ranges from a fraction of an inch in parts of the Hudson River formation to several feet in the more massive rocks such as the undifferentiated granite and gneiss and quartzite.

Faults are fractures along which recognizable differential movement of appreciable extent has taken place. They occur in all the consolidated rocks in Dutchess County, and their trend is northeast. Many of these faults, in whole or in part, are buried beneath unconsolidated material because they form weak zones beneath valley areas. The location of the more important faults mapped in the county is shown on the bedrock map (pl. 2). Some faults have been filled with minerals of igneous origin and their permeability may not differ much from that of the surrounding rocks. However, a brecciated fault that has not been cemented may be very permeable. Such a fault apparently was penetrated by well Du 630, which was drilled for the city of Beacon. The log of this well (table 12) shows that after penetrating about 90 feet of unconsolidated material, the drill entered a zone of decayed rock fragments mixed with clay. Disintegrated limestone mixed with clay was present to a depth of 370 feet. The exact depth to bedrock in the well is uncertain because of the disintegration of the rock. Of the total yield of 1,400 gpm, about 600 gpm was reportedly obtained from the bedrock. When the well was pumped, the bedrock, which was reported to be very soft, caved continuously.

The consolidated rocks in Dutchess County generally yield small to moderate supplies of water. The average yield of about 450 wells, as summarized in table 6, is about 17 gpm and the range is from 0 to 220 gpm. The yield of wells tapping the bedrock depends on several factors, the most important of which are (1) type of bedrock, (2) type of overlying unconsolidated deposits, (3) topographic position, and (4) occurrence of joints and other secondary openings.

Table 6.--Yield of wells tapping bedrock in Dutchess County

Water-bearing unit	Yield (gpm)			Number of wells	Remarks
	Average	Range			
		Low	High		
Hudson River formation	16	0	135	311	Most wells tap slat or phyllite; few tap schist or gneiss.
Stockbridge limestone	22	1	220	118	Does not include well Du 630.
Cheshire quartzite	10	2	30	5	Includes 3 wells penetrating both quartzite and other rocks.
Undifferentiated granite and gneiss	11	1	45	20	
All bedrock combined	17	0	220	454	

Table 6 shows that the yield of wells is related to the type of bedrock. The Stockbridge limestone is the most productive bedrock formation in the county, yields averaging about 22 gpm and ranging up to 220 gpm. The larger yields may indicate that joints and other openings in this formation have been enlarged by solution, although the lack of outcrops and generally thick cover of unconsolidated deposits effectively prevent observation of solutional effects. The Hudson River formation, which is the most widespread bedrock aquifer, is the second most productive. Yields from 311 wells in this unit average 16 gpm and range up to 135 gpm. The yields of 25 wells tapping granite and gneiss and the Cheshire quartzite are generally small, averaging about 10 or 11 gpm. Although some of these averages are based on a comparatively small number of records, they are believed to be representative. For example, the yields of 288 wells tapping granite and gneiss in adjacent Putnam County (Grossman, 1957, table 8) average 11 gpm.

The type of overlying material has an important effect on the yield of wells in bedrock. Table 7 shows that the average yield of wells tapping bedrock that is overlain by sand and gravel is more than 30 gpm. By contrast, the average yield of bedrock wells where the overlying material consists predominantly of clay or till is only about 13 gpm. Deposits of sand and gravel store large amounts of water and transmit water readily to the underlying bedrock where hydraulic continuity exists between the two materials. However, some of the large yields reported from bedrock wells overlain by sand and gravel may result from leakage of water from the overlying permeable deposits directly into the well. The yield of wells in bedrock where the overlying unconsolidated deposits are absent or are less than 10 feet thick is about the same, or only a little greater, than of wells where the overlying deposits are thicker but consist of impermeable till or clay. Thus, it may be concluded that thick but impermeable deposits which tend to retain the water above the bedrock have about the same effect on yield of bedrock as no overlying material at all.

Topographic location apparently affects the yield of bedrock wells in some areas (Ellis, 1909, p. 101). In Dutchess County, the yield is generally highest from bedrock wells situated in valleys and is lowest on hills. Table 8 shows that the average yield of wells in valleys is about 20 gpm compared to an average of about 16 gpm for wells on hillsides and an average of about 12 gpm for wells on hilltops. The Cheshire quartzite is not included in the table because only a few records of wells drawing from this formation are available. The influence of topography on the yields of wells apparently stems, at least in part, from the fact that the water table is generally closer to the land surface in valleys than on hills. Thus, wells of the same depth penetrate a greater thickness of saturated material in valleys than on hills and yield more water, other things being equal.

It should be emphasized that the factors affecting the yield of wells in bedrock are interdependent and tend to operate in the same direction. Thus, most wells drilled in valleys have comparatively large yields not only because of their favorable topographic location but also because the bedrock there is more permeable and is more likely to be overlain by permeable sand and gravel. Similarly, most wells drilled on hills yield smaller quantities of water not only because of a less favorable topographic situation, but also because the bedrock is less likely to be overlain by permeable deposits.

Amenia.--Amenia (population 800) is supplied from two wells, Du 99 and Du 100, owned by the Amenia Water Co. Consumption averages about 100,000 gpd and maximum consumption is about 150,000 gpd.

Beacon.--Beacon (population 14,000) was formerly supplied entirely by the Cargill, Mount Beacon, and Melzingah reservoirs, with capacities of 160 million, 124 million, and 55 million gallons, respectively. The supply became inadequate during dry periods in the decade 1940-50, and additional water was pumped from Fishkill Creek. In 1948 and 1949 several test wells were drilled in the Fishkill Valley, about 4 miles northeast of Beacon, to determine whether a satisfactory ground-water supply could be obtained (see table 13, wells Du 626 and Du 630). Well Du 630, which was completed in 1950, reportedly yielded 1,400 gpm. The average consumption from ground-water and surface-water sources is 1,750,000 gpd. All water is chlorinated before distribution.

Dover Plains.--Prior to 1957, water for the village of Dover Plains (population 700) was obtained entirely from Seven Wells Brook. Since 1957, the supply has been supplemented with water from a drilled well. Distribution is effected by gravity. The maximum consumption is 120,000 gpd but the average is about 75,000 gpd. About 90 percent of the water is used by industries. The water is chlorinated.

Fishkill.--Fishkill (population 720) is supplied by water from Hell Hollow Brook and Clover Brook. The water from these streams is stored in a reservoir with a capacity of 6 million gallons, situated 5 miles south of the village. Water is distributed from the reservoirs by gravity. It is chlorinated and copper sulfate also is used to control the growth of algae in the reservoir when the water supply is low. The average consumption is 125,000 gpd but the maximum reaches 500,000 gpd.

Hyde Park.--Hyde Park (population 1,200) obtains water from Crum Elbow Creek. Consumption averages 50,000 gpd and rises to a maximum of 60,000 gpd. Treatment includes chlorination, coagulation, and filtration.

Millerton.--Millerton (population 953) is supplied by two wells, Du 166 and Du 167, and auxiliary springs. Consumption is reported to average 150,000 gpd. Chlorination is the only treatment.

Pawling.--Pawling (population 1,446) is supplied by a surface reservoir with a capacity of 30 million gallons, situated about 4 miles northwest of the village. Consumption is reported to be 150,000 gpd and maximum consumption is 170,000 gpd. Treatment consists of chlorination.

Pine Plains.--The Pine Plains Water Co. supplies water to 90 percent of Pine Plains (population 700) from dug and drilled wells. A dug well, Du 96, is 15 feet deep and is reported to yield 50 gpm. Two drilled wells, Du 97 and Du 680, yield 50 gpm and 220 gpm, respectively, from limestone. Average consumption is 45,000 gpd and the maximum is 60,000 gpd.

Poughkeepsie.--Poughkeepsie (population 41,000) is supplied with water from the Hudson River. Treatment consists of coagulation, settling, filtration, and chlorination. Consumption is reported to be about 5 mgd.

Red Hook.--Water for the village of Red Hook (population about 1,000) is obtained entirely from ground-water sources. Four drilled wells (see Du 101, table 13) supply about 50,000 gpd.

Rhinebeck.--Rhinebeck (population 1,697) is supplied by the Rhinebeck Water Co. from two drilled wells, Du 64 and Du 65. The water is chlorinated. Average consumption is about 200,000 gpd and maximum consumption is 500,000 gpd.

Staatsburg.--Staatsburg (population 600) obtains water from the Staatsburg Water Co. for 500 of its inhabitants. The company obtains the supply from Indian Kill, which is impounded in a reservoir with a capacity of 30 million gallons. Treatment consists of coagulation, filtration, and chlorination. Two auxiliary wells (see Du 71, table 13) supply an average of about 30,000 gpd. The combined system supplies 120,000 gpd.

Tivoli.--Tivoli (population 761) is supplied by six drilled wells (see Du 87 and Du 764, table 13). The system serves about half the population with 20,000 gpd.

Wappingers Falls.--Wappingers Falls (population 3,426) is supplied by two drilled wells, Du 84 and Du 85, situated about a mile northeast of the village. Consumption averages about 120,000 gpd. Water from the wells is softened. A chemical analysis of water from well Du 84 is given in table 10.

Wassaic.--About 75 percent of Wassaic (population 300) is supplied by the Wassaic Water Co. from well Du 95, and two springs, Du 55Sp and Du 56Sp. Consumption is reported to average 18,000 gpd. Treatment consists of chlorination.

Several State and Federal institutions in Dutchess County have developed their own water supplies. The U.S. Veterans Hospital at Castle Point obtains water from two sources. Ground water is drawn from four wells (see well Du 861, table 13). The yield of these wells is inadequate and additional water is obtained from the Hudson River. The Harlem Valley State Hospital at Wingdale obtains enough water from Swamp River to supply 5,000 patients. Wassaic State School obtains water from one of several wells on the site, including Du 793 which reportedly yields 625 gpm.

In some cases privately owned ground-water systems supply relatively large groups of consumers. The Fairview Heights Improvement Co. supplies water from a spring and three wells (see well Du 670, table 13) to about 100 homes and a meatpacking company. Springwood, Inc. obtains water from two wells (see well Du 697) for a group of homes and apartment houses at Hyde Park. Seitz Terrace, in Poughkeepsie, obtains water for about 100 persons from well Du 438.

Table 13.--Records of selected wells in Dutchess County

Location: See section entitled "Explanation of Tables."

Altitude above sea level: Approximate altitude from topographic maps.

Type of well: Drl, drilled; Drv, driven.

Water level: Reported average water level. Plus sign (+) preceding figure indicates level to which water rises above land surface.

Use: Com, commercial; Dom, domestic; Ind, industrial; PS, public supply.

Remarks: gpd, gallons per day; gpm, gallons per minute; (a) water analysis in table 10; (b) log of well in table 12.

Well number	Location	Owner or occupant	Altitude above sea level (feet)	Type of well	Depth below land surface (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing formation	Water level below land surface (feet)	Method of lift	Yield (gallons per minute)	Use	Remarks
Du 1	13Y, 4.3N, 5.8W	Edward Lasher	80	Drl	69	6	44	Hudson River formation	8	Force	20	Farm	
Du 2	13Y, 3.7N, 6.2W	J. M. Coon	190	Drl	75	6	54	do.	25	None	2	None	Yield inadequate. Well destroyed.
Du 4	13Y, 3.2N, 6.0W	W. H. Redder	200	Drl	77	6	50	do.	12	--	35	Dom	
Du 7	13Y, 3.7N, 6.7W	Edward Sturges	220	Drl	210	6	6	do.	20	Suction	20	Dom	
Du 8	13Y, 3.8N, 7.1W	J. Rockefeller	280	Drl	144	6	12	do.	12	do.	40	Dom	
Du 9	13Y, 3.6N, 7.6W	Charles Danegar	220	Drl	112	6	8	do.	17	Jet	3	Farm	No increase in yield below a depth of 70 ft.
Du 12	13Y, 4.0N, 9.0W	Roland Redmond	60	Drl	321	8 to 6	99	do.	34	None	--	None	Well abandoned.
Du 13	13Y, 4.0N, 8.7W	do.	100	Drl	320	10 to 8	43	do.	39	--	4	None	do.
Du 14	13Y, 4.1N, 8.0W	Village of Tivoli	120	Drl	60	10	40	do.	20	Turbine	60	PS	Average consumption is 4,000 gpd. (b).
Du 15	13Y, 4.9N, 8.6W	Albert Sengstack	180	Drl	79	6	23	do.	26	Force	4	Dom	
Du 16	13Y, 5.1N, 8.8W	Howland Davis	160	Drl	202	6	9	do.	--	do.	36	Dom	
Du 18	13Y, 4.8N, 7.3W	G. L. Cole	180	Drl	127	6	62	do.	7	--	20	Farm	
Du 19	13Y, 4.5N, 6.7W	J. Heinshon	180	Drl	67	6	40	do.	14	Force	20	Farm	
Du 20	13Y, 3.2N, 4.1W	George Hubbard	180	Drl	60	6	25	do.	5	Suction	20	Dom	
Du 25	13Y, 1.0N, 6.7W	C. Schaffer	200	Drl	137	6	19	do.	32	None	10	Dom	Yield 0.75 gpm when well was 90 ft deep. (b).
Du 26	13Y, 1.9N, 6.3W	Malcolm Cooper	200	Drl	197	6	57	do.	2	do.	20	Farm	
Du 28	13Y, 3.3N, 7.6W	M. Schweiger	200	Drl	54	6	13	do.	30	Force	5	Dom	
Du 32	13Y, 1.7N, 7.9W	Samuel Robbins	200	Drl	98	6	15	do.	35	do.	12	Farm	
Du 35	13Y, 1.4N, 8.3W	William Blohm	160	Drl	78	6	10	do.	2	Jet	2	Dom	
Du 36	13Y, 1.6N, 8.2W	C. Sottery	160	Drl	132	6	--	do.	17	Suction	5	Dom	Yield 2.5 gpm when well was 27 ft deep. (a).
Du 38	13Y, 0.8N, 8.3W	R. Bolander	160	Drl	74	6	18	do.	--	--	5	Com	
Du 39	13Y, 0.1N, 8.5W	Duncan Watt	180	Drl	97	6	11	do.	13	Suction	8	Dom	
Du 40	13Y, 1.5N, 8.7W	A. C. Zabriskie	120	Drl	620	6	40	do.	60	do.	3	Dom	Listed in U. S. Geol. Survey Water-Supply Paper 102 (see well 147, p. 178).
Du 41	13Y, 0.9N, 6.3W	Ira Barringer	200	Drl	110	6	52	do.	6	--	40	Dom	
Du 42	13Y, 1.9N, 5.4W	H. Fraleigh	200	Drl	84	6	14	do.	12	--	30	Dom	
Du 43	13Y, 2.4N, 7.2W	Percy Sherman	260	Drl	132	6	40	do.	12	--	17	Dom	
Du 44	13Y, 2.3N, 7.6W	Harold Wheeler	240	Drl	88	6	17	do.	3	--	30	Dom	
Du 45	13Y, 2.3N, 4.6W	J. J. Rall	180	Dug	12	48	--	Pleistocene deposit	8	Suction	2	Dom	
Du 46	13Y, 2.8N, 3.6W	G. Osborne	340	Drl	86	6	5	Hudson River formation	24	--	12	Dom	
Du 48	13Y, 1.1N, 3.0W	A. Singher	380	Drl	229	6	--	do.	40	Force	15	Farm	(a).
Du 50	13Y, 1.9N, 2.8W	P. Clemets	360	Drl	62	6	28	do.	--	--	5	Dom	Well supplies two homes.
Du 51	13Y, 2.7N, 2.7W	F. C. Walcott	290	Drl	118	6	15	do.	14	Suction	5	Farm	
Du 53	13Y, 0.5N, 2.6W	John Odak	540	Drl	84	6	15	do.	20	--	4	Dom	
Du 54	13Y, 1.0N, 2.3W	Clinton Gallagher	580	Drl	118	6	6	do.	6	Suction	4	Farm	Yield 2 gpm when well was 40 ft deep.
Du 55	13Y, 1.7N, 1.3W	E. A. Trotter	500	Drl	107	6	85	do.	15	Force	5	Dom	

Table 13.--Records of selected wells in Dutchess County (Continued)

Well number	Location	Owner or occupant	Altitude above sea level (feet)	Type of well	Depth below land surface (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing formation	Water level below land surface (feet)	Method of lift	Yield (gallons per minute)	Use	Remarks
Du 56	13Y, 2.0N, 1.4W	J. Cunningham	600	Drl	75	6	2	Hudson River formation	10	Suction	4	Dom	Yield 2 gpm when well was 40 ft deep.
Du 57	13Y, 1.3N, 1.1W	George Degenhardt	660	Drl	104	6	20	do.	18	--	8	Dom	Yield 2 gpm when well was 20 ft deep. (a).
Du 58	13Y, 1.3N, 0.2W	B. Rollins	380	Drl	150	6	25	do.	20	Suction	3	Farm	
Du 59	13Y, 0.1S, 7.8W	Mrs. Cahalian	240	Drl	80	6	--	do.	30	--	3	Dom	
Du 60	13Y, 0.7S, 6.8W	Dairymen's League Co-op. Assn. Inc.	220	Drl	280	8	--	do.	40	Turbine	60	Com	Average consumption is 12,000 gpd.
Du 61	15Y, 14.2N, 1.9W	Clifford Porter	420	Dug	8	96	7	Pleistocene till	2	Suction	--	Farm	Temperature 55°F, May 1949.
Du 62	15Y, 6.2N, 0.1W	A. McGregor	300	Drl	100	6	14	Stockbridge limestone	22	Force	--	Farm	
Du 63	14Y, 10.7S, 8.8E	Williston Manufacturing Corp.	470	Drl	200	6	14	do.	--	do.	--	Ind	Standby well; spring Du 385p is principal source of supply. (a).
Du 64	14Y, 12.4N, 7.1W	Rhinebeck Water Co.	260	Drl	300	8	--	Hudson River formation	19	Turbine	135	PS	(a) (b).
Du 65	14Y, 12.4N, 7.1W	do.	260	Drl	300	8	--	do.	--	do.	65	PS	
Du 66	14Y, 13.7N, 8.5W	William Hetherington	160	Drl	192	8	15	do.	+5	--	70	Dom	Yield 6.5 gpm when well was 170 ft deep.
Du 67	14Y, 14.2N, 8.0W	L. B. Barber	160	Drl	60	6	10	do.	30	Force	3	Dom	
Du 68	15Y, 10.1N, 9.1W	A. W. Springer	140	Drl	120	6	42	Stockbridge limestone	--	--	--	Dom	
Du 69	15Y, 15.9N, 8.4W	Fairview Improvement Co.	380	Drl	250	6	20	Hudson River formation	24	--	12	Dom	(b).
Du 70	15Y, 14.0N, 6.4W	Aartsen Van Wagenen	200	Drl	113	6	38	do.	--	--	8	Dom	Yield 0.5 gpm when well was 60 ft deep.
Du 71	14Y, 7.2N, 8.2W	Staatsburg Water Co.	240	Drl	305	10 to 8	22	do.	14	Turbine	120	PS	(a).
Du 73	14Y, 6.8S, 10.1E	School District No. 8	500	Drl	97	6	45	Stockbridge limestone	12	--	6	Dom	
Du 74	14Y, 13.2N, 6.9W	Crow Hill Farm Camp	280	Drl	125	6	12	Hudson River formation	12	--	15	Com	Drawdown 28 ft after pumping 15 gpm for 5 hrs.
Du 75	14Y, 15.2N, 7.0W	Sunset Rest	200	Drl	147	6	24	do.	10	--	10	Com	Drawdown 32 ft after pumping 10 gpm for 5 hrs.
Du 76	13Y, 0.4S, 4.7E	Shekomeko Valley Farm	400	Drl	435	10 to 8	68	do.	22	--	9	Farm	Well has been pumped at 9 gpm for 8 hrs.
Du 77	15Y, 12.5N, 6.9W	Henry Siegel	200	Drl	120	6	57	Stockbridge limestone	--	--	15	Dom	(b).
Du 78	15Y, 10.6N, 9.6W	International Business Machines Corp.	100	Drl	400	6	34	do.	--	--	40	Ind	Well has been pumped at 40 gpm for 9.5 hrs. (b).
Du 79	13Y, 7.5S, 4.5E	John Fastert	700	Drl	145	6	53	Hudson River formation	20	--	15	Dom	Drawdown 105 ft after pumping 15 gpm for 2 hrs.
Du 80	13Y, 6.2S, 1.0E	Camp Laurel	600	Drl	200	4½	44	do.	--	--	12	Com	
Du 81	13Y, 3.7S, 9.2E	Silver Acre Farm	1,180	Drl	164	6	13	do.	25	--	6	Farm	Drawdown about 140 ft after pumping 6 gpm for 1 hr.
Du 82	14Y, 15.8S, 5.1E	Interchurch Camp Society, Inc.	740	Drl	52	8 to 6	22	Granite and gneiss, undiff.	18	--	8	Dom	Drawdown 30 ft after pumping 8 gpm for 6 hrs.
Du 83	14Y, 16.0N, 2.4W	Ephraim Feinstein	520	Drl	115	6	3	Hudson River formation	15	--	18	Dom	Drawdown 65 ft after pumping 18 gpm for 7 hrs. (b).
Du 84	15Y, 7.5N, 8.9W	Village of Wappingers Falls	150	Drl	80	16 to 8	--	Pleistocene sand and gravel	--	Centrifugal	160	PS	Average pumpage from wells Du 84 and Du 85 is about 120,000 gpd. (a).
Du 85	15Y, 7.5N, 8.9W	do.	150	Drl	80	16 to 8	--	do.	--	do.	150	PS	Temperature 51°F, October 1949.
Du 86	14Y, 6.7S, 3.5E	R. McKinney	480	Dug	16	30	--	do.	11	None	--	None	Temperature 53°F, June 1949.
Du 87	13Y, 4.4N, 7.9W	Village of Tivoli	140	Drl	36	6	36	do.	13	--	20	PS	Drawdown 17 ft after pumping 20 gpm for 10 hrs. Well originally drilled 4 ft into bedrock; screened between depths of 30 and 36 ft. Two other similar wells at this location. (a) (b).
Du 90	13Y, 15.2S, 10.3E	Wassaic State School	460	Drl	100?	8	--	do.	5	--	--	None	Well finished with screen. Abandoned because of a decrease in yield. (a) (b).
Du 91	14Y, 8.4S, 10.9E	Pawling Girl Scout Camp	620	Drl	255	6	17	Hudson River formation	6	--	5	Dom	Drawdown 119 ft after pumping 5 gpm for 2 hrs.
Du 92	14Y, 6.8N, 0.9W	New York State Dept. of Public Works	482	Drl	199	6	43	Stockbridge limestone	--	Jet	15	Dom	

Table 13.--Records of selected wells in Dutchess County (Continued)

Well number	Location	Owner or occupant	Altitude above sea level (feet)	Type of well	Depth below land surface (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing formation	Water level below land surface (feet)	Method of lift	Yield (gallons per minute)	Use	Remarks
Du 94	13Y, 14.4S, 4.4E	Town of Millbrook	660	Dug	20	48	--	Pleistocene gravel	--	Centrifugal	--	PS	Well draws water through bottom and from 2 lines of open-jointed tile 18 inches in diameter. One line extends 75 ft. to the east and the other extends 100 feet to the north. Each tile is surrounded by a layer of gravel.
Du 95	13Y, 13.6S, 10.0E	Wassaic Water Co.	460	Dug	15	60	--	Pleistocene sand and gravel	7	Suction	26	PS	Well dry in summer.
Du 96	13Y, 1.9S, 5.0E	Pine Plains Water Co.	480	Dug	15	108	--	do.	--	Centrifugal	50	PS	
Du 97	13Y, 1.8S, 5.2E	do.	560	Drl	375	8	50+	Stockbridge limestone	30	Force	50	PS	(a).
Du 98	13Y, 5.5S, 1.6E	M. M. Leavitt	500	Drl	300	--	--	Hudson River formation	--	do.	55	Dom	Well flowed when drilled. Supplies swimming pool.
Du 99	13Y, 10.8S, 10.1E	Amenia Water Co.	540	Drl	70	8	--	Pleistocene gravel	+1	Turbine	180	PS	Drawdown 9 ft after pumping 130 gpm for 8 hrs. Average consumption is 100,000 gpd. (a) (b).
Du 100	13Y, 10.8S, 10.2E	do.	600	Drl	46	8	--	do.	+1	do.	100	PS	Well is auxiliary supply. Temperature 51°F, June 1946. (a).
Du 101	14Y, 16.7N, 6.3W	Village of Red Hook	227	Drl	277	10	40	Hudson River formation	22	do.	100	PS	Drawdown 80 ft after pumping 100 gpm for 24 hrs. Yield diminished considerably during dry period in 1949. Two other similar wells at this location. (a).
Du 104	14Y, 1.3N, 9.6W	F. D. Roosevelt National Historic Site	178	Drl	400	6	83	do.	--	--	15	Dom	(a) (b).
Du 105	14Y, 1.3N, 9.6W	do.	180	Drl	212	6	80	do.	--	Turbine	10	Dom	Well has been pumped at 10 gpm for 24 hrs.
Du 106	15Y, 15.7N, 8.7W	Schatz Manufacturing Co.	260	Drl	555	6	23	do.	--	Force	11	Ind	Temperature 54°F, July 1949.
Du 107	14Y, 16.1N, 3.4W	John Juranic	520	Drl	60	6	4	do.	20	Jet	12	Dom	
Du 109	14Y, 15.3N, 3.3W	F. W. Battenfeld & Son	380	Drl	125	6	20	do.	30	do.	3	Dom	
Du 110	14Y, 14.4N, 7.5W	Joseph Chard	163	Drl	60	6	16	do.	0.5	Suction	20	Dom	Well flows during periods of heavy precipitation. Temperature 51°F, May 1948.
Du 111	14Y, 14.4N, 7.6W	Rhinebeck Block Co.	160	Drl	100	6	18	do.	9	Jet	10	Ind	
Du 112	14Y, 13.9N, 5.4W	M. K. Weaver	320	Drv	18	1¼	--	Pleistocene gravel	--	Suction	3	Dom	Temperature 50°F, May 1948. Average consumption is 500 gpd.
Du 114	14Y, 13.6N, 5.2W	Rhinebeck School Dist. 9	320	Drl	90	6	10	Hudson River formation	--	do.	3	Dom	Temperature 50°F, May 1948.
Du 115	14Y, 14.3N, 3.2W	Cyrus McCormick	680	Drl	158	6	--	do.	--	Force	--	Dom	
Du 116	14Y, 14.2N, 2.2W	W. F. Pink	435	Drl	50	6	10	do.	--	do.	--	Dom	Temperature 50°F, May 1948.
Du 117	14Y, 10.5N, 6.2W	W. Ackert	380	Drl	175	6	8	do.	10	--	3	Dom	
Du 121	14Y, 6.5N, 7.7W	R. Neilson	280	Drl	105	6	11	do.	14	Jet	8	Dom	
Du 122	14Y, 5.4N, 7.9W	A. T. Haines	280	Dug	20	36	--	Pleistocene till	16	Suction	1	Farm	Average consumption is 1,000 gpd.
Du 124	14Y, 4.6N, 8.1W	Strever's Garage	250	Drv	18	1¼	--	Pleistocene sand and gravel	--	do.	3	Com	Average consumption exceeds 500 gpd.
Du 126	14Y, 3.6N, 8.5W	Howard Velie	240	Drv	15	1¼	--	do.	--	do.	2	Dom	
Du 127	14Y, 3.0N, 8.6W	G. Wrenn	240	Drl	90	6	21	Hudson River formation	18	do.	--	Dom	
Du 128	14Y, 16.0N, 7.1W	Edwin DuBois	200	Drl	129	6	90	do.	14	do.	5	Dom	(b).
Du 129	14Y, 7.1S, 2.5E	R. McKinney	480	Drl	65	6	2	do.	18	do.	--	Farm	
Du 130	13Y, 0.1S, 1.0W	R. Campbell	670	Drl	45	6	12	do.	6	--	3	Dom	
Du 131	14Y, 16.4N, 7.6W	Louis Wasner	200	Drl	73	6	24	do.	10	Suction	15	Dom	
Du 132	14Y, 16.3N, 7.6W	Russell Leavy	200	Drl	93	6	--	Pleistocene gravel	--	--	20	Dom	
Du 134	14Y, 15.3N, 7.8W	Ralph Pitcher	180	Drl	156	10 to 8	5	Hudson River formation	--	--	30	Com	Average consumption is 5,000 to 10,000 gpd.
Du 135	14Y, 15.2N, 7.6W	Elmer Wilbur	180	Drl	110	6	60	do.	--	Force	50	Farm	Well supplies water for irrigation.
Du 136	14Y, 15.4N, 5.2W	William Brandt	405	Drl	160	6	21	do.	--	--	2	Dom	
Du 137	14Y, 13.1N, 9.4W	Vincent Astor	150	Drl	60	6	10	do.	--	--	5	Dom	

Table 13.--Records of selected wells in Dutchess County (Continued)

Well Number	Location	Owner or occupant	Altitude above sea level (feet)	Type of well	Depth below land surface (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing formation	Water level below land surface (feet)	Method of lift	Yield (gallons per minute)	Use	Remarks
Du 198	14Y, 3.5N, 3.8W	Joseph Frankel	340	Drl	101	6	--	Hudson River formation	--	Suction	--	Dom	
Du 200	14Y, 4.0N, 4.8W	Andrew Ward	440	Drl	110	6	0	do.	--	do.	--	Farm	Well flows.
Du 201	14Y, 4.5N, 7.0W	W. H. Anson	440	Drl	57	6	5	do.	--	Force	3	Dom	Water has relatively high iron content.
Du 203	14Y, 3.3N, 6.2W	Harvey Wood	320	Dug	39	48	39	Pleistocene till	22	--	--	Dom	
Du 204	14Y, 3.4N, 7.5W	Mauro Cacciapaglia	290	Dug	17	48	17	do.	8	Suction	--	Dom	
Du 205	14Y, 6.8N, 1.3W	T. Nathanson	400	Drl	130	6	12	Hudson River formation	--	--	15	Dom	Water contains hydrogen sulfide.
Du 206	14Y, 4.1N, 1.3W	M. Cahill	275	Drl	210	6	60	do.	--	Suction	5	Dom	
Du 207	14Y, 4.2N, 1.1W	V. J. Biggio	275	Drl	147	6	25	do.	25	Force	8	Dom	Temperature 51°F, August 1948.
Du 208	14Y, 6.0N, 0.7W	B. C. Tousey	300	Drl	80	6	0	do.	23	Suction	3	Dom	
Du 209	14Y, 6.6N, 8.8W	Paul Reincke	180	Drl	50	6	0	do.	--	do.	--	Dom	
Du 211	14Y, 6.5N, 6.4W	Frank Garzoff	400	Drl	79	6	0	do.	--	Jet	6	Dom	Well supplies 30 people.
Du 215	15Y, 1.0N, 5.9W	C. Haufman	560	Drl	780	6 to 5	404	Unknown	--	Force	25	Dom	Water contains hydrogen sulfide. (a) (b).
Du 216	14Y, 0.8N, 6.3W	John Hall	400	Drl	86	6	10	Hudson River formation	20	Suction	8	Dom	
Du 217	14Y, 1.9N, 8.4W	J. S. Gilbert	240	Dug	20	48	--	Pleistocene gravel	--	--	--	--	Temperature 50°F, July 1948.
Du 218	14Y, 1.7N, 8.3W	C. F. Edgerton	240	Drl	84	6	6	Hudson River formation	16	Jet	7	Dom	
Du 219	14Y, 1.5N, 5.8W	Sarah Denman	420	Drl	172	6	10	do.	20	Suction	18	Farm	Water contains hydrogen sulfide.
Du 220	14Y, 1.5N, 4.4W	Robert Smith Estate	360	Drl	152	6	0	do.	20	Force	--	Farm	
Du 221	14Y, 2.0N, 5.1W	Plankenhorn Bros.	445	Drl	80	6	--	do.	20	do.	18	Farm	
Du 222	14Y, 0.1N, 3.2W	Veterans Building	260	Drl	--	--	10	do.	--	Lift	--	Com	
Du 224	14Y, 1.1N, 1.5W	J. W. Morgan	440	Drl	146	6	15	do.	14	Jet	5	Dom	(b).
Du 225	14Y, 2.2N, 0.1W	A. Meyer	330	Drl	132	6	--	Pleistocene sand	16	do.	5	Com	Water obtained at depth of 60 to 70 ft.
Du 226	14Y, 2.3N, 0.2W	Dutchess Turkey Farm	340	Drl	280	6	--	Pleistocene gravel	--	Force	20+	Farm	Temperature 53°F, July 1948. (a).
Du 228	14Y, 3.9N, 0.2W	H. W. Hallock	320	Drl	97	6	--	do.	18	Suction	10+	Farm	
Du 230	14Y, 1.7N, 2.3W	W. H. Hackey and Son	440	Drl	300	6	8	Hudson River formation	--	None	5	None	Well abandoned; yield inadequate.
Du 234	14Y, 1.4N, 3.9W	F. Stoutenburgh	260	Drl	80	6	--	do.	--	Suction	4	Com	
Du 235	14Y, 5.3N, 6.7W	D. Barrett	340	Drl	206	6	4	do.	--	--	--	Dom	Well flows.
Du 236	14Y, 1.5N, 6.9W	C. Osika	320	Drl	100	6	12	do.	20	Jet	8	Dom	Well has been pumped at 8 gpm for 20 hrs.
Du 237	15Y, 14.6N, 1.4W	L. Frankel	520	Drl	90	6	14	do.	13	Suction	--	Dom	
Du 238	13Y, 2.8S, 4.5E	Briarcliff Farms	480	Dug	20	480	--	Pleistocene gravel	10	Force	--	Farm	
Du 239	13Y, 3.2S, 5.0E	do.	480	Drl	423	13 to 8	5	Stockbridge limestone	16	--	166	Farm	Yield 80 gpm when well was 65 ft deep and 102 gpm when well was 315 ft deep.
Du 240	13Y, 6.0S, 4.0E	J. B. Creswell	475	Drl	300	6	--	do.	20	Lift	5	Dom	Water has relatively high iron content.
Du 241	13Y, 6.4S, 2.1E	Ralph Wright	460	Drl	86	6	6	do.	10	Jet	4	Farm	
Du 244	13Y, 7.8S, 2.6E	Charles Ward	380	Drl	153	6	90	do.	14	Suction	10	Dom	
Du 245	13Y, 8.3S, 3.4E	Joseph Gerbovits	460	Drl	112	6	20	do.	--	Jet	--	Dom	
Du 246	13Y, 8.8S, 2.7E	Albert Sauter	360	Drl	72	6	30	do.	20	Suction	40	Com	
Du 247	13Y, 9.1S, 2.0E	Dykeman's Garage	340	Drl	39	6	--	Pleistocene gravel	22	do.	18	Com	No drawdown observed after pumping 18 gpm for 1 hr, (b).
Du 249	13Y, 9.8S, 1.7E	E. DeVine	320	Drl	166	6	8	Hudson River formation	6	Jet	2	Dom	No increase in yield below a depth of 100 ft.
Du 250	13Y, 1.5S, 5.2E	Borden's Farm Products	475	Drl	108	10 to 8	98	Stockbridge limestone	20	Force	80	Com	Drawdown 85 ft after pumping 80 gpm for 24 hrs. Temperature 49°F, July 1948. (a).

Table 13.--Records of selected wells in Dutchess County (Continued)

Well number	Location	Owner or occupant	Altitude above sea level (feet)	Type of well	Depth below land surface (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing formation	Water level below land surface (feet)	Method of lift	Yield (gallons per minute)	Use	Remarks
Du 451	15Y, 0.1N, 3.8W	Omin Farms Inc.	440	Dug	24	42	24	Pleistocene till	1	Suction	--	Dom	Well is abandoned.
Du 452	15Y, 6.1N, 10.3W	James Coon	180	Drl	130	6	14	Stockbridge limestone	31	Force	1	Dom	Yield 0.25 gpm when well was 78 ft deep. (b).
Du 453	15Y, 5.0N, 9.2W	G. R. Roarabaugh	180	Dug	21	54	--	Pleistocene till	12	Suction	4	Dom	
Du 455	15Y, 3.2N, 8.6W	H. Restless	360	Drl	176	6	131	Hudson River formation	34	Force	5	Dom	(b).
Du 456	15Y, 15.4N, 2.9W	Peter Majuk	380	Dug	27	48	27	Pleistocene till	8	Suction	--	Dom	
Du 457	15Y, 7.2N, 9.8W	Children's Aid Society Camp	120	Drl	490	8	10	Stockbridge limestone	24	Centrifugal	20	Com	Yield 20 gpm when well was 120 ft deep. (a).
Du 458	15Y, 8.3N, 10.2W	New York Trap Rock Co.	10	Drl	30	9¼	0	do.	3	do.	75	Ind	Drawdown 12 ft after pumping 75 gpm for 144 hrs.
Du 459	15Y, 9.2N, 10.2W	E. Kalfus	20	Drl	72	6	7	do.	17	Suction	7	Dom	
Du 461	15Y, 16.0N, 4.3W	W. Drewes	280	Drl	128	6	3	Hudson River formation	23	Force	7	Farm	
Du 462	15Y, 14.8N, 4.9W	Grace Robb	380	Drl	86	6	23	do.	--	Suction	12	Farm	
Du 463	15Y, 14.4N, 4.6W	S. Doman	380	Drl	153	6	5	do.	27	Jet	8	Farm	
Du 464	15Y, 14.7N, 4.0W	A. Wordworth	460	Drl	165	6	9	do.	29	do.	10	Dom	
Du 465	15Y, 1.2N, 3.2W	H. Kouri	480	Drl	230	6	--	Pleistocene sand and gravel	--	Force	18	Dom	Drawdown 20 ft after pumping 18 gpm for 88 hrs.
Du 466	15Y, 1.6N, 9.7W	J. Veling	260	Drl	370	6	25	Hudson River formation	28	Jet	1.5	Dom	Yield 1.5 gpm when well was 50 ft deep. (b).
Du 467	15Y, 9.2N, 8.8W	Hogan Sand and Gravel Co.	100	Drl	417	6	53	Stockbridge limestone	42	--	8	Com	Yield 6 gpm when well was 100 ft deep.
Du 468	15Y, 15.7N, 9.3W	Fairview Improvement Co.	120	Drl	200	8	33	Hudson River formation	15	Turbine	45	PS	Well abandoned.
Du 469	15Y, 15.5N, 9.2W	do.	120	Drl	100	6	3	do.	7	do.	48	PS	do.
Du 470	13Y, 15.2S, 10.3E	Wassaic State School	500	Drl	96	20 to 12	--	Pleistocene gravel	2	do.	600	Dom	Drawdown 12 ft after pumping 600 gpm for 24 hrs. (b).
Du 471	15Y, 13.7N, 8.2W	Dairymen's League	200	Drl	460	4	--	Hudson River formation	--	None	40	None	Water contains hydrogen sulfide. Temperature 49°F, May 1949.
Du 472	15Y, 13.9N, 8.3W	General Ice Cream Co.	200	Drl	125	6	--	Pleistocene gravel	8	Centrifugal	200	Ind	Drawdown 12 ft after pumping 200 gpm for 24+ hrs. Temperature 54°F, May 1949.
Du 473	15Y, 15.1N, 8.2W	Fitchett Bros. Lakeview Dairy	220	Drl	78	6	--	Hudson River formation	10	do.	70	Com	Drawdown 29 ft after pumping 25 gpm for 10 hrs. Temperature 51°F, May 1949.
Du 474	15Y, 15.9W, 8.1W	Violet Avenue School	300	Drl	160	8	9	do.	34	Turbine	25	Dom	(a).
Du 476	15Y, 2.9N, 5.3W	Wiccopee Grange	220	Drl	85	6	--	Pleistocene sand and gravel	+12	None	--	Dom	Well flows at 0.5 gpm; original flow 3 gpm. Temperature 50°F, May 1949.
Du 477	15Y, 2.4N, 5.1W	Charles Anderson	250	Drl	87	6	9	Stockbridge limestone?	10	Suction	60	Dom	Water contains hydrogen sulfide.
Du 478	15Y, 3.9N, 2.7W	G. H. Morris	260	Dug	23	48	--	Pleistocene sand	5	do.	--	Dom	
Du 479	15Y, 16.6N, 7.7W	A. Hobart	240	Drl	80	6	12	Hudson River formation	9	do.	7	Dom	Yield 3 gpm when well was 30 ft deep.
Du 480	15Y, 17.0N, 7.0W	F. Taylor	240	Drl	112	6	8	do.	17	do.	5	Dom	
Du 481	15Y, 15.5N, 6.4W	George Fitchett	180	Drl	311	6	24	do.	41	Force	8	Farm	Average consumption 6,000 gpd.
Du 482	15Y, 1.5N, 10.3W	Matteawan State Hospital	260	Dug	18	48	--	Pleistocene sand	7	Suction	--	None	Temperature 50°F, May 1949.
Du 484	15Y, 5.1N, 10.4W	F. C. Hoyt	120	Drl	210	6	--	Hudson River formation	41	Force	--	Dom	Well supplies two houses.
Du 485	15Y, 3.7N, 11.6W	Chelsea Yacht Club	5	Drl	52	6	35	do.	20	Suction	20	Dom	Well used only in summer. (a).

MAP OF DUTCHESS COUNTY, NEW YORK

SHOWING LOCATION OF SELECTED WELLS AND SPRINGS

SCALE

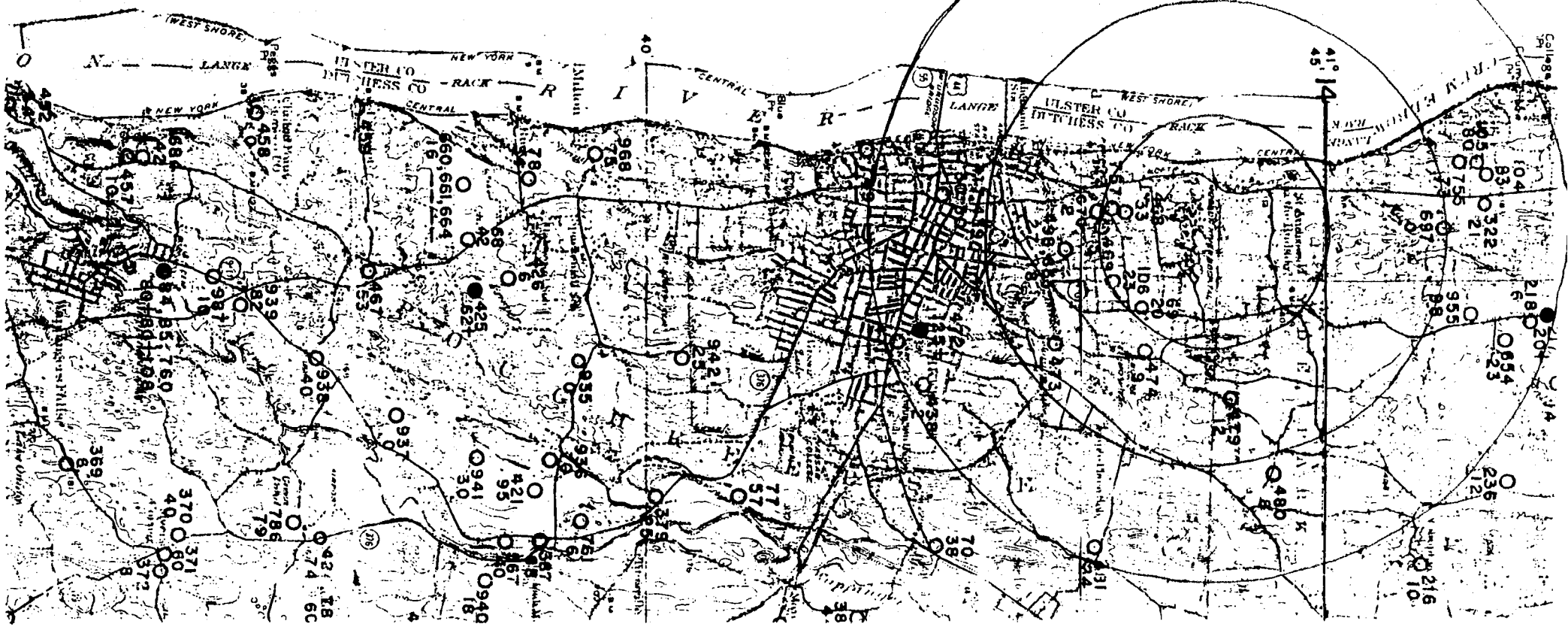
1 0 1 2 Miles

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

EXPLANATION

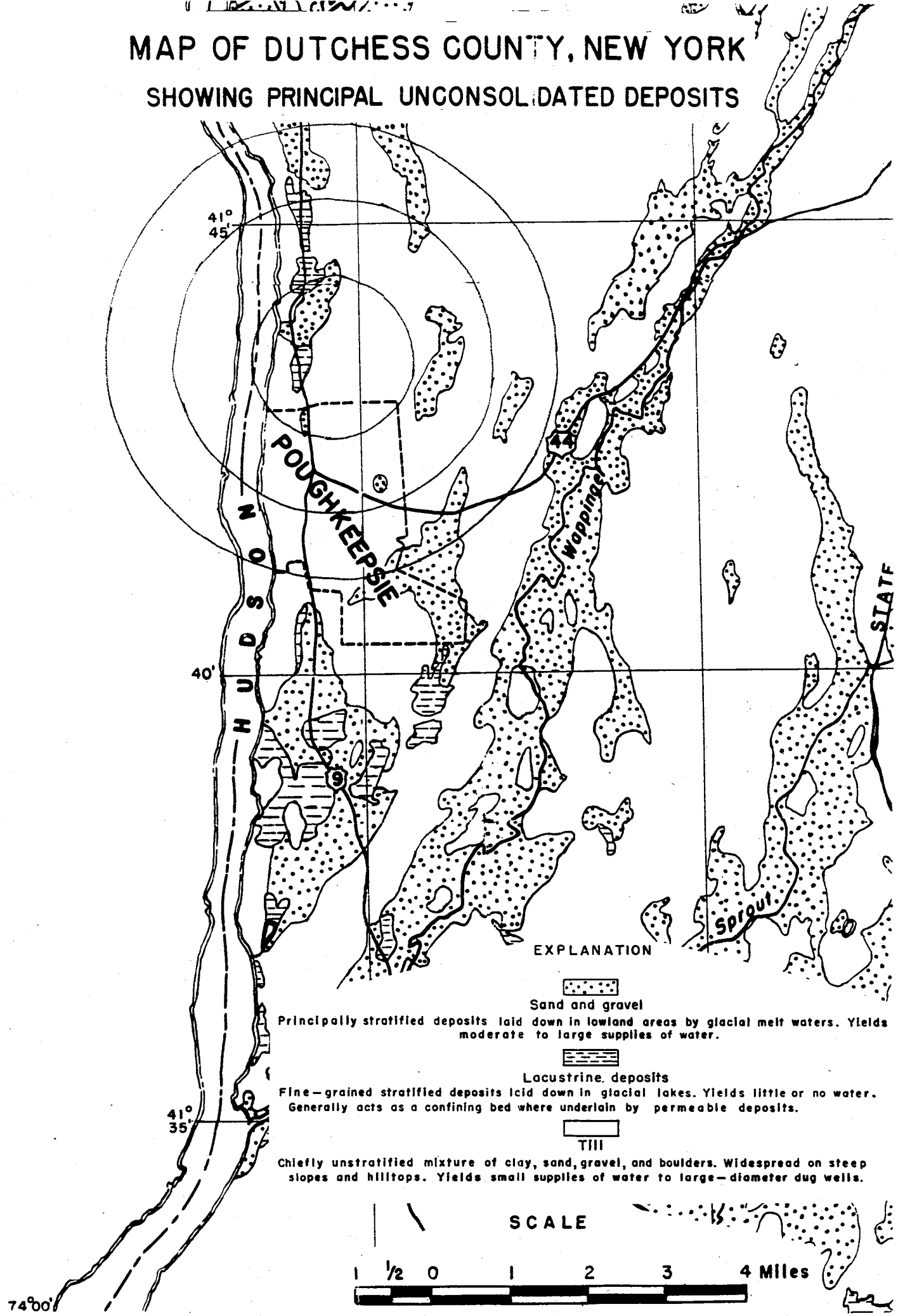
SPRINGS	WELLS	WATER-BEARING MATERIAL
♀	○	Bedrock
♀	●	Unconsolidated deposits
♀	◑	Bedrock and unconsolidated deposits
♀	⊙	Unknown

Symbol indicates type of water-bearing material. Upper figure is well or spring number with prefix "Du" omitted; suffix "Sp" also omitted in spring numbers. Lower figure is thickness, in feet, of unconsolidated deposits. Plus sign (+) following lower figure indicates that thickness of unconsolidated deposits is unknown but is greater than figure given.



MAP OF DUTCHESS COUNTY, NEW YORK

SHOWING PRINCIPAL UNCONSOLIDATED DEPOSITS



EXPLANATION

Sand and gravel

Principally stratified deposits laid down in lowland areas by glacial melt waters. Yields moderate to large supplies of water.

Lacustrine deposits

Fine-grained stratified deposits laid down in glacial lakes. Yields little or no water. Generally acts as a confining bed where underlain by permeable deposits.

Till

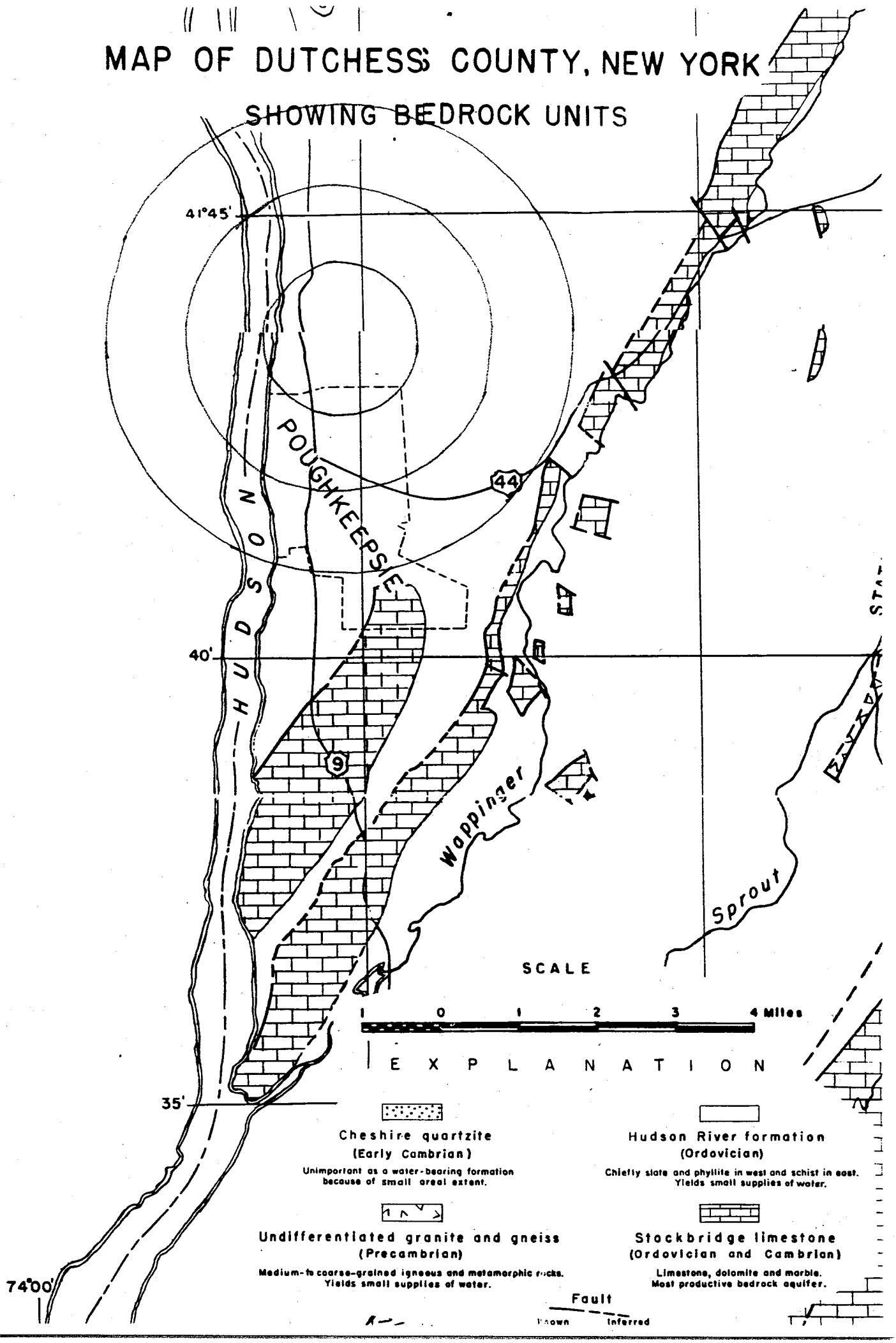
Chiefly unstratified mixture of clay, sand, gravel, and boulders. Widespread on steep slopes and hilltops. Yields small supplies of water to large-diameter dug wells.

SCALE

1 ½ 0 1 2 3 4 Miles

MAP OF DUTCHESS COUNTY, NEW YORK

SHOWING BEDROCK UNITS



REFERENCE NO. 5

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63 NY53 $I	10/03/88	1500

DISTRIBUTION: Hudson River Psych. Center

BETWEEN:	OF:	PHONE:
Kathy Hattala	NYSDEC	(914) 255-

AND: A. Culmone (NUS)

DISCUSSION:

Hudson River - tidal at Poughkeepsie?
yes, tidal to Albany - 3.1'
2' per sec current velocity

Hudson River - fisheries info for this area
Endangered - Short nosed sturgeon
wintering area
Commercial fisheries - Shad - Spring
Drift gill net - Spring
for Atlantic sturgeon

Sport fishery for Striped bass
Blue Crabs - Haverstraw area can
migrate as far as Poughkeepsie

ACTION ITEMS:

REFERENCE NO. 6

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH

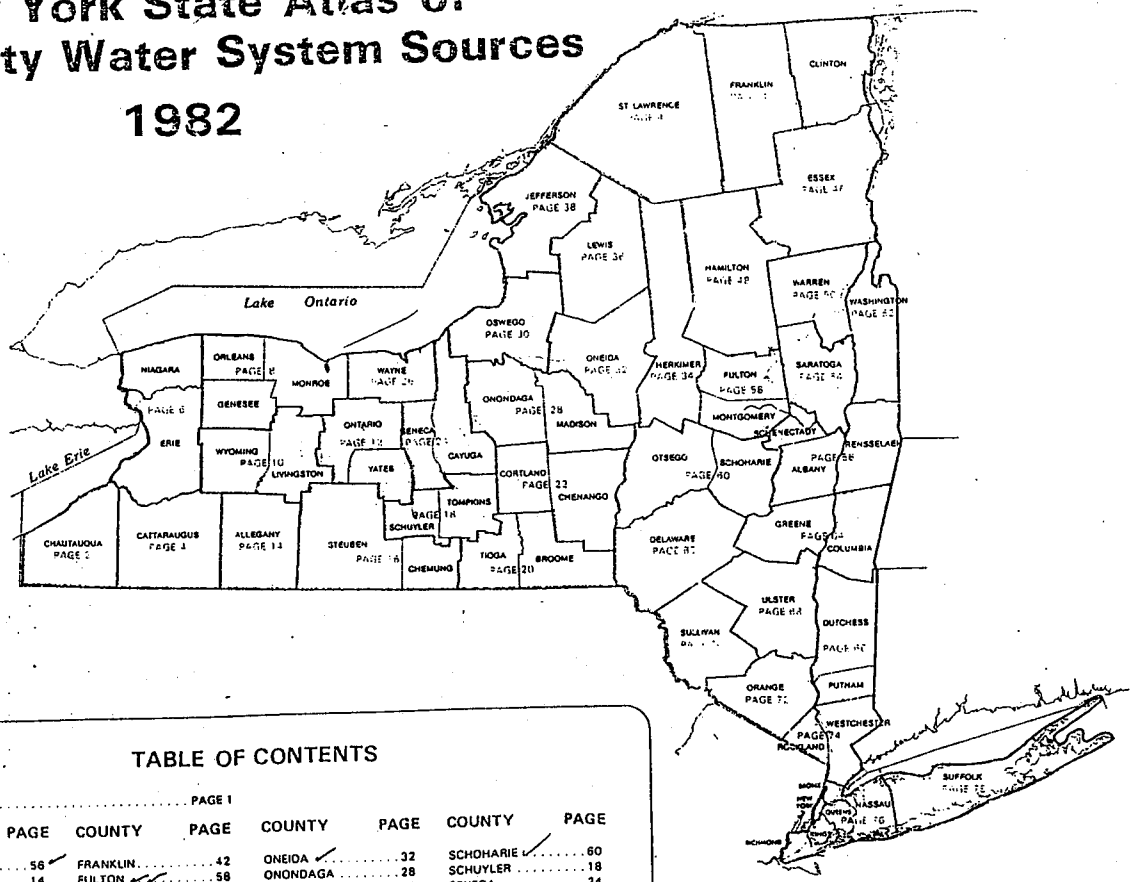


TABLE OF CONTENTS

FORWARD ..... PAGE 1

COUNTY	PAGE	COUNTY	PAGE	COUNTY	PAGE	COUNTY	PAGE
ALBANY	58	FRANKLIN	42	ONEIDA	32	SCHOHARIE	60
ALLEGANY	14	FULTON	58	ONONDAGA	28	SCHUYLER	18
BRONX	76	GENESEE	8	ONTARIO	12	SENECA	24
BROOME	20	GREENE	64	ORANGE	72	STEUBEN	16
CATTARAUGUS	4	HAMILTON	48	ORLEANS	8	SUFFOLK	78
CAYUGA	24	HERKIMER	34	OSWEGO	30	SULLIVAN	70
CHAUTAUQUA	2	JEFFERSON	38	OTSEGO	60	TIOGA	20
CHEMUNG	16	KINGS	76	PUTNAM	66	TOMPKINS	18
CHENANGO	22	LEWIS	36	QUEENS	76	ULSTER	68
CLINTON	44	LIVINGSTON	10	RENSSELAER	56	WARREN	50
COLUMBIA	64	MADISON	28	RICHMOND	76	WASHINGTON	52
CORTLAND	22	MONROE	8	ROCKLAND	74	WAYNE	26
DELAWARE	62	MONTGOMERY	58	ST. LAWRENCE	40	WESTCHESTER	74
DUTCHESS	66	NASSAU	76	SARATOGA	54	WYOMING	10
ERIE	6	NEW YORK	76	SCHENECTADY	56	YATES	12
ESSEX	46	NIAGARA	6				

LEGEND

BOUNDARIES AND PLACES

International
State
County
Town
Indian Reservation
City
Village
Unincorporated Place
Federal Reservation
Built-up Area (Over 25,000 population including any contiguous city or village)

CLASSIFICATION OF POPULATED PLACES

100,000 or more — YONKERS
50,000 to 100,000 — Levittown
12,500 to 50,000 — Poughkeepsie
2,500 to 12,500 — Hampton Bays
250 to 2,500 — Bo-ceville
250 or less — Corbit

TRANSPORTATION

Highways
Divided Highways
Full Control of Access
Partial or No Control of Access
Undivided Highway
Interchange
Touring Route (State, U.S., Interstate) or State Parkway
Touring Route Markers
State; U.S.; Interstate

Railroads
Operating Line
Service Discontinued
Operator — DELAWARE AND HUDSON
Owner (If Other than Operator) — (PENN CENTRAL)
Company Having Trackage Rights — (CONRAIL)

Airports (Open to the Public, Military)
Runway under 4000'
Runway over 4000'

Rest Areas
Food, Gas, Rest Rooms
Rest Rooms
Gas, Rest Rooms
Parking Only

RECREATION FACILITIES

State or National Recreation Area
State Campground
State Boat Launching Site
State Canal Park
State Fish Hatchery
Other State Recreation Site

DUTCHESS COUNTY

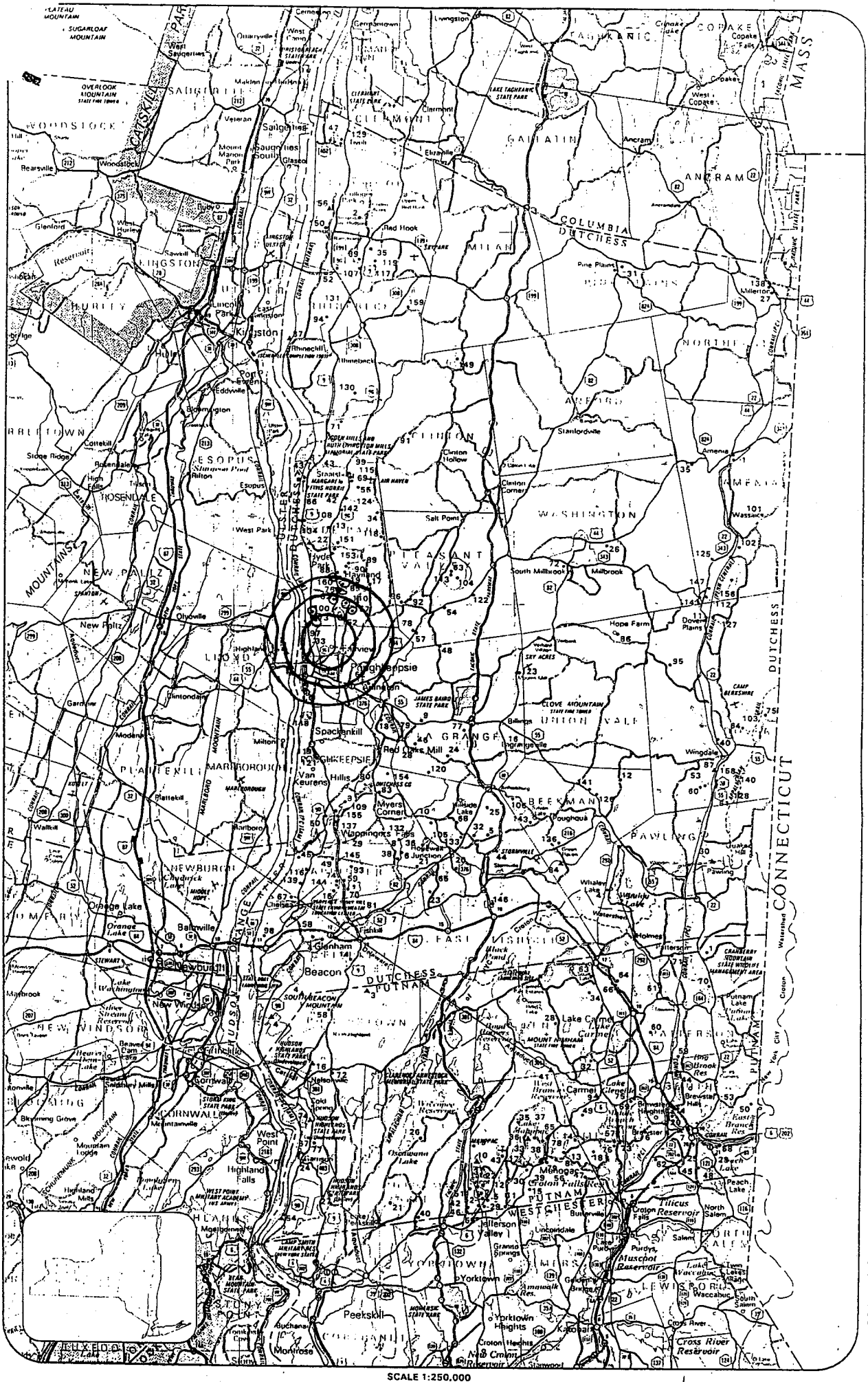
ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Amenia Water District #1	1000	Wells
2	Annandale Water Company	1008	Wells
3	Atlas Water Company	1300	Wells
4	Beacon City (See also No 3 Putnam Co)	5000	Mt. Beacon & Melzinga Reservoirs, Wells
5	Beekman Country Club	300	Wells
6	Brettview Acres Water Company	920	Wells
7	Brinkerhoff Water Company	3500	Wells
8	Central Wappinger Improvement Area	1800	Wells
9	Deerfield Estates Water District	900	Wells
10	Dogwood Knolls	600	Wells
11	Dover Plains Water Company	1500	Wells
12	Dover Ridge Estates	60	Wells
13	Dutchess Estates Inc	700	Wells
14	Fishkill Village	6000	Wells
15	Fleetwood Manor Water District	850	Wells
16	Grandview Water District	160	Wells
17	Greenfield Water District	1250	Wells
18	Greenmeadow Park Water Company	350	Wells
19	Harbourd Hills Water Company Inc	900	Wells
20	Hopegard, Inc	275	Wells
21	Hopewell Services Inc	900	Wells
22	Hyde Park Fire & Water District	4000	Crum Elbow Creek, Wells
23	Kensington Park Water Company	65	Wells
24	La Grange Club Estates	120	Wells (Infiltration Gallery)
25	Little Switzerland Water Company	600	Wells
26	Millbrook Village	1735	Wells
27	Millerton Village	1600	Wells
28	Noxon Knolls Water District	250	Wells
29	Oakwood Knolls	310	Wells
30	Pawling Village	2000	Pawling Reservoir, Wells
31	Pine Plains Water Company	1060	Wells
32	Pinewood Knolls	265	Wells
33	Poughkeepsie City	30000	Hudson River
34	Quaker Hill Estates Water District	424	Wells
35	Red Hook Village	2000	Wells
36	Revere Park Water Company	560	Wells
37	Rhinebeck Village	4200	Hudson River
38	Rockingham Farms	3000	Wells
39	Rokeby Homes, Inc	184	Wells
40	Schreiber Water Works	110	Wells
41	Shorehaven Civic Association	300	Wells
42	South Cross Road Water Company Inc	572	Wells (Infiltration Gallery)
43	Staatsburgh Water Company	1072	Indian Kill Reservoir, Wells
44	Taconic Estates	185	Wells
45	Tall Trees	250	Wells
46	Titusville Water District	700	Wells
47	Tivoli Village	713	Wells
48	Valley Dale Water Company	380	Wells
49	Wappinger Park Homes	400	Wells
50	Wappingers Falls Village	5300	Wells
51	Willow Lake Water Company	126	Wells
52	Windermere Highlands	375	Wells
Non-Municipal Community			
53	Angels Trailer Park	40	Wells
54	Arbor Arms Apartments	50	Wells
55	Arvans Mobile Court #1	72	Wells
56	Bard College	NA	Sawkill Creek
57	Beckwith Trailer Park	26	Wells
58	BGB Mobile Home Park	137	Wells
59	Birchwood Mobile Home Park	42	Wells
60	Brooks Mobile Home Park	25	Wells
61	Cannons Trailer Park	16	Wells
62	Canterbury Garden Apartments	600	Wells
63	Cedar Hollow Mobile Home Park	90	Wells
64	Cedar Lane Mobile Home Park #2	28	Wells
65	Charlotte Grove Mobile Trailer Park	110	Wells
66	Chateau Hyde Park Home for Adults	120	Wells
67	Chelsea Ridge Apartments	1800	Wells
68	Clove Branch Apartments	19	Wells
69	Colonial Maples Trailer Park	30	Wells
70	Cooper Road Trailer Park	35	Wells
71	Cove View Apartments	48	Wells
72	Daytop Village	70	Wells
73	Dutch Garden Apartments	350	Wells
74	Dutchess Trailer Park	30	Wells
75	East Mountain Trailer Park	28	Wells
76	Eleanor Roosevelt	200	Wells
77	Elliott Apartments	36	Wells
78	Ennis Mobile Home Park	92	Wells
79	Feller Trailer Court	60	Wells
80	Fieldside Apartments	50	Wells
81	Fishkill Park Apartments	240	Wells
82	Frantoni Villas	50	Wells
83	Gerhard P Stoutzel	30	Wells
84	Green Haven Correctional Facility	NA	Reservoir
85	Green Meadow Trailer Court	40	Wells
86	Greer School	300	Wells
87	Harlem Valley Psychiatric Center	1200	Swamp River
88	Haviland Apartments	100	Wells
89	Haviland Mobile Home Park #1	44	Wells
90	Haviland Mobile Home Park #2	29	Wells

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Non-Municipal Community			
91	Hi Vu	50	Wells
92	Hickory Hill Mobile Home Park	250	Wells
93	Hidden Hollow Apartments	850	Wells
94	Hidden Valley Mobile Court	30	Wells
95	High Meadows Park Inc	196	Wells
96	Hoffman Trailer Park	26	Wells
97	Hudson River Psychiatric Center	2000	Hudson River
98	Hudson View Water Works	1800	Wells
99	Hyde Park Mobile Manor Estates	NA	Wells
100	Hyde Park Terrace Apartments	70	Wells
101	Kent Hollow Apartments	24	Wells
102	Kommel Trailer Park	20	Wells
103	Lake Ellis Mobile Home Park	81	Wells
104	Lake Lodges Apartments	24	Wells
105	Lake Walton Park	62	Wells
106	Lakeview Mobile Home Park	NA	Wells
107	Lamplight Court Mobile Estates	23	Wells
108	Ledges Apartments	460	Wells
109	Little Falls Trailer Park	163	Wells
110	M and D Mobile Home Park	108	Wells
111	Maple Lane Trailer Park	150	Wells
112	May Lane Mobile Park	30	Wells
113	Maynards Mobile Manor	101	Wells
114	McCartha's Trailer Park	42	Wells
115	Mobile Home Gardens	30	Wells
116	Montclair Townhouse Apartments	660	Wells
117	Mountain View Mobile Estates	55	Wells
118	Northeastern Conference Nursing Home	120	Wells
119	Northern Dutchess Mobile Home Park	31	Wells
120	Odells Trailer Park	19	Wells
121	Osborne Trailer Park	15	Wells
122	Palmer Apartments	27	Wells
123	Parkway Apartments	16	Wells
124	Partridge Hill Apartments	150	Wells
125	Phillips Trailer Park	45	Wells
126	Pine Grove Mobile Home Park	39	Wells
127	Powell Road Mobile Park	115	Wells
128	Ramsey's Trailer Park	28	Wells
129	Red Church Trailer Park	12	Wells
130	Rhinebeck Country Village	100	Wells
131	Rhinebeck Mobile Court	120	Wells
132	Roberts Running Creek Trailer Park	88	Wells
133	Route 82 Trailer Park	26	Wells
134	Royal Crest Apartments	158	Wells
135	Sabo Trailer Park	45	Wells
136	Saith Mobile Home Park	26	Wells
137	Scenic Apartments	432	Wells
138	Scenic View Mobile Home Park	27	Wells
139	Shady Acres Trailer Park	26	Wells
140	Shady Homes Trailer Park	42	Wells
141	Shady Lane Trailer Park	13	Wells
142	Simpson Mobile Home Site	27	Wells
143	Springhill Mobile Home Park	NA	Wells
144	Sunset Farms Mobile Home Park	35	Wells
145	Sunset Knolls	50	Wells
146	Taconic Motor Lodge	22	Wells
147	Tally Ho Mobile Estates	NA	Wells
148	Tai Apartments	14	Wells
149	The Lodge at Rhinebeck	NA	Wells
150	Unification Theological Church	150	Wells
151	Val Kill Park East	72	Wells
152	Valley Forge Mobile Home Park	60	Wells
153	Venture Lake Estates	44	Wells
154	Village Crest Apartments	600	Wells
155	Wappingers Falls Trailer Park	50	Wells
156	Wassaic Developmental Center	2300	Wells
157	Willow Tree Park	30	Wells
158	Wingdale Village Park	72	Wells
159	Woodcrest Manor Adult Home	NA	Wells
160	Woodfield Apartments	7	Wells

PUTNAM COUNTY

ID NO	COMMUNITY WATER SYSTEM
Municipal Community	
1	Alpine Village
2	Archer Estates
3	Beacon City (See Dutchess Co)
4	Blackberry Hill
5	Bonisville Water Company
6	Brewster Heights
7	Brewster Village
8	Capri Estates
9	Carmel Water District #2
10	Carmel Water District #3
11	Carmel Water District #4- Baldwin Water Company
12	Carmel Water District #5- Maple Terrace
13	Carmel Water District #6- Shell Valley
14	Carmel Water District #7- Tomahawk Creek
15	Chateau Ridge
16	Cold Springs Village
17	Colonial Drive
18	Country Hill Estates
19	Crescent Road Water Supply
20	First Brewster Corporation
21	Floradan Lodge
22	Forest Park Homes
23	Fox Hill Estates
24	Garrison Water Supply
25	George Walsh
26	Glenmar Gardens
27	Greymoor Village
28	Gypsy Trail Club
29	Hillsdale Estates
30	Indian Hill
31	Ivy Hill Water Supply
32	Kent Water District #1
33	Lake View Park
34	Leeside Estates
35	London Bridge Water Works
36	Mahopac Hills
37	Mahopac Lake Shore Estates
38	Mahopac Ridge Water Supply
39	Mahopac Water Company
40	Mill Pond Water Supply
41	New York City - Aqueduct System (page 76)
42	Rainbow Hill Estates
43	Red Hills Water Supply
44	Spring Knoll Estates
45	Star Ridge Manor
46	Sunrise Ridge
47	Union Valley Estates
48	Vails Grove
49	West Branch Acres
50	Wildwood Homes
51	Wood Hill Estates
52	York View
Non-Municipal Community	
53	Brewster Woods Condominium
54	Capuchin Theological Seminary
55	Carpenter Trailer Park
56	Casa Serena Rest Home
57	Clearing in the Woods
58	Cold Spring Trailer Court
59	Elek Apartments
60	Forest Haven Apartments
61	Harmony Trailer Park
62	Holly Stream Condominium Apartments
63	Kent Apartments
64	Kent Nursing Home
65	Knolls Trailer Court
66	Ludingtonville Apartments
67	Malcolm Gordon School
68	Meadow Motor & Mobile Home Court
69	Middle Branch Apartments
70	Patterson Trailer Park
71	Patterson Village Condominiums
72	Post Road Mobile Home Park
73	Putnam Community Hospital
74	St Basil Academy
75	Tilly Foster Apartments
76	Vista on the Lake Condominiums
77	Walter Hoving Home
78	Wendolin Town House Apartments
79	Woodcrest Apartments

Functions as part of Delaware System, overflow goes into Croton System.


LOCATION OF COMMUNITY WATER SYSTEM SOURCES: 1982
DUTCHESS and PUTNAM COUNTIES
CATSKILL MOUNTAINS
HUDSON RIVER
CONNECTICUT
DUTCHESS
COLUMBIA
PUTNAM
WESTCHESTER
Poughkeepsie
Beacon
Newburgh
Kingston
Peekskill
SCALE 1:250,000
5 0 5 MILES
NORTH

REFERENCE NO. 7

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Transcon. Gas Pipeline $I Report DATE: 08/15/88

FROM: A. Culmore COPIES:

SUBJECT: 3 Mile Vicinity Map

REFERENCE:

The 3 Mile Vicinity Map is located inside the jacket at the end of the reference section of this report.

REFERENCE NO. 8

0002.C
02.8611.63

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63	1-26-87	1100

DISTRIBUTION:

File Hudson River Psychiatric Center

BETWEEN:	OF:	PHONE:
Fred Andros	Town of Poughkeepsie H2O Dept.	(914) 462-6535

AND:

Peter Morton (NUS)

DISCUSSION:

I called regarding locations of wells for municipal H2O supply & surface water intakes.

Mr. Andros said:

1) there are no municipal wells within 3 miles
2) the entire City and Town of Poughkeepsie are served by the Hudson River, a total population of at least 60,000 people
3) The HRPC intake was ~~taken out~~ disconnected in Nov. '85
4) the Hudson R. intake are at the water plant ≈ 1 mile south of the HRPC (actually closer when I checked map)
5) Groundwater flow is west toward the Hudson River
6) HRPC owns all the land to the river, so that no down gradient tap samples are obtainable

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 9

FISH AND WILDLIFE SERVICE LIST OF ENDANGERED AND THREATENED WILDLIFE AND PLANTS

(50 CFR 17.11, 17.12; As shown in Code of Federal Regulations, Volume 50, Revised as of October 1, 1983; 48 FR 46057, October 11, 1983; 48 FR 46331, 46336, 46337, 46341, October 12, 1983; 48 FR 49248, October 25, 1983; 48 FR 52742, 52746, November 22, 1983; 49 FR 1058, January 9, 1984; 49 FR 1994, January 17, 1984; 49 FR 2783, 2786, January 23, 1984; 49 FR 6102, February 17, 1984; 49 FR 7334, February 28, 1984; 49 FR 7394, 7397, February 29, 1984; 49 FR 10525, March 20, 1984; 49 FR 14356, April 11, 1984; 49 FR 21058, May 18, 1984; 49 FR 22329, 22334, May 29, 1984; 49 FR 27514, July 5, 1984; 49 FR 28565, July 13, 1984; 49 FR 29234, 29237, July 19, 1984; 49 FR 30201, July 27, 1984; 49 FR 31420, August 7, 1984; 49 FR 33885, 33892, August 27, 1984; 49 FR 34494, 34500, 34504, 34510, August 31, 1984; 49 FR 35954, September 13, 1984; 49 FR 40038, October 12, 1984; 49 FR 43069, October 26, 1984; 49 FR 43968, November 1, 1984; 49 FR 44756, November 9, 1984; 49 FR 45163, November 15, 1984; 49 FR 47400, December 4, 1984; 50 FR 1056, January 9, 1985)

Title 50—Wildlife and Fisheries

CHAPTER I—UNITED STATES FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

SUBCHAPTER B—TAKING, POSSESSION, TRANSPORTATION, SALE, PURCHASE, BARTER, EXPORTATION, AND IMPORTATION OF WILDLIFE

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*)

[Amended by 49 FR 21058, May 18, 1984; 49 FR 22329, 22334, May 29, 1984; 49 FR 27514, July 5, 1984; 49 FR 28565, July 13, 1984; 49 FR 29234, 29237, July 19, 1984; 49 FR 30201, July 27, 1984; 49 FR 31420, August 7, 1984; 49 FR 33885, 33892, August 27, 1984; 49 FR 34494, 34500, 34504, 34510, August 31, 1984; 49 FR 35954, September 13, 1984; 49 FR 43968, November 1, 1984; 49 FR 44756, November 9, 1984; 49 FR 45163, November 15, 1984; 49 FR 47400, December 4, 1984; 50 FR 1056, January 9, 1985]

Subpart B — Lists

§17.11 Endangered and threatened wildlife.

(a) The list in this section contains the names of all species of wildlife which have been determined by the Services to be Endangered or Threatened. It also contains the names of species of wildlife treated as Endangered or Threatened because they are sufficiently similar in appearance to Endangered or Threatened species (see §17.50 *et seq.*).

(b) The columns entitled "Common Name," "Scientific Name," and "Vertebrate Population Where Endangered or Threatened" define the species of wildlife within the meaning of the Act. Thus, differently classified geographic populations of the same vertebrate subspecies or species shall be identified by their differing geographic boundaries, even though the other two columns are identical. The term "Entire" means that all populations throughout the present range of a vertebrate species are listed. Although common names are included, they cannot be relied upon for identification of any specimen, since they may vary greatly in local usage. The Services shall use the most recently accepted scientific name. In cases in which confusion might arise, a synonym(s) will be provided in parentheses. The Services shall rely to the extent practicable on the *International Code of Zoological Nomenclature.*

(c) In the "Status" column the following symbols are used: "E" for Endangered, "T" for Threatened, and "E [or T] (S/A)" for similarity of appearance species.

(d) The other data in the list are nonregulatory in nature and are provided for the information of the reader. In the annual revision and compilation of this Title, the following information may be amended without public notice: the spelling of species' names, historical range, footnotes, references to certain other applicable portions of this Title, synonyms, and more current names. In any of these revised entries, neither the species, as defined in paragraph (b) of this section, nor its status may be changed without following the procedures of Part 424 of this Title.

(e) The "Historic Range" indicates the known general distribution of the species or subspecies as reported in the current scientific literature. The present distribution may be greatly reduced from this historic range. This column does not imply any limitation on the application of the prohibitions in the Act or implementing rules. Such prohibitions apply to all individuals of the species, wherever found.

(f)(1) A footnote to the **Federal Register** publication(s) listing or reclassifying a species is indicated under the column "When Listed." Footnote numbers to §§17.11 and 17.12 are in the same numerical sequence, since plants and animals may be listed in the same **Federal Register** document. That document, at least since 1973, includes a statement indicating the basis for the listing, as well as the effective date(s) of said listing.

(2) The "Special Rules" and "Critical Habitat" columns provide a cross reference to other sections in Parts 17, 222, 226, or 227. The "Special Rules" column will also be used to cite the special rules that describe experimental populations and determine if they are essential or nonessential. Separate listing will be made for experimental populations, and the status column will include the following symbols: "XE" for an essential experimental population and "XN" for a nonessential experimental population. The term "NA" (not applicable) appearing in either of these two columns indicates that there are no special rules and/or Critical Habitat for that particular species. However, all other appropriate rules in Parts 17, 217-227, and 402 still apply to that species. In addition, there may be other rules in this Title that relate to such wildlife, e.g., port-of-entry requirements. It is not intended that the references in the "Special Rules" column

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Pupfish, Comanche Springs	*Cyprinodon elegans*	U.S.A. (Texas)	do	E	1	NA	NA
Pupfish, Devils Hole	*Cyprinodon diabolis*	U.S.A. (Nevada)	do	E	1	NA	NA
Pupfish, Leon Springs	*Cyprinodon bovinus*	U.S.A. (Texas)	do	E	102	17.95(e)	NA
Pupfish, Owens River	*Cyprinodon radiosus*	U.S.A. (California)	do	E	1	NA	NA
Pupfish, Warm Springs	*Cyprinodon nevadensis pectoralis*	U.S.A. (Nevada)	do	E	2	NA	NA
Shiner, beautiful	*Notropis formosus*	U.S.A. (AZ, NM), Mexico	Entire	T	157	17.95(e)	17.44(g)

[Added by 49 FR 34494, August 31, 1984]

Squawfish, Colorado	*Ptychocheilus lucius*	U.S.A. (AZ, CA, CO, NM, NV, UT, WY), Mexico.	do	E	1	NA	NA
Stickleback, unarmored threespine	*Gasterosteus aculeatus williamsoni*	U.S.A. (California)	do	E	2	NA	NA
Sturgeon, shortnose	*Acipenser brevirostrum*	U.S.A. and Canada (Atlantic Coast)	do	E	1	NA	NA
Tango, Miyako (Tokyo bitterling)	*Tanakia tanago*	Japan	do	E	3	NA	NA
Temoset, Ikan (minnow)	*Probarbus jullieni*	Thailand, Cambodia, Vietnam, Malaysia, Laos.	do	E	15	NA	NA
Topminnow, Gila	*Poeciliopsis occidentalis*	U.S.A. (AZ, NM), Mexico	do	E	1	NA	NA
Totoaba (seatrout or weakfish)	*Cynoscion macdonaldi*	Mexico (Gulf of California)	do	E	45	NA	NA
Trout, Apache (=Arizona)	*Salmo apache*	U.S.A. (Arizona)	do	T	1, 8	NA	17.44(a)
Trout, Gila	*Salmo gilae*	U.S.A. (New Mexico)	do	E	1	NA	NA
Trout, greenback cutthroat	*Salmo clarki stomias*	U.S.A. (Colorado)	do	T	1, 38	NA	17.44(f)
Trout, Lahontan cutthroat	*Salmo clarki henshawi*	U.S.A. (CA, NV)	do	T	2, 8	NA	17.44(a)
Trout, Little Kern golden	*Salmo aguabonita whitei*	U.S.A. (California)	do	T	37	17.95(e)	17.44(e)
Trout, Paiute cutthroat	*Salmo clarki selenris*	do	do	T	1, 8	NA	17.44(a)
Woundfin	*Plagopterus argentissimus*	U.S.A. (AZ, NV, UT)	do	E	2	NA	NA
SNAILS							
Snail, Chittenango ovate amber	*Succinea chittenangoensis*	U.S.A. (New York)	NA	T	41	NA	NA
Snail, flat-spired three-toothed	*Triodopsis platysayoides*	U.S.A. (West Virginia)	NA	T	41	NA	NA
Snail, Iowa Pleistocene	*Discus macclintocki*	U.S.A. (Iowa)	NA	E	41	NA	NA
Snail, Manus Island tree	*Papustyla pulcherrima*	Admiralty Islands (Manus Islands)	NA	E	3	NA	NA
Snail, noonday	*Mesodon clarki nantahala*	U.S.A. (North Carolina)	NA	T	41	NA	NA
Snail, Oahu tree	*Achatinella* spp. (all species)	U.S.A. (Hawaii)	NA	E	108, 112	NA	NA
Snail, painted snake coiled forest	*Anguispira picta*	U.S.A. (Tennessee)	NA	T	41	NA	NA
Snail, Stock Island	*Orthalicus reses*	U.S.A. (Florida)	NA	T	41	NA	NA
Snail, Virginia fringed mountain	*Polygyriscus virginianus*	U.S.A. (Virginia)	NA	E	41	NA	NA
CLAMS							
Pearly mussel, Alabama lamp	*Lampsilis virescens*	U.S.A. (AL, TN)	NA	E	15	NA	NA
Pearly mussel, Appalachian monkey-face	*Quadrula sparsa*	U.S.A. (TN, VA)	NA	E	15	NA	NA
Pearly mussel, birdwing	*Conradilla caelata*	do	NA	E	15	NA	NA
Pearly mussel, Cumberland bean	*Villosa (=Micromya) trabalis*	U.S.A. (Kentucky)	NA	E	15	NA	NA
Pearly mussel, Cumberland monkey-face	*Quadrula intermedia*	U.S.A. (AL, TN, VA)	NA	E	15	NA	NA
Pearly mussel, Curtis	*Epioblasma (=Dysnomia) florentina curtisi*	U.S.A. (Missouri)	NA	E	15	NA	NA
Pearly mussel, dromedary	*Dromus dromas*	U.S.A. (TN, VA)	NA	E	15	NA	NA
Pearly mussel, green-blossom	*Epioblasma (=Dysnomia) Toruiosa gubernaculum*	do	NA	E	15	NA	NA
Pearly mussel, Higgins eye	*Lampsilis higginsi*	U.S.A. (IL, IA, MN, MO, NE, WI)	NA	E	15	NA	NA
Pearly mussel, Nicklin's	*Megalonaias nicklineana*	Mexico	NA	E	15	NA	NA
Pearly mussel, orange-footed	*Plethobasus cooperianus*	U.S.A. (AL, IN, IA, KY, OH, PA, TN)	NA	E	15	NA	NA
Pearly mussel, pale lilliput	*Toxolasma (=Calunculina) cylindrella*	U.S.A. (AL, TN)	NA	E	15	NA	NA
Pearly mussel, pink mucket	*Lampsilis orbiculata*	U.S.A. (AL, IL, IN, KY, MO, OH, PA, TN, WV)	NA	E	15	NA	NA
Pearly mussel, Sampson's [Removed by 49 FR 1058, January 9, 1984]					15		
Pearly mussel, Tampico	*Cyrtonaias tampicoensis tecomatensis*	Mexico	NA	E	15	NA	NA
Pearly mussel, tubercled-blossom	*Epioblasma (=Dysnomia) toruiosa*	U.S.A. (IL, KY, TN, WV)	NA	E	15	NA	NA
Pearly mussel, turgid-blossom	*Epioblasma (=Dysnomia) turgidula*	U.S.A. (AL, TN)	NA	E	15	NA	NA
Pearly mussel, white cat's paw	*Epioblasma (=Dysnomia) sulcata delicata*	U.S.A. (IN, MI, OH)	NA	E	15	NA	NA
Pearly mussel, white wartyback	*Plethobasus cicatricosus*	U.S.A. (AL, TN)	NA	E	15	NA	NA
Pearly mussel, yellow-blossom	*Epioblasma (=Dysnomia) florentina florentina*	do	NA	E	15	NA	NA
Pigtoe, fine-rayed	*Fusconaia cuneolus*	U.S.A. (AL, TN, VA)	NA	E	15	NA	NA
Pigtoe, rough	*Pleurobema plenum*	U.S.A. (KY, TN, VA)	NA	E	15	NA	NA
Pigtoe, shiny	*Fusconaia edgariana*	U.S.A. (AL, TN, VA)	NA	E	15	NA	NA
Pocketbook, fat	*Potamilus (=Proptera) capax*	U.S.A. (AR, IN, MO, OH)	NA	E	15	NA	NA
Rifle shell, tan	*Epioblasma walkeri*	U.S.A. (KY, TN, VA)	NA	E	27	NA	NA
CRUSTACEANS							
Amphipod, Hay's spring	*Stygobromus hayi*	U.S.A. (District of Columbia)	NA	E	115	NA	NA
Isopod, Madison Cave	*Antrolana lira*	U.S.A. (VA)	NA	T	123	NA	17.46(a)
Isopod, Socorro	*Thermosphaeroma (=Exosphaeroma) thermophilus*	U.S.A. (New Mexico)	NA	E	36	NA	NA
Shrimp, Kentucky cave	*Palaemonias ganteri*	U.S.A. (KY)	NA	E		17.95(h)	NA
	[Added by 48 FR 46341, October 12, 1983]						
INSECTS							
Beetle, Delta green ground	*Elaphrus viridis*	U.S.A. (California)	NA	T	100	17.95(i)	NA
Beetle, valley elderberry longhorn	*Desmocerus californicus dimorphus*	do	NA	T	99	17.95(i)	NA
Butterfly, Bahama swallowtail	*Papilio andraemon bonhotei*	U.S.A. (FL), Bahamas	NA	T	13	NA	17.47(a)
Butterfly, El Segundo blue	*Euphilotes (=Shijimiaeoides) battoides allyni*	U.S.A. (California)	NA	E	14	NA	NA



REFERENCE NO. 10

HUDSON RIVER PSYCHIATRIC CENTER

Lat: 41°43'59"N Long: 73°55'37"W

List of Dataset: NY53 Number of Records = 6 Group = 1

REC #	POP	HOUSE	DISTANCE	SECTOR
1	1430	39	0.400000	1
2	0	0	0.810000	1
3	3608	1018	1.60000	1
4	12800	4553	3.20000	1
5	21381	8841	4.80000	1
6	22838	7819	6.40000	1

1430	39	0.25 mi.
1430	39	0.50 mi.
5038	1057	1.0 mi.
17838	5610	2.0 mi.
39219	14451	3.0 mi.
62057	22270	4.0 mi.

REFERENCE NO. 11

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63 NY538I	10/21/88	1010

DISTRIBUTION: Hudson River Psych. Center

BETWEEN:	OF:	PHONE:
Bob Dibble	Dutchess Cty Soil Conservation	(914)677-3194

AND: A. Culmar

(NUS)

DISCUSSION:

Is there any commercial farming within 3 miles of the HRPC? ~~E~~ NO

If so, is irrigation employed? NO

GW? 0

SW? 0

Appx. acreage? 0

ACTION ITEMS:

REFERENCE NO. 12

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: _____ SITE CODE: 314063

NAME OF SITE: Hudson River Psychiatric Center REGION: 3

STREET ADDRESS: Route 9

TOWN/CITY: Poughkeepsie COUNTY: Dutchess County

NAME OF CURRENT OWNER OF SITE: State of New York

ADDRESS OF CURRENT OWNER OF SITE: North Road, Poughkeepsie, NY

TYPE OF SITE: OPEN DUMP ☐ STRUCTURE ☐ LAGOON ☐
LANDFILL ☒ TREATMENT POND ☐

ESTIMATED SIZE: 50 ACRES (Total of 6 areas)

SITE DESCRIPTION:
The Hudson River Psychiatric Center has six (6) inactive disposal sites which received municipal refuse from the City and Town of Poughkeepsie and institutional waste from the Hudson River Psychiatric Center. Wetlands, streams, and other environmentally sensitive areas have been used for landfills. Ponding of surface water and leachate resulted after landfilling. Leachate discharged to adjoining streams and surface waters has been a continuing problem at the site. The volume and characteristics of hazardous waste disposed at the site are unknown. No data is available on ground water and surface water at the site.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐ SUSPECTED ☐ Unknown

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Unknown	Unknown

REFERENCE NO. 13

TABLE 1

SAMPLE DESCRIPTIONS
HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK

Sample ID Number	Sample Type	Organic Traffic Report #	Inorganic Traffic Report #	Time (Hours)	Sample Location
NY53-SW1	Aqueous	BI976	MBI475	1044	Immediately downstream from where small stream draining north from area 1 enters larger unnamed stream flowing west.
NY53-SW2	Aqueous	BI977	MBI476	1111	By mouth of second corrugated steel drainage pipe upstream from SW-1.
NY53-SW3	Aqueous	BI978	MBI477	1249	Approximately 10 feet upstream from where stream draining area 5 passes through culvert and grating and leaves area.
NY53-SW4	Aqueous	BI979	MBI478	1322	On upstream side of road that passes over stream to the east of area 5.
NY53-SW5	Aqueous	BI980	MBI479	1423	On stream due south of curve in HRPC road by main gate.
NY53-SW6	Aqueous	BI981	MBI480	1503	Small pond on southeast side of picnic shelter.
NY53-SW7	Aqueous	BI982	MBI481	1454	Small stream draining from north by southwest corner of picnic shelter.
NY53-SW8	Aqueous	BI983	MBI482	1531	Approximately 150 feet (paced) upstream from picnic shelter.

TABLE 1 (CONT'D)

SAMPLE DESCRIPTIONS
HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, BUTCHESS COUNTY, NEW YORK

Sample ID Number	Sample Type	Organic Traffic Report #	Inorganic Traffic Report #	Time (Hours)	Sample Location
NY53-SED1	Sediment	BI968	MBI467	1051	Same location as SW1.
NY53-SED2	Sediment	BI969	MBI468	1111	Same location as SW2.
NY53-SED3	Sediment	BI970	MBI469	1249	Same location as SW3.
NY53-SED4	Sediment	BI971	MBI470	1328	Same location as SW4.
NY53-SED5	Sediment	BI972	MBI471	1431	Same location as SW5.
NY53-SED6	Sediment	BI973	MBI472	1508	Same location as SW6.
NY53-SED7	Sediment	BI974	MBI473	1454	Same location as SW7.
NY53-SED8	Sediment	BI975	MBI474	1533	Same location as SW8.
NY53-S1	Soil	BI967	MBI466	1023	Surface sample collected where leachate is discharging from northern edge of area 1.
NY53-B1	Aqueous	BI984	MBI483	N/A	U.S. EPA, Region II, FIT.

ANALYTICAL DATA
NAME: HUDSON RIVER PSYCHIATRIC CENTER
SAMPLING DATE: 02/26/87
CASE: 6889

VOLATILES

SAMPLE NUMBER	NY53-SI	NY53-SW1	NY53-SED1	NY53-SW2	NY53-SED2	NY53-SW3	NY53-SED3	NY53-SW4	NY53-SED4	NY53-SW5	NY53-SED5	NY53-SW6	NY53-SED6	NY53-SW7	NY53-SED7	NY53-SW8	NY53-SED8	NY53-BLK1
TRAFFIC REPORT NUMBER	BI967	BI976	BI968	BI977	BI969	BI978	BI970	BI979	BI971	BI980	BI972	BI981	BI973	BI982	BI974	BI983	BI975	BI984
MATRIX	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
UNITS	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L
Chloromethane																		
Bromomethane																		
Vinyl Chloride																		
Chloroethane																		
Methylene Chloride																		
Acetone		Q		Q	Q	Q		Q			Q						Q	36
Carbon Disulfide																		
1,1-Dichloroethene																		
1,1-Dichloroethane																		
Trans-1,2-Dichloroethene																		
Chloroform																		
1,2-Dichloroethane																		
2-Butanone																		
1,1,1-Trichloroethane																		
Carbon Tetrachloride																		
Vinyl Acetate																		
Bromodichloromethane																		
1,1,2,2-Tetrachloroethane																		
1,2-Dichloropropane																		
Trans-1,3-Dichloropropene																		
Trichloroethene																		
Dibromochloromethane																		
1,1,2-Trichloroethane																		
Benzene																		
Cis-1,3-Dichloropropene																		
2-Chloroethylvinylether																		
Bromoform																		
2-Hexanone																		
4-Methyl-2-Pentanone																		
Tetrachloroethene																		
Toluene					Q					Q			Q		Q	Q		Q
Chlorobenzene																	9	
Ethylbenzene																		
Styrene																		
Total Xylenes																		

NOTES TO ORGANICS DATA:
Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
J - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: HUDSON RIVER PSYCHIATRIC CENTER
SAMPLING DATE: 02/26/87
CASE: 6889

SEMI-VOLATILES

SAMPLE NUMBER	NY53-S1	NY53-SW1	NY53-SED1	NY53-SW2	NY53-SED2	NY53-SW3	NY53-SED3	NY53-SW4	NY53-SED4	NY53-SW5	NY53-SED5	NY53-SW6	NY53-SED6	NY53-SW7	NY53-SED7	NY53-SW8	NY53-SED8	NY53-BL1
TRAFFIC REPORT NUMBER	BI967	BI976	BI968	BI977	BI969	BI978	BI970	BI979	BI971	BI980	BI972	BI981	BI973	BI982	BI974	BI983	BI975	BI984
MATRIX	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
UNITS	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L
Phenol																		
Bis(2-Chloroethyl)Ether																		
2-Chlorophenol																		
1,3-Dichlorobenzene																		
1,4-Dichlorobenzene																		
Benzyl Alcohol																		
1,2-Dichlorobenzene																		
2-Methylphenol																		
Bis(2-Chloroisopropyl)Ether																		
4-Methylphenol									170J									
N-Nitroso-Di-n-Propylamine																		
Hexachloroethane																		
Nitrobenzene																		
Isophorone																		
2-Nitrophenol																		
2,4-Dimethylphenol																		
Benzoic Acid																		
Bis(2-Chloroethoxy)Methane																		
2,4-Dichlorophenol																		
1,2,4-Trichlorobenzene																		
Naphthalene			1100		190J													
4-Chloroaniline																		
Hexachlorobutadiene																		
4-Chloro-3-Methylphenol																		
2-Methylnaphthalene			1000															
Hexachlorocyclopentadiene																		
2,4,6-Trichlorophenol																		
2,4,5-Trichlorophenol																		
2-Chloronaphthalene																		
2-Nitroaniline																		
Dimethyl Phthalate																		
Acenaphthylene																		
3-Nitroaniline																		
Acenaphthene			920		290J													
2,4-Dinitrophenol																		
4-Nitrophenol																		
Dibenzofuran			760		230J													

ANALYTICAL DATA
NAME: HUDSON RIVER PSYCHIATRIC CENTER
SAMPLING DATE: 02/26/87
CASE: 6889

SEMI-VOLATILES

SAMPLE NUMBER	NY53-S1	NY53-SW1	NY53-SED1	NY53-SW2	NY53-SED2	NY53-SW3	NY53-SED3	NY53-SW4	NY53-SED4	NY53-SW5	NY53-SED5	NY53-SW6	NY53-SED6	NY53-SW7	NY53-SED7	NY53-SW8	NY53-SED8	NY53-BL1
TRAFFIC REPORT NUMBER	BI967	BI976	BI968	BI977	BI969	BI978	BI970	BI979	BI971	BI980	BI972	BI981	BI973	BI982	BI974	BI983	BI975	BI984
MATRIX	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
UNITS	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L
2,4-Dinitrotoluene																		
2,6-Dinitrotoluene																		
Diethylphthalate																		
4-Chlorophenylphenyl ether																		
Fluorene			1100		360													
4-Nitroaniline																		
4,6-Dinitro-2-Methylphenol																		
N-Nitrosodiphenylamine																		
4-Bromophenylphenyl ether																		
Hexachlorobenzene																		
Pentachlorophenol																		
Phenanthrene			8100		2800		180J		220J		420J				5500J			
Anthracene			1700		510J													
Di-n-Butylphthalate																		
Fluoranthene			9000		2700		290J		430J		740J		2600		6400J			
Pyrene			6400		2000		280J		390J		710J		2100		6000J			
Butylbenzylphthalate											220J							
3,3'-Dichlorobenzidine																		
Benzo(a)Anthracene			4200		970				210J		420J		1200J					
Bis(2-Ethylhexyl)Phthalate							180J		220J		1700		2200				Q	17
Chrysene			4600		1000		220J		260J		600		1700J					
Di-n-Octyl Phthalate																		
Benzo(b)Fluoranthene			5100		770								3100					
Benzo(k)Fluoranthene			3300		730													
Benzo(a)Pyrene			4300		810								1300					
Indeno(1,2,3-cd)Pyrene			1700															
Dibenzo(a,h)Anthracene																		
Benzo(ghi)Perylene			1600															

NOTES TO ORGANICS DATA:
Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
J - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: HUDSON RIVER PSYCHIATRIC CENTER
SAMPLING DATE: 02/26/87
CASE: 6889

PESTICIDES/PCBs																					
SAMPLE NUMBER	NY53-S1	NY53-SW1	NY53-SED1	NY53-SW2	NY53-SED2	NY53-SW3	NY53-SED3	NY53-SW4	NY53-SED4	NY53-SW5	NY53-SED5	NY53-SW6	NY53-SED6	NY53-SW7	NY53-SED7	NY53-SW8	NY53-SED8	NY53-BLK1
TRAFFIC REPORT NUMBER	BI967	BI976	BI968	BI977	BI969	BI978	BI970	BI979	BI971	BI980	BI972	BI981	BI973	BI982	BI974	BI983	BI975	BI984
MATRIX	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
UNITS	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L	ug/Kg	ug/L
Alpha-BHC																		
Beta-BHC																		
Delta-BHC																		
Gamma-BHC (Lindane)			Q															
Heptachlor																		
Aldrin																		
Heptachlor Epoxide															Q			
Endosulfan I																		
Dieldrin																		
4,4'-DDE					7.8J		16J		46		100	0.06J	250					
Endrin																		
Endosulfan II																		
4,4'-DDD							6.2J					0.05J	210					
Endosulfan sulfate																		
Endrin Aldehyde																		
4,4'-DDT									85			0.01J	170					
Methoxychlor																		
Endrin Ketone																		
Chlordane																		
Toxaphene																		
Aroclor-1016																		
Aroclor-1221																		
Aroclor-1232																		
Aroclor-1242																		
Aroclor-1248											1700J							
Aroclor-1254																		
Aroclor-1260											1600				1,700,000			

NOTES TO ORGANICS DATA:
Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
J - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: HUDSON RIVER PSYCHIATRIC CENTER
SAMPLING DATE: 02/26/87
CASE: 6889

INORGANICS

SAMPLE NUMBER	NY53-S1	NY53-SW1	NY53-SED1	NY53-SW2	NY53-SED2	NY53-SW3	NY53-SED3	NY53-SW4	NY53-SED4	NY53-SW5	NY53-SED5	NY53-SW6	NY53-SED6	NY53-SW7	NY53-SED7	NY53-SW8	NY53-SED8	NY53-BLK1
TRAFFIC REPORT NUMBER	MBI 466	MBI475	MBI467	MBI476	MBI468	MBI477	MBI469	MBI478	MBI470	MBI479	MBI471	MBI480	MBI472	MBI481	MBI473	MBI482	MBI474	MBI483
MATRIX	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
UNITS	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L	mg/Kg	ug/L
Aluminum	6200	338E	880	20E	11,900	20E	9200	20E	5560	612E	12,500	2030E	9980	20E	9220	20E	17,300	20E
Antimony	35E	Q	8.9E	Q	8.5E	Q	14E	Q	9.3E	Q	13E	Q	38E	Q	9.4E	Q	9.8E	Q
Arsenic	67E		12E		2E		8E		3.7E		16E	[8.0]	17E		4.6E		5.4E	
Barium	316	[37]	80	(12)	[42]	(26)	116		(29)	(48)	104	244	(243)	(25)	(44)	(41)	65	
Beryllium													6.4				1.6	
Cadmium	8.2												105				1.3	
Calcium	10,100	73,200	9470	68,300	7920	87,100	8230	74,100	3400	93,600	5620	108,000	19,200	79,400	16,200	91,800	3260	
Chromium			18		19							15	105		22		14	
Cobalt			[3.8]										13		3.2			
Copper	63	[11]	35		31				31		56	65	289		175		33	
Iron	282,000	4830	31,700	246	33,100	672	53,200	109	10,800	4500	50,100	145,000	58,900	(82)	25,800	1680	36,800	
Lead	107	9.0	32		29	(2.0)	95	(3.0)	99	14	223	55	169	(2.0)	228	(1.0)	111	
Magnesium	[1760]	10,100	7400	9530	9340	10,800	4840	9860	2160	11,600	5180	13,100	4740	11,900	7630	11,100	7820	
Manganese	3630	408	2040	86	623	220	2710		402	415	907	3780	6660	31	413	507	199	
Mercury	2.6	Q	0.25	Q	0.17	Q	0.42	Q	0.41	Q	0.31	Q	0.83	Q	1.1	Q	0.22	Q
Nickel			22		28		9.7						26		(11)		(11)	
Potassium	[714]	[1100]	[444]	(903)	(679)	(2840)	(484)	2160	(402)	2510	(2840)	2260	(1190)	(1280)	(1140)	(2580)	(782)	
Selenium																		
Silver							53								10	3.2		
Sodium	[1290]	39,400	Q	43,400	Q	65,700	678E	71,600E	Q	[illegible]	1350	50,000E	(1790)	44,000E	Q	49,900E	Q	Q
Thallium	1.1E																	(2.0)
Vanadium	[26]		27		23		(13)		(4.0)		84	(27)	141		29		26	
Zinc	269	29	148		150		150		111	25	802	298	794	(13)	413		104	[14]

NOTES TO INORGANICS DATA:
Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
[]- compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample and indicates possible/probable blank contamination
E - value estimated due to interference
NR- analysis not required

ORGANIC DATA REPORTING QUALIFIERS

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of such flags must be explicit.

Value -If the result is a value greater than or equal to the detection limit, report the value.

U -Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J -Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g., 10J)

C -This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract should be confirmed by GC/MS.

B -This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other -Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

INORGANIC DATA QUALIFIER

Footnotes:

NR - not required by contract at this time.

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]. Indicate the analytical method used with P (for ICP/Flame AA) or F (for furnace).

U - Indicates elemant was analyzed for but not detected. Report with the detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

S - Indicates value determined by Method of Standard Addition.

R - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis in not within control limits.

\+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

U.S. ENVIRONMENTAL PROTECTION AGENCY - EWL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 976

① **Case Number:** 6889

Sample Site Name/Code: Hudson R. Pyr.

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- X Water
- ___ Soil/Sediment

④ **Ship To:** VERSAR Inc.

Attn: Charlie Carta

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel: S. Bullis (Name)

201-225-6160 (Phone)

Sampling Date: 2/26/87 (Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 oz
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other		
Pest / PCB	1	80 oz

⑦ **Shipping Information**

Federal Express — Name of Carrier

2/26/87 — Date Shipped:

495164935 — Airbill Number:

⑧ **Sample Description**
- X Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- ___ Solids
- ___ Other (specify) ___

⑨ **Sample Location**

NY 53 SW 1

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Inorg MBI 475

SMO COPY

SW-1

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-976

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23892
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/02/87
Date Analyzed: 03/02/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	~~9 J~~
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300003

SW - 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI976

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/16/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

SW - 1

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 976

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.50 u
57-74-9	Chlordane	1.0 u
8001-35-2	Toxaphene	0.50 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	1.0 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	

S. Zarafshan
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300005

SW - 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI-976

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1		NO VOLATILES DETECTED	VOA	NA	NA
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

300006

SW- 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI976

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	UNKNOWN		BNA	759	17 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300007

U.S. ENVIRONMENTAL PROTECTION AGENCY — HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number: MBI 475

(1) **Case Number:** 6889
Sample Site Name/Code: HUDSON RIVER PCBs

(2) **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

(3) **SAMPLE MATRIX** (Check One)
- X Water
- ___ Soil/Sediment

(4) **Ship To:** Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) **Sample Description:** (Check One)
- X Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- ___ Solids
- ___ Other ___ (specify) ___

MATCHES ORGANIC SAMPLE NO. B9976

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
- X Total Metals
- ___ Cyanide

N453 - SW1

SMO COPY

SW - 1

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1- 475

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc. CASE NO. 6444

SOW NO. 785

LAB SAMPLE ID. NO. 001A-03 QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

(ug/L) or mg/kg dry weight (Circle One)

1. Aluminum	33+PE	13. Manganese	10, 100P *
2. ~~Antimony~~	~~300UN~~	14. Mercury	40+P
3. Arsenic	5.0UF	15. ~~Mercury~~	~~0.2UN~~
4. Barium	[37]P	16. Nickel	20UP
5. Beryllium	5.0UP	17. Potassium	[1100]P
6. Cadmium	4.0UP	18. Selenium	2.0UF
7. Calcium	73 260P	19. Silver	10UP
8. Chromium	10UP	20. Sodium	39, 400PE
9. Cobalt	10UP	21. Thallium	1.0UFN
10. Copper	[11]P	22. Vanadium	10UP
11. Iron	4730P	23. Zinc	29P
12. Lead	9.0+F	Percent Solids (%)	N/A
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Medium dark fluid Clear liquid
E = per dil.

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY — EPA Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 977

① **Case Number:** 6889

Sample Site Name/Code: Hudson R. Psgc.

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- X Water
- ___ Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: C. Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel:
S. Bucelli
(Name)
201-225-6160
(Phone)

Sampling Date: 2/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 oz
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
~~Other~~ Pest PCB	1	80 oz

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**
- X Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- ___ Solids
- ___ Other (specify) ___

⑨ **Sample Location**

NY53 SW 2

⑩ **Special Handling Instructions:**
(e.g., safety precautions, hazardous nature)

Matches Drop MBI 476

SMO COPY

SW-2

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-977

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23893
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/02/87
Date Analyzed: 03/02/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	[illegible]
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300031

SW-2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI977

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/16/87

Conc/Dil Factor: 1

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

SW - 6

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 977

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Zarafshar
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300033

SW-2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI-977

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.		NO VOLATILES DETECTED	VOA	NA	NA
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

300034

SW-2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI974

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300035

U.S. ENVIRONMENTAL PROTECTION AGENCY, EMSL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 978

① **Case Number:** 6887

Sample Site Name/Code: Hudson R. PSYC.

② **SAMPLE CONCENTRATION** (Check One)

X Low Concentration
___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)

X Water
___ Soil/Sediment

④ **Ship To:** VERSAR Inc.

Attn: C. Carter

Transfer Ship To:

⑤ **Regional Office:** 1

Sampling Personnel:

S. Bulls
(Name)

201-225-6160
(Phone)

Sampling Date: 2/26/87
(Begin) (End)

⑥ **For each sample collected specify nu of containers used and mark volume l on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 oz
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other Pest PCB	1	80 g

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**

X Surface Water ___ Mixed Media
___ Ground Water ___ Solids
___ Leachate ___ Other (specify) _____

⑨ **Sample Location**

N453 SW3

⑩ **Special Handling Instructions:**
(e.g., safety precautions, hazardous nature)

Matches Dnors RB1477

SMO COPY

SW-3

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-978

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23894
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/02/87
Date Analyzed: 03/02/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	5 u
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300056

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

SW-3

Sample Number
BI978

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/16/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

BNAF1:R032286

Form I

300057

SW-3

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 978

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Barefoot
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300058

SW-3

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BT-978

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1		NO VOLATILES DETECTED	VOA	NA	NA
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

300059

SW - 3

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI-978

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300060

U.S. ENVIRONMENTAL PROTECTION AGENCY EWT Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490 FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 477

(1) Case Number: C889
Sample Site Name/Code:
HUDSON RIVER Pkg C

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
X Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other
(specify) B1978
MATCHES ORGANIC SAMPLE NO.

(8) Mark Volume Level On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

NY53 SW3

SMO COPY

SW-3

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-477

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.

CASE NO. 6FF4

SOW NO. 785

LAB SAMPLE ID. NO. 001F-06

QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium

Matrix: Water ✓ Soil Sludge Other

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	20UPE	13. Mercury	10.600P *
2. ~~Antimony~~	~~30UPN~~	14. Manganese	820P
3. Arsenic	5.0UF	15. ~~Nickel~~	~~6.2UN~~
4. Barium	<26>P	16. Nickel	20UP
5. Beryllium	5.0UP	17. Potassium	<2740>P
6. Cadmium	4.0UP	18. Selenium	5.0UF
7. Calcium	87,100P	19. Silver	10UP
8. Chromium	10UP	20. Sodium	65700PE
9. Cobalt	10UP	21. Thallium	1.0UFN
10. Copper	6.0UP	22. Vanadium	10UP
11. Iron	672P	23. Zinc	10UP
12. Lead	<2.0>F	Percent Solids (%)	N/A
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and recorded on Cover Page, however.

Comments: Clear liquid

E = per. dil

Lab Manager

U.S. ENVIRONMENTAL PROTECTION AGENCY - HRS Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 - FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 979

① Case Number: 6889

Sample Site Name/Code: Hudson R. PSyc.

② SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

③ SAMPLE MATRIX (Check One)
X Water
___ Soil/Sediment

④ Ship To: Versar Inc.
Attn: C. Carter
Transfer Ship To:

⑤ Regional Office: II
Sampling Personnel:
S. Bullis
(Name)
201-225-6160
(Phone)
Sampling Date: 2/26/87
(Begin) (End)

⑥ For each sample collected specify number of containers used and mark volume level on each bottle.

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 ml
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other Post PCB	1	80 g

⑦ Shipping Information
Federal Express
Name of Carrier
2/26/87
Date Shipped:
495164935
Airbill Number:

⑧ Sample Description
X Surface Water ___ Mixed Media
___ Ground Water ___ Solids
___ Leachate ___ Other (specify) _____

⑨ Sample Location
N153 SW 4

⑩ Special Handling Instructions:
(e.g., safety precautions, hazardous nature)
Matches Dioxy MBI 478

SMO COPY

SW-4

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-979

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23895
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/02/87
Date Analyzed: 03/02/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	[illegible]
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300081

SW-4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI979

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

300082

SV-4

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 979

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Zarafshar
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300083

SW-4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI-979

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO VOLATILES DETECTED.	VOA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300084

SW-4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI979

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300085

␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣

U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490 FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 478

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER Byc

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
X Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer
Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6166
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier:
Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other
(specify) 31979
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level
On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

N453 SW4

SMO COPY

SW-4

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-47F

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc. CASE NO. 6449

SOW NO. 785

LAB SAMPLE ID. NO. 0017-07 QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	20.0UPE	13. Magnesium	9160P
2. Antimony	~~30.0UPN~~	14. Manganese	5.0UP
3. Arsenic	5.0UF	15. Mercury	~~0.2UM~~
4. Barium	20UP	16. Nickel	20UP
5. Beryllium	5.0UP	17. Potassium	2160P
6. Cadmium	4.0UP	18. Selenium	5.0UF
7. Calcium	74100P	19. Silver	10UP
8. Chromium	10UP	20. Sodium	71,600PE
9. Cobalt	10UP	21. Thallium	1.0UFN
10. Copper	6.0UP	22. Vanadium	10UP
11. Iron	109P	23. Zinc	10UP
12. Lead	<3.0?F	Percent Solids (%)	N/A

Cyanide N/A

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Clear liquid
E = per. dil

Lab Manager Kenneth Ford

U.S. ENVIRONMENTAL PROTECTION AGENCY, EMSL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 980

① **Case Number:** 6889

Sample Site Name/Code: Hudson R. PS4C.

② **SAMPLE CONCENTRATION** (Check One)

X Low Concentration
___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)

X Water
___ Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: C. Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel: S. Bullis

(Name)

201-225-6160

(Phone)

Sampling Date: 2/26/87

(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 g
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other PEST/PCB	1	80 g

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**

X Surface Water ___ Mixed Media
___ Ground Water ___ Solids
___ Leachate ___ Other (specify) _____

⑨ **Sample Location**

N753 SW 5

⑩ **Special Handling Instructions:**
(e.g., safety precautions, hazardous nature)

Matches Diors MB1479.

SMO COPY

SW-5

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-980

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23896
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/04/87
Date Analyzed: 03/04/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	10 u
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

JB

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300106

SW-5

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI980

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

300107

SW-5

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 980

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Zoufhan
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300108

SW-5

Versar Inc., Laboratory Operations
350 Versar Center, Springfield VA 22151 (703) 750-3000

IBI-980

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	7 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

300109

SW-5

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI980

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300110

U.S. ENVIRONMENTAL PROTECTION AGENCY — EPA Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 — FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 479

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER PSYC

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
X Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) Sampling Office: EIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other
(specify) By 980
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

N453 - SW 5

SMO COPY

SW-5.

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-479

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.

CASE NO. 6449

SOW NO. 785

LAB SAMPLE ID. NO. 001F-15

QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low / Medium

Matrix: Water / Soil Sludge Other

(ug/L) or mg/kg dry weight (Circle One)

1. Aluminum	612 PE	13. Barium	11,600P *
2. Antimony	~~Spoiled~~	14. Beryllium	415P
3. Arsenic	5.0UF	15. Boron	~~Spoiled~~
4. Barium	44P	16. Cadmium	20UP
5. Beryllium	5.0UP	17. Calcium	2510P
6. Cadmium	4.0UP	18. Cobalt	2.0UF
7. Calcium	93,000P	19. Chromium	10UP
8. Chromium	10UP	20. Copper	49,000PE
9. Cobalt	10UP	21. Iron	1.0UF
10. Copper	6.0UP	22. Lead	10UP
11. Iron	4,500P	23. Magnesium	25P
12. Lead	14F	24. Manganese	10UP
Cyanide		Percent Solids (%)	N/A

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and included on cover page, however.

Comments: Clear liquid
E = per. dil

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY, EMSL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 981

① Case Number: 6889

Sample Site Name/Code: Hudson R. PSYC

② SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

③ SAMPLE MATRIX (Check One)
X Water
___ Soil/Sediment

④ Ship To: Versar Inc.
Attn: C. Carter
Transfer Ship To:

⑤ Regional Office: II

Sampling Personnel:
S. Bullis
(Name)
201-225-6160
(Phone)

Sampling Date: 2/26/87
(Begin) (End)

⑥ For each sample collected specify number of containers used and mark volume level on each bottle.

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 g
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other Pest/PCB	1	80 g

⑦ Shipping Information
Federal Express
Name of Carrier
2/26/87
Date Shipped:
495164935
Airbill Number:

⑧ Sample Description
X Surface Water ___ Mixed Media
___ Ground Water ___ Solids
___ Leachate ___ Other (specify) _____

⑨ Sample Location
N453 SW 6

⑩ Special Handling Instructions:
(e.g., safety precautions, hazardous nature)
Matches Dnrs MB1480

SMO COPY

SW-6

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-981

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23897
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/04/87
Date Analyzed: 03/04/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	10 u
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300134

SW-6

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI981

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

300135

SW-6

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 981

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 02-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.06 J
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.05 J
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 J
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

J - ESTIMATED VALUE; COMPOUND CONFIRMED BELOW THE DETECTION LIMIT; MEETS ALL OTHER ID CRITERIA
ACD 8/23/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300136

SW-6

Versar Inc., Laboratory Operations
350 Versar Center, Springfield VA 22151 (703) 750-3000

BI-981

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	5 J
2.	75-43-4	METHANE, DICHLOROFLUORO-	VOA	159	4 J
3.	75-69-4	METHANE, TRICHLOROFLUORO-	VOA	215	29 J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

300137

SW-6

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI981

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY EWL Sample Management Office
P.O. Box 818, Alexandria, VA 22313—703/557-2490 FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 480

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER Byc

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
X Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4951647 73

(7) Sample Description:
(Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other ___
(specify) TB 981
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

N453 SW 6

SMO COPY

SW-6

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-HH0

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.

CASE NO. 6119

SOW NO. 785

LAB SAMPLE ID. NO. ~~MB1-HH~~ 0015-16

QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	2030PE	13. Manganese	13.100P ✱
2. ~~Antimony~~	~~30UP~~	14. Mercury	37.0P
3. Arsenic	[6.0]F	15. ~~Mercury~~	~~0.5UP~~
4. Barium	24HP	16. Nickel	20UP
5. Beryllium	5.0UP	17. Potassium	2260P
6. Cadmium	4.0UP	18. Selenium	8.0UF
7. Calcium	46 105,000P	19. Silver	10UP
8. Chromium	15P	20. Sodium	50,000PE
9. Cobalt	10UP	21. Thallium	1.0UF
10. Copper	65P	22. Vanadium	<27>P
11. Iron	145000P	23. Zinc	29FP
12. Lead	~~42.0F~~ 55FS	Percent Solids (%)	N/A

Cyanide N/A

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and described on cover page, however.

Comments: clear liquid

E = per. dil.

Lab Manager: Bernard

U.S. ENVIRONMENTAL PROTECTION AGENCY - HWI Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 982

① Case Number: 6889

Sample Site Name/Code: Hudson R. PSyC.

② SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

③ SAMPLE MATRIX (Check One)
X Water
___ Soil/Sediment

④ Ship To: Versar
Attn: C. Carter
Transfer Ship To:

⑤ Regional Office: 1
Sampling Personnel:
J. Bullis
(Name)
201-225-6160
(Phone)
Sampling Date: 2/26/87
(Begin) (End)

⑥ For each sample collected specify number of containers used and mark volume level on each bottle.

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160g
Water (VOA)	2	80ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other Pest/PCB	1	80g

⑦ Shipping Information
Federal Express
Name of Carrier
2/26/87
Date Shipped:
495164935
Airbill Number:

⑧ Sample Description
X Surface Water ___ Mixed Media
___ Ground Water ___ Solids
___ Leachate ___ Other (specify) _____

⑨ Sample Location
NY 53 SW 7

⑩ Special Handling Instructions:
(e.g., safety precautions, hazardous nature)
Matches Drop. MBI 481

SMO COPY

SW-7

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-982

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23898
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/04/87
Date Analyzed: 03/04/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	10 u
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	5 u
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300166

SW-7

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Case No: 6889

Sample Number
BI982

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

BNAF1:R032286

Form I

(1)-Cannot be separated from diphenylamine

300167

SW-7

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 982

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Zarafshar
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300168

SW-7

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

IBI-982

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or µg/l)
11.	124-38-9	CARBON DIOXIDE	VOA	27	5 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300169

SW-7

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI982

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300170

U.S. ENVIRONMENTAL PROTECTION AGENCY — EPA/CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/ 557-2490

INORGANICS TRAFFIC REPORT

Sample Number: MBI 481

(1) Case Number: 6889
Sample Site Name/Code: HUDSON RIVER PSYC

(2) SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX (Check One)
X Water
___ Soil/Sediment

(4) Ship To: Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201 - 225 - 6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4315647 73

(7) Sample Description: (Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other ___
(specify) ___
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

N453 SW 7

SMO COPY

SW-7

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MBI-4F1

Date 4-2-47

INORGANIC ANALYSIS DATA SHEET

LAB NAME Centum Laboratories, Inc.

CASE NO. 6419

SOW NO. 785

LAB SAMPLE ID. NO. 0014-17

QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

(CLP) or mg/kg dry weight (Circle One)

1. Aluminum	20UP	13. Potassium	11,900P *
2. Antimony	~~300UP~~	14. Manganese	3.1P
3. Arsenic	5.0UF	15. Mercury	~~0.2UCV~~
4. Barium	<25>P	16. Nickel	20UP
5. Beryllium	5.0UP	17. Potassium	<1,240>P
6. Cadmium	4.0UF	18. Selenium	2.0UF
7. Calcium	79,400P	19. Silver	10P
8. Chromium	10UP	20. Sodium	44,000P/E
9. Cobalt	10UP	21. Thallium	1.0UF
10. Copper	6.0UP	22. Vanadium	10UP
11. Iron	<82>P	23. Zinc	<13>P
12. Lead	<2.0>F	Percent Solids (%)	N/A
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and attached on cover page, however.

Comments: Clear log

E = per. dil

Lab Manager: Jennifer Ford

U.S. ENVIRONMENTAL PROTECTION AGENCY, HWI Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313—703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 983

① **Case Number:** 6889

Sample Site Name/Code: Hudson R. Byc.

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- X Water
- ___ Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: C. Carter

Transfer Ship To:

⑤ **Regional Office:** 2

Sampling Personnel:
S. Bullis
(Name)
201-225-6160
(Phone)

Sampling Date:
2/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 g
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Pest / PCB Other	1	80 g

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**
- X Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- ___ Solids
- ___ Other (specify) ___

⑨ **Sample Location**

N953 - SWP

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Dnors. MB1482

SMO COPY

SW-8

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-983

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23899
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/04/87
Date Analyzed: 03/04/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l	CAS Number		ug/l
74-87-3	Chloromethane	10 u	78-87-5	1,2-Dichloropropane	5 u
74-83-9	Bromomethane	10 u	10061-02-6	Trans-1,3-Dichloropropene	5 u
75-01-4	Vinyl Chloride	10 u	79-01-6	Trichloroethene	5 u
75-00-3	Chloroethane	10 u	124-48-1	Dibromochloromethane	5 u
75-09-2	Methylene Chloride	5 u	79-00-5	1,1,2-Trichloroethane	5 u
67-64-1	Acetone	10 u	71-43-2	Benzene	5 u
75-15-0	Carbon Disulfide	5 u	10061-01-5	cis-1,3-Dichloropropene	5 u
75-35-4	1,1-Dichloroethene	5 u	110-75-8	2-chloroethylvinylether	10 u
75-34-3	1,1-Dichloroethane	5 u	75-25-2	Bromoform	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u	108-10-1	4-Methyl-2-Pentanone	10 u
67-66-3	Chloroform	5 u	591-78-6	2-Hexanone	10 u
107-06-2	1,2-Dichloroethane	5 u	127-18-4	Tetrachloroethene	5 u
78-93-3	2-butanone	10 u	79-34-5	1,1,2,2-Tetrachloroethane	5 u
71-55-6	1,1,1-Trichloroethane	5 u	108-88-3	Toluene	~~1~~ JB
56-23-5	Carbon Tetrachloride	5 u	108-90-7	Chlorobenzene	5 u
108-05-4	Vinyl Acetate	10 u	100-41-4	Ethylbenzene	5 u
75-27-4	Bromodichloromethane	5 u	100-42-5	Styrene	5 u
				Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300192

SW-8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI983

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1/2

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	10 u
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

300193

SW-8

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 983

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Gorfinkel
3-16-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300194

SW-8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

IBI- 983

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		UNKNOWN.	VOA.	27	8 J...
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
11.					
12.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300195

54-8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI993

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO SEMIVOLATILES DETECTED	BNA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300196

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 · FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number **MBI 482**

(1) **Case Number:** 6889
Sample Site Name/Code:
HUDSON RIVER PSYC

(2) **SAMPLE CONCENTRATION** (Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX** (Check One)
X Water
___ Soil/Sediment

(4) **Ship To:**
Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495 164 773

(7) **Sample Description:** (Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other (specify) B1983
MATCHES ORGANIC SAMPLE NO. ___

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
X Total Metals
___ Cyanide

N453 SW8

SMO COPY

SW-8.

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-41✓

Date 4-2-4

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc. CASE NO. 644

SOW NO. 785

LAB SAMPLE ID. NO. 0014-1F QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

(ug/L) or mg/kg dry weight (Circle One)

1. Aluminum	20.0P E	13. Manganese	11,100P
2. Antimony	~~30.0P N~~	14. Mercury	307P
3. Arsenic	5.0 UF	15. Nickel	~~Aluminum~~
4. Barium	<41> P	16. Potassium	20 UF
5. Beryllium	5.0 UP	17. Selenium	<2540>P
6. Cadmium	4.0 UF	18. Silver	2.0 UF
7. Calcium	91.4 OP	19. Sodium	10 UP
8. Chromium	10 UP	20. Thallium	44,900 PE
9. Cobalt	10 UP	21. Vanadium	1.0 UF
10. Copper	6.0 UP	22. Zinc	10 UP
11. Iron	16 POP	23.	10 UP
12. Lead	<1.0> F	Percent Solids (%)	N/A
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and attached on cover page, however.

Comments: Aluminum Found
F = per. dil

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 968

① **Case Number:** 6889

Sample Site Name/Code: Hudson River Psyc

② **SAMPLE CONCENTRATION** (Check One)
- [X] Low Concentration
- [ ] Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- [ ] Water
- [X] Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: Charlie Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel:

J. Bullis
(Name)

201-225-6160
(Phone)

Sampling Date: 2/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil (Sed) Pest/PCB	1	8 oz

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164 935
Airbill Number:

⑧ **Sample Description**
- [ ] Surface Water
- [ ] Ground Water
- [ ] Leachate
- [ ] Mixed Media
- [X] Solids
- [ ] Other (specify) _____

⑨ **Sample Location**

NY53 - SED 1

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Inors MBI 467

SMO COPY

SED-1

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-968

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23902
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH N/A
Percent Moisture: 39.6

CAS Number		ug/Kg
74-87-3	Chloromethane	17 u
74-83-9	Bromomethane	17 u
75-01-4	Vinyl Chloride	17 u
75-00-3	Chloroethane	17 u
75-09-2	Methylene Chloride	8 u
67-64-1	Acetone	17 u
75-15-0	Carbon Disulfide	8 u
75-35-4	1,1-Dichloroethene	8 u
75-34-3	1,1-Dichloroethane	8 u
156-60-5	Trans-1,2-Dichloroethene	8 u
67-66-3	Chloroform	8 u
107-06-2	1,2-Dichloroethane	8 u
78-93-3	2-butanone	17 u
71-55-6	1,1,1-Trichloroethane	8 u
56-23-5	Carbon Tetrachloride	8 u
108-05-4	Vinyl Acetate	17 u
75-27-4	Bromodichloromethane	8 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	8 u
10061-02-6	Trans-1,3-Dichloropropene	8 u
79-01-6	Trichloroethene	8 u
124-48-1	Dibromochloromethane	8 u
79-00-5	1,1,2-Trichloroethane	8 u
71-43-2	Benzene	8 u
10061-01-5	cis-1,3-Dichloropropene	8 u
110-75-8	2-chloroethylvinylether	17 u
75-25-2	Bromoform	8 u
108-10-1	4-Methyl-2-Pentanone	17 u
591-78-6	2-Hexanone	17 u
127-18-4	Tetrachloroethene	8 u
79-34-5	1,1,2,2-Tetrachloroethane	8 u
108-88-3	Toluene	8 u
108-90-7	Chlorobenzene	8 u
100-41-4	Ethylbenzene	8 u
100-42-5	Styrene	8 u
	Total Xylenes	8 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

100081

SED-1

ersar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI968

se No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/05/87

Date Analyzed: 03/18/87

Conc/Dil Factor: 68.5

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	680 u
111-44-4	bis(2-Chloroethyl)Ether	680 u
95-57-8	2-Chlorophenol	680 u
541-73-1	1,3-Dichlorobenzene	680 u
106-46-7	1,4-Dichlorobenzene	680 u
100-51-6	Benzyl Alcohol	680 u
95-50-1	1,2-Dichlorobenzene	680 u
95-48-7	2-Methylphenol	680 u
39638-32-9	bis(2-chloroisopropyl)ether	680 u
106-44-5	4-methylphenol	680 u
621-64-7	N-Nitroso-Di-n-propylamine	680 u
67-72-1	Hexachloroethane	680 u
98-95-3	Nitrobenzene	680 u
78-59-1	Isophorone	680 u
88-75-5	2-Nitrophenol	680 u
105-67-9	2,4-dimethylphenol	680 u
65-85-0	Benzoic Acid	3400 u
111-91-1	bis(2-chloroethoxy)methane	680 u
120-83-2	2,4-dichlorophenol	680 u
120-82-1	1,2,4-trichlorobenzene	680 u
91-20-3	Naphthalene	1100 ✓
106-47-8	4-Chloroaniline	680 u
87-68-3	Hexachlorobutadiene	680 u
59-50-7	4-chloro-3-methylphenol	680 u
91-57-6	2-methylnaphthalene	1000 ✓
77-47-4	Hexachlorocyclopentadiene	680 u
88-06-2	2,4,6-Trichlorophenol	680 u
95-95-4	2,4,5-Trichlorophenol	3400 u
91-58-7	2-Chloronaphthalene	680 u
88-74-4	2-Nitroaniline	3400 u
131-11-3	Dimethyl Phthalate	680 u
208-96-8	Acenaphthylene	680 u
99-09-2	3-Nitroaniline	3400 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	920 ✓
51-28-5	2,4-Dinitrophenol	3400 u
100-02-7	4-Nitrophenol	3400 u
132-64-9	Dibenzofuran	760 ✓
121-14-2	2,4-Dinitrotoluene	680 u
606-20-2	2,6-Dinitrotoluene	680 u
84-66-2	Diethylphthalate	680 u
7005-22-3	4-Chlorophenyl-phenylether	680 u
86-73-7	Fluorene	1100 ✓
100-01-6	4-Nitroaniline	3400 u
534-52-1	4,6-dinitro-2-methylphenol	3400 u
86-30-6	N-Nitrosodiphenylamine (1)	680 u
101-55-3	4-Bromophenyl-phenylether	680 u
118-74-1	Hexachlorobenzene	680 u
87-86-5	Pentachlorophenol	3400 u
85-01-8	Phenanthrene	8100 ✓
120-12-7	Anthracene	1700 ✓
84-74-2	Di-n-butylphthalate	680 u
206-44-0	Fluoranthene	9000 ✓
129-00-0	Pyrene	6400 ✓
85-68-7	Butylbenzylphthalate	680 u
91-94-1	3,3'-Dichlorobenzidine	1360 u
56-55-3	Benzo(a)anthracene	4200 ✓
117-81-7	bis(2-Ethylhexyl)Phthalate	680 u
218-01-9	Chrysene	4600 ✓
117-84-0	Di-n-Octylphthalate	680 u
205-99-2	Benzo(b)Fluoranthene	5100 ✓
207-08-9	Benzo(k)Fluoranthene	3300 ✓
50-32-8	Benzo(a)pyrene	4300 ✓
193-39-5	Indeno(1,2,3-cd)Pyrene	1700 ✓
53-70-3	Dibenz(a,h)Anthracene	680 u
191-24-2	Benzo(g,h,i)Perylene	1600 ✓

100082

SED - 1

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 968

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/12/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor: 1.00

Percent Moisture(decanted): 39.60

CAS Number		ug/kg
319-84-6	alpha-BHC	5.5 u
319-85-7	beta-BHC	5.5 u
319-86-8	delta-BHC	5.5 u
58-89-9	gamma-BHC (Lindane)	~~5.5 u~~
76-44-8	Heptachlor	5.5 u
309-00-2	Aldrin	5.5 u
1024-57-3	Heptachlor Epoxide	5.5 u
959-98-8	Endosulfan I	5.5 u
60-57-1	Dieldrin	11 u
72-55-9	4,4'-DDE	11 u
72-20-8	Endrin	11 u
33213-65-9	Endosulfan II	11 u
72-54-8	4,4'-DDD	11 u
1031-07-8	Endosulfan Sulfate	11 u
50-29-3	4,4'-DDT	11 u
72-43-5	Methoxychlor	11 u
53494-70-5	Endrin Ketone	11 u
57-74-9	Chlordane	55 u
8001-35-2	Toxaphene	110 u
12674-11-2	Aroclor-1016	55 u
11104-28-2	Aroclor-1221	55 u
11141-16-5	Aroclor-1232	55 u
53469-21-9	Aroclor-1242	55 u
12672-29-6	Aroclor-1248	55 u
11097-69-1	Aroclor-1254	110 u
11096-82-5	Aroclor-1260	110 u

Correct

~~F~~ - SUSPECTED FALSE-POSITIVE RESULT. RESULTS QUALIFY FOR ID IN BOTH ANALYSES, HOWEVER LACK OF AGREEMENT BETWEEN THE CALCULATED RESULTS MAKES THE ID SUSPECT.
AD
3/30/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.11 Vt 20000 Vi 2.00

100083

SED - 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-968

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	124-38-9	CARBON DIOXIDE	VOA	27	28 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

SED - 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI968

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		UNKNOWN	BNA	615	2,800 JB.
12.		UNKNOWN	BNA	658	1,300 J...
13.		UNKNOWN	BNA	718	740 J...
14.		UNKNOWN SUBSTITUTED NAPHTHALENE	BNA	1131	620 J...
15.		UNKNOWN SUBSTITUTED NAPHTHALENE	BNA	1248	490 J...
16.		UNKNOWN	BNA	1565	340 J...
17.	74410-42-7	D-GALACTITOL, 2-(ACETYLMETHYLAMINO)-2-DEDXY-3, 4, 6, TRI-..	BNA	1647	1,100 J...
18.		UNKNOWN SUBSTITUTED POLYAROMATIC HYDROCARBON	BNA	1701	600 J...
19.		UNKNOWN SUBSTITUTED POLYAROMATIC HYDROCARBON	BNA	1706	830 J...
110.		UNKNOWN POLYCYCLIC AROMATIC	BNA	1723	1,300 J...
111.		UNKNOWN	BNA	1764	960 J...
112.		UNKNOWN	BNA	1952	1,300 J...
113.		UNKNOWN SUBSTITUTED BENZO[B]NAPHTHO	BNA	2073	650 J...
114.		UNKNOWN	BNA	2079	460 J...
115.		UNKNOWN POLYCYCLIC AROMATIC	BNA	2140	880 J...
116.		UNKNOWN HYDROCARBON	BNA	2212	740 J...
117.		UNKNOWN	BNA	2362	2,700 J...
118.		UNKNOWN POLYCYCLIC AROMATIC	BNA	2412	2,800 J...
119.		UNKNOWN	BNA	2526	860 J...
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

100085

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 467

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER PSYCH

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
___ Water
X Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer
Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) JANE BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___
(specify) 81 968
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level
On Sample Bottle
Check Analysis required
___ Total Metals
___ Cyanide

NY53-SED1

SMO COPY

SED 1

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-467

Date 4-2-87

INORGANIC ANALYSES DATA SHEET

LAB NAME Century Laboratories, Inc.

CASE NO. 6479

SOW NO. 785

LAB SAMPLE ID. NO. 0018-01

QC REPORT NO. 6479 0M1

Elements Identified and Measured

Concentration: Low ✓

Matrix: Water _____ Soil ✓ Sludge _____ Sediment _____ Other _____

ug/L or mg/Kg dry weight (Circle One)

1. Aluminum	8010 P	13. Manganese	7400P*
2. Antimony	8.9UPN	14. Mercury	2040P
3. Arsenic	12FN	15. Nickel	0.25UN
4. Barium	80P	16. Potassium	22P
5. Beryllium	1.5UP	17. Selenium	[444]P
6. Cadmium	1.2UP	18. Silver	0.62UF
7. Calcium	9470P*	19. Sodium	3.0UP
8. Chromium	1FP*	20. Thallium	[illegible]
9. Cobalt	[3.F]P	21. Vanadium	0.31UFN
10. Copper	35P	22. Zinc	27P
11. Iron	31 700P	23. Cyanide	14UP
12. Lead	32Fs	Percent Solids (%)	65.51

Comments: For reporting results to EPA, standard units published are used as defined on cover page. Additional digits or decimals exceeding these are encouraged. Deletion of any digits must be explained and recorded on cover page, however.

Comments: Clear liquid medium dark soil

Lab Manager Kenneth Bond

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313—703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 476

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER BYE

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
X Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer
Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier:
Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
X Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
___ Other
(specify) BI977
MATCHES ORGANIC SAMPLE NO. N953-SW2

(8) Mark Volume Level
On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

SMO COPY

SW-2

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-476

Date 6-2-89

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.

CASE NO. 6449

SOW NO. 785

LAB SAMPLE ID. NO. 0014-10

QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓

Matrix: Water ✓ Soil ____ Sediment ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle one)

1. Aluminum	20.0UPE	13. Manganese	0.5=DP*
2. Antimony	~~20.0UP~~	14. Mercury	86P
3. Arsenic	5.0UF	15. Nickel	~~0.20UP~~
4. Barium	<12>P	16. Nickel	20.0UP
5. Beryllium	5.0UP	17. Potassium	<903>P
6. Cadmium	4.0UP	18. Selenium	5.0UF
7. Calcium	64.300P	19. Silver	10.0UP
8. Chromium	10.0UP	20. Sodium	43,400PE
9. Cobalt	10.0UP	21. Thallium	1.0UFN
10. Copper	6.0UP	22. Vanadium	10.0UP
11. Iron	346P	23. Zinc	10.0UP
12. Lead	1.0UF		

Cyanide N/A

Percent Solids (%) N/A

Comment: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of all flags must be explained and attached to cover page, however.

Comments: Clear liquid
E = Per. dil.

Lab Manager Kenneth Sand

U.S. ENVIRONMENTAL PROTECTION AGENCY, HWL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 969

① **Case Number:** 6889

Sample Site Name/Code: Hudson River PSE

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- ___ Water
- X Soil/Sediment

④ **Ship To:** Versar Inc.
Attn: Charlie Carter
Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel:
S. Bullis (Name)
201-225-6160 (Phone)

Sampling Date: 2/26/87 (Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil/Sed Pest/PCB	1	8 oz

⑦ **Shipping Information**
Federal Express — Name of Carrier
2/26/87 — Date Shipped:
495164935 — Airbill Number:

⑧ **Sample Description**
- ___ Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- X Solids
- ___ Other (specify) _____

⑨ **Sample Location**
N453 - SED2

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)
Matches Inors. MB1-468

SMO COPY

SED - 2

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-969

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23903
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 40.6

CAS Number		ug/Kg
74-87-3	Chloromethane	17 u
74-83-9	Bromomethane	17 u
75-01-4	Vinyl Chloride	17 u
75-00-3	Chloroethane	17 u
75-09-2	Methylene Chloride	8 u
67-64-1	Acetone	8 u
75-15-0	Carbon Disulfide	8 u
75-35-4	1,1-Dichloroethene	8 u
75-34-3	1,1-Dichloroethane	8 u
156-60-5	Trans-1,2-Dichloroethene	8 u
67-66-3	Chloroform	8 u
107-06-2	1,2-Dichloroethane	8 u
78-93-3	2-butanone	17 u
71-55-6	1,1,1-Trichloroethane	8 u
56-23-5	Carbon Tetrachloride	8 u
108-05-4	Vinyl Acetate	17 u
75-27-4	Bromodichloromethane	8 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	8 u
10061-02-6	Trans-1,3-Dichloropropene	8 u
79-01-6	Trichloroethene	8 u
124-48-1	Dibromochloromethane	8 u
79-00-5	1,1,2-Trichloroethane	8 u
71-43-2	Benzene	8 u
10061-01-5	cis-1,3-Dichloropropene	8 u
110-75-8	2-chloroethylvinylether	17 u
75-25-2	Bromoform	8 u
108-10-1	4-Methyl-2-Pentanone	17 u
591-78-6	2-Hexanone	17 u
127-18-4	Tetrachloroethene	8 u
79-34-5	1,1,2,2-Tetrachloroethane	8 u
108-88-3	Toluene	2 J
108-90-7	Chlorobenzene	8 u
100-41-4	Ethylbenzene	8 u
100-42-5	Styrene	8 u
	Total Xylenes	8 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

100198

SED-2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI969

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/05/87

Date Analyzed: 03/19/87

Conc/Dil Factor: 68.18

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	680 u
111-44-4	bis(2-Chloroethyl)Ether	680 u
95-57-8	2-Chlorophenol	680 u
541-73-1	1,3-Dichlorobenzene	680 u
106-46-7	1,4-Dichlorobenzene	680 u
100-51-6	Benzyl Alcohol	680 u
95-50-1	1,2-Dichlorobenzene	680 u
95-48-7	2-Methylphenol	680 u
39638-32-9	bis(2-chloroisopropyl)ether	680 u
106-44-5	4-methylphenol	680 u
621-64-7	N-Nitroso-Di-n-propylamine	680 u
67-72-1	Hexachloroethane	680 u
98-95-3	Nitrobenzene	680 u
78-59-1	Isophorone	680 u
88-75-5	2-Nitrophenol	680 u
105-67-9	2,4-dimethylphenol	680 u
65-85-0	Benzoic Acid	3400 u
111-91-1	bis(2-chloroethoxy)methane	680 u
120-83-2	2,4-dichlorophenol	680 u
120-82-1	1,2,4-trichlorobenzene	680 u
91-20-3	Naphthalene	190 J
106-47-8	4-Chloroaniline	680 u
87-68-3	Hexachlorobutadiene	680 u
59-50-7	4-chloro-3-methylphenol	680 u
91-57-6	2-methylnaphthalene	680 u
77-47-4	Hexachlorocyclopentadiene	680 u
88-06-2	2,4,6-Trichlorophenol	680 u
95-95-4	2,4,5-Trichlorophenol	3400 u
91-58-7	2-Chloronaphthalene	680 u
88-74-4	2-Nitroaniline	3400 u
131-11-3	Dimethyl Phthalate	680 u
208-96-8	Acenaphthylene	680 u
99-09-2	3-Nitroaniline	3400 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	290 J
51-28-5	2,4-Dinitrophenol	3400 u
100-02-7	4-Nitrophenol	3400 u
132-64-9	Dibenzofuran	230 J
121-14-2	2,4-Dinitrotoluene	680 u
606-20-2	2,6-Dinitrotoluene	680 u
84-66-2	Diethylphthalate	680 u
7005-22-3	4-Chlorophenyl-phenylether	680 u
86-73-7	Fluorene	360
100-01-6	4-Nitroaniline	3400 u
534-52-1	4,6-dinitro-2-methylphenol	3400 u
86-30-6	N-Nitrosodiphenylamine (1)	680 u
101-55-3	4-Bromophenyl-phenylether	680 u
118-74-1	Hexachlorobenzene	680 u
87-86-5	Pentachlorophenol	3400 u
85-01-8	Phenanthrene	2800
120-12-7	Anthracene	510 J
84-74-2	Di-n-butylphthalate	680 u
206-44-0	Fluoranthene	2700
129-00-0	Pyrene	2000
85-68-7	Butylbenzylphthalate	680 u
91-94-1	3,3'-Dichlorobenzidine	1360 u
56-55-3	Benzo(a)anthracene	970
117-81-7	bis(2-Ethylhexyl)Phthalate	680 u
218-01-9	Chrysene	1000
117-84-0	Di-n-Octylphthalate	680 u
205-99-2	Benzo(b)Fluoranthene	770
207-08-9	Benzo(k)Fluoranthene	730
50-32-8	Benzo(a)pyrene	810
193-39-5	Indeno(1,2,3-cd)Pyrene	680 u
53-70-3	Dibenz(a,h)Anthracene	680 u
191-24-2	Benzo(g,h,i)Perylene	680 u

(1)-Cannot be separated from diphenylamine

SED -2

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 969

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/13/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor: 1.00

Percent Moisture(decanted): 40.60

CAS Number		ug/kg
319-84-6	alpha-BHC	5.5 u
319-85-7	beta-BHC	5.5 u
319-86-8	delta-BHC	5.5 u
58-89-9	gamma-BHC (Lindane)	5.5 u
76-44-8	Heptachlor	5.5 u
309-00-2	Aldrin	5.5 u
1024-57-3	Heptachlor Epoxide	5.5 u
959-98-8	Endosulfan I	5.5 u
60-57-1	Dieldrin	11 u
72-55-9	4,4'-DDE 7.8 J	J7.8
72-20-8	Endrin	11 u
33213-65-9	Endosulfan II	11 u
72-54-8	4,4'-DDD	11 u
1031-07-8	Endosulfan Sulfate	11 u
50-29-3	4,4'-DDT	11 u
72-43-5	Methoxychlor	11 u
53494-70-5	Endrin Ketone	11 u
57-74-9	Chlordane	55 u
8001-35-2	Toxaphene	110 u
12674-11-2	Aroclor-1016	55 u
11104-28-2	Aroclor-1221	55 u
11141-16-5	Aroclor-1232	55 u
53469-21-9	Aroclor-1242	55 u
12672-29-6	Aroclor-1248	55 u
11097-69-1	Aroclor-1254	110 u
11096-82-5	Aroclor-1260	110 u

J- ESTIMATED CONCENTRATION; COMPOUNDS MEETS ID CRITERIA IN BOTH ANALYSES, BUT CALCULATED RESULTS ARE BELOW DETECTION LIMIT IN ONE OR BOTH ANALYSES. RELATIVE AGREEMENT BETWEEN THE RESULTS SUPPORT THE ID AND ITS ESTIMATED RESULTS.
ADD 3/30/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.80

Vt 20000 Vi 2.00

100200

␣ ␣

SED -2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

IBI-969

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	124-38-9	CARBON DIOXIDE	VOA	27	79 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

100201

SED - 2

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI969

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.		UNKNOWN	BNA	615	2,800 JB.
2.		UNKNOWN	BNA	658	750 J...
3.		UNKNOWN	BNA	717	470 J...
4.		UNKNOWN	BNA	740	220 J...
5.		UNKNOWN	BNA	796	500 J...
6.	65-85-0	BENZOIC ACID	BNA	933	36 J,T.
7.		UNKNOWN	BNA	1645	210 J...
8.		UNKNOWN SUBSTITUTED POLYAROMATIC HYDROCARBON	BNA	1704	240 J...
9.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	1721	320 J...
10.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	1762	240 J...
11.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	1950	470 J...
12.		UNKNOWN	BNA	2093	270 J...
13.		UNKNOWN	BNA	2137	330 J...
14.		UNKNOWN HYDROCARBON	BNA	2210	510 J...
15.		UNKNOWN HYDROCARBON	BNA	2313	740 J...
16.		UNKNOWN HYDROCARBON	BNA	2359	1,300 J...
17.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	2405	580 J...
18.		UNKNOWN	BNA	2567	570 J...
19.	193-39-5	INDENO[1,2,3-CD]PYRENE	BNA	2803	170 J,T.
20.	191-24-2	BENZO[GHI]PERYLENE	BNA	2916	180 J,T.
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

T - Spectrum for this HSL Compound does not meet CLP Criteria for confirmation, but does indicate compound presence.

100202

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY — HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number **MBI 468**

(1) **Case Number:** 6889
Sample Site Name/Code:
HUDSON RIVER PCBs

(2) **SAMPLE CONCENTRATION**
(Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX**
(Check One)
___ Water
X Soil/Sediment

(4) **Ship To:**
Century Labs

Attn: KEN BOND

Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) J BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) **Sample Description:**
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___
(specify) BI 969
MATCHES ORGANIC SAMPLE NO. ___

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
X Total Metals
___ Cyanide

NYS3 - SED 2

SMO COPY

SED - 2

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1- 414

Date 2-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 6449
SOW NO. 785
LAB SAMPLE ID. NO. 001F-05
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water _____ Soil ✓ Sludge _____ Other _____

ug/L or ~~mg/kg~~ dry weight (Circle One)

1. Aluminum	11,900P	13. Barium	93.6P+
2. Antimony	2.5PN J	14. Beryllium	2.2P 623P
3. Arsenic	4.1F [2.0] FSN J	15. Boron	0.17U+
4. Barium	[42]P	16. Cadmium	2.2P
5. Beryllium	1.4UP	17. Calcium	<679> P
6. Cadmium	1.1UP	18. Selenium	0.52UF
7. Calcium	7920P+	19. Silver	2.4UP
8. Chromium	19.4P+	20. Sodium	[illegible]
9. Cobalt	2.4UP	21. Thallium	0.24UFN
10. Copper	31P	22. Vanadium	23P
11. Iron	33,100P	23. Zinc	150P
12. Lead	29FS	Percent Solids (%)	70.70
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and included on cover page, however.

Comments: ~~Aluminum dark pool~~ Aluminum light
medium dark pool

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY, HWI Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 - FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 970

① **Case Number:** 6889

Sample Site Name/Code: Hudson River Psyc

② **SAMPLE CONCENTRATION** (Check One)

X Low Concentration
___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)

___ Water
X Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: Charlie Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel:

S. Bullis
(Name)

201-225-6160
(Phone)

Sampling Date: 2/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
PEST/PCB	1	8 oz

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**

___ Surface Water ___ Mixed Media
___ Ground Water X Solids
___ Leachate ___ Other (specify) _____

⑨ **Sample Location**

N453 SED3

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Dnrs. MB1489

SMO COPY

SED -3

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-970

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23904
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 43.2

CAS Number		ug/Kg
74-87-3	Chloromethane	18 u
74-83-9	Bromomethane	18 u
75-01-4	Vinyl Chloride	18 u
75-00-3	Chloroethane	18 u
75-09-2	Methylene Chloride	9 u
67-64-1	Acetone	18 u
75-15-0	Carbon Disulfide	9 u
75-35-4	1,1-Dichloroethene	9 u
75-34-3	1,1-Dichloroethane	9 u
156-60-5	Trans-1,2-Dichloroethene	9 u
67-66-3	Chloroform	9 u
107-06-2	1,2-Dichloroethane	9 u
78-93-3	2-butanone	18 u
71-55-6	1,1,1-Trichloroethane	9 u
56-23-5	Carbon Tetrachloride	9 u
108-05-4	Vinyl Acetate	18 u
75-27-4	Bromodichloromethane	9 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	9 u
10061-02-6	Trans-1,3-Dichloropropene	9 u
79-01-6	Trichloroethene	9 u
124-48-1	Dibromochloromethane	9 u
79-00-5	1,1,2-Trichloroethane	9 u
71-43-2	Benzene	9 u
10061-01-5	cis-1,3-Dichloropropene	9 u
110-75-8	2-chloroethylvinylether	18 u
75-25-2	Bromoform	9 u
108-10-1	4-Methyl-2-Pentanone	18 u
591-78-6	2-Hexanone	18 u
127-18-4	Tetrachloroethene	9 u
79-34-5	1,1,2,2-Tetrachloroethane	9 u
108-88-3	Toluene	9 u
108-90-7	Chlorobenzene	9 u
100-41-4	Ethylbenzene	9 u
100-42-5	Styrene	9 u
	Total Xylenes	9 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

100313

SED - 3

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI970

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/05/87

Date Analyzed: 03/20/87

Conc/Dil Factor: 1/70.83

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	700 u
111-44-4	bis(2-Chloroethyl)Ether	700 u
95-57-8	2-Chlorophenol	700 u
541-73-1	1,3-Dichlorobenzene	700 u
106-46-7	1,4-Dichlorobenzene	700 u
100-51-6	Benzyl Alcohol	700 u
95-50-1	1,2-Dichlorobenzene	700 u
95-48-7	2-Methylphenol	700 u
39638-32-9	bis(2-chloroisopropyl)ether	700 u
106-44-5	4-methylphenol	700 u
621-64-7	N-Nitroso-Di-n-propylamine	700 u
67-72-1	Hexachloroethane	700 u
98-95-3	Nitrobenzene	700 u
78-59-1	Isophorone	700 u
88-75-5	2-Nitrophenol	700 u
105-67-9	2,4-dimethylphenol	700 u
65-85-0	Benzoic Acid	3600 u
111-91-1	bis(2-chloroethoxy)methane	700 u
120-83-2	2,4-dichlorophenol	700 u
120-82-1	1,2,4-trichlorobenzene	700 u
91-20-3	Naphthalene	700 u
106-47-8	4-Chloroaniline	700 u
87-68-3	Hexachlorobutadiene	700 u
59-50-7	4-chloro-3-methylphenol	700 u
91-57-6	2-methylnaphthalene	700 u
77-47-4	Hexachlorocyclopentadiene	700 u
88-06-2	2,4,6-Trichlorophenol	700 u
95-95-4	2,4,5-Trichlorophenol	3600 u
91-58-7	2-Chloronaphthalene	700 u
88-74-4	2-Nitroaniline	3600 u
131-11-3	Dimethyl Phthalate	700 u
208-96-8	Acenaphthylene	700 u
99-09-2	3-Nitroaniline	3600 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	700 u
51-28-5	2,4-Dinitrophenol	3600 u
100-02-7	4-Nitrophenol	3600 u
132-64-9	Dibenzofuran	700 u
121-14-2	2,4-Dinitrotoluene	700 u
606-20-2	2,6-Dinitrotoluene	700 u
84-66-2	Diethylphthalate	700 u
7005-22-3	4-Chlorophenyl-phenylether	700 u
86-73-7	Fluorene	700 u
100-01-6	4-Nitroaniline	3600 u
534-52-1	4,6-dinitro-2-methylphenol	3600 u
86-30-6	N-Nitrosodiphenylamine (1)	700 u
101-55-3	4-Bromophenyl-phenylether	700 u
118-74-1	Hexachlorobenzene	700 u
87-86-5	Pentachlorophenol	3600 u
85-01-8	Phenanthrene	180 J
120-12-7	Anthracene	700 u
84-74-2	Di-n-butylphthalate	700 u
206-44-0	Fluoranthene	290 J
129-00-0	Pyrene	280 J
85-68-7	Butylbenzylphthalate	700 u
91-94-1	3,3'-Dichlorobenzidine	1420 u
56-55-3	Benzo(a)anthracene	700 u
117-81-7	bis(2-Ethylhexyl)Phthalate	180 J
218-01-9	Chrysene	220 J
117-84-0	Di-n-Octylphthalate	700 u
205-99-2	Benzo(b)Fluoranthene	700 u
207-08-9	Benzo(k)Fluoranthene	700 u
50-32-8	Benzo(a)pyrene	700 u
193-39-5	Indeno(1,2,3-cd)Pyrene	700 u
53-70-3	Dibenz(a,h)Anthracene	700 u
191-24-2	Benzo(g,h,i)Perylene	700 u

(1)-Cannot be separated from diphenylamine

SED - 3

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 970

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/13/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 43.20

CAS Number		ug/kg	
319-84-6	alpha-BHC	5.7 u	
319-85-7	beta-BHC	5.7 u	
319-86-8	delta-BHC	5.7 u	
58-89-9	gamma-BHC (Lindane)	5.7 u	
76-44-8	Heptachlor	5.7 u	
309-00-2	Aldrin	5.7 u	
1024-57-3	Heptachlor Epoxide	5.7 u	
959-98-8	Endosulfan I	5.7 u	
60-57-1	Dieldrin	11 u	
72-55-9	4,4'-DDE	J16	16J
72-20-8	Endrin	11 u	
33213-65-9	Endosulfan II	11 u	
72-54-8	4,4'-DDD	J6.2	6.2J
1031-07-8	Endosulfan Sulfate	11 u	
50-29-3	4,4'-DDT	11 u	
72-43-5	Methoxychlor	11 u	
53494-70-5	Endrin Ketone	11 u	
57-74-9	Chlordane	57 u	
8001-35-2	Toxaphene	110 u	
12674-11-2	Aroclor-1016	57 u	
11104-28-2	Aroclor-1221	57 u	
11141-16-5	Aroclor-1232	57 u	
53469-21-9	Aroclor-1242	57 u	
12672-29-6	Aroclor-1248	57 u	
11097-69-1	Aroclor-1254	110 u	
11096-82-5	Aroclor-1260	110 u	

J- ESTIMATED CONCENTRATION; COMPOUNDS MEET ID CRITERIA IN BOTH QUANT/CONF., BUT CALCULATED RESULTS ARE BELOW THE MDL IN ONE OR BOTH ANALYSES. RELATIVE AGREEMENT BETWEEN THE RESULTS SUPPORT THESE ID'S AND THEIR ESTIMATED VALUES

AD 3/00/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 31.06 Vt 20000 Vi 2.00

100315

SED -3

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-970

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	47 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

100316

SED - 3

Versar Inc., Laboratory Operations
5850 Versar Center, Springfield VA 22151 (703) 750-3000

BI970

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)	
1.		UNKNOWN	BNA	564	310	J
2.		UNKNOWN	BNA	615	4,100	JB
3.		UNKNOWN	BNA	658	890	J
4.		UNKNOWN	BNA	672	420	J
5.		UNKNOWN	BNA	718	1,200	J
6.		UNKNOWN	BNA	740	420	J
7.		UNKNOWN	BNA	797	480	J
8.	65-85-0	BENZOIC ACID	BNA	933	38	J,T
9.		UNKNOWN	BNA	2037	460	J
10.		UNKNOWN	BNA	2078	2,800	J
11.		UNKNOWN	BNA	2094	370	J
12.		UNKNOWN HYDROCARBON	BNA	2107	1,200	J
13.		UNKNOWN	BNA	2210	630	J
14.		UNKNOWN	BNA	2278	310	J
15.		UNKNOWN	BNA	2314	890	J
16.		UNKNOWN HYDROCARBON	BNA	2359	1,600	J
17.		UNKNOWN	BNA	2506	430	J
18.		UNKNOWN	BNA	2567	1,000	J
19.		UNKNOWN	BNA	2660	470	J
20.						
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						

T - Spectrum for this HSL compound does not meet CLP criteria for confirmation, but does indicate compound presence.

100317

U.S. ENVIRONMENTAL PROTECTION AGENCY — REGION II Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number: MBI 469

(1) **Case Number:** 6889
Sample Site Name/Code: HUDSON RIVER B3C

(2) **SAMPLE CONCENTRATION** (Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX** (Check One)
___ Water
X Soil/Sediment

(4) **Ship To:** Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) **Sample Description:** (Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___ (specify) B1970
MATCHES ORGANIC SAMPLE NO. ___

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
X Total Metals
__ Cyanide

NY53 SED3

SMO COPY

SED - 3

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-469

Date 6-2-89

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 6449
SOW NO. 785
LAB SAMPLE ID. NO. 0014-01
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓
Matrix: Water ____ Soil ✓ Sludge ____ Sediment ____ Other ____

ug/L or (ug/Kg) dry weight (Circle One)

1. Aluminum	9200P	13. Manganese	4440P
2. Antimony	14UPN J	14. Mercury	2710P
3. Arsenic	8.0FsN J	15. Nickel	0.42UN
4. Barium	116P	16. Potassium	9.7P
5. Beryllium	2.4UP	17. Selenium	<484>P
6. Cadmium	1.9UP	18. Silicon	0.95uF
7. Calcium	6230P	19. Silver	53P
8. Chromium	4.2UF	20. Sodium	<6787P
9. Cobalt	4.2UP	21. Thallium	0.47UFN
10. Copper	2.9UP	22. Vanadium	<13>P
11. Iron	53,200P	23. Zinc	150P
12. Lead	95Fs	Percent Solids (%)	41.35
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and provided on cover page, however.

Comments: Medium dark soil
~~Light soil~~

Lab Manager: Kenneth Ford

U.S. ENVIRONMENTAL PROTECTION AGENCY, CLP/EPA Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 - (703) 557-2490 - FTS 557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 971

① **Case Number:** 6889

Sample Site Name/Code: Hudson River Byc

② **SAMPLE CONCENTRATION** (Check One)

X Low Concentration
___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)

___ Water
X Soil/Sediment

④ **Ship To:**

Versar Inc.

Attn: Charlie Carter ~~Ken Bond~~

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel:

S. Bullis
(Name)

201-225-6160
(Phone)

Sampling Date:

8/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	802
Soil/Sediment (VOA)	1	120ml
Other		
so.l/sed Pest PCB	1	802

⑦ **Shipping Information**

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495164935
Airbill Number:

⑧ **Sample Description**

___ Surface Water ___ Mixed Media
___ Ground Water X Solids
___ Leachate ___ Other (specify) _____

⑨ **Sample Location**

N953 SED 4

⑩ **Special Handling Instructions:**
(e.g., safety precautions, hazardous nature)

Matches Dnors. MB1470

SMO COPY

SED - 4

ar, Inc., Laboratory Operations
Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-971

ORGANICS ANALYSIS DATA SHEET (Page 1)

aboratory Name: VERSAR
ab Sample ID No: 23905
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 38.9

CAS Number		ug/Kg
74-87-3	Chloromethane	16 u
74-83-9	Bromomethane	16 u
75-01-4	Vinyl Chloride	16 u
75-00-3	Chloroethane	16 u
75-09-2	Methylene Chloride	8 u
67-64-1	Acetone	16 u
75-15-0	Carbon Disulfide	8 u
75-35-4	1,1-Dichloroethene	8 u
75-34-3	1,1-Dichloroethane	8 u
156-60-5	Trans-1,2-Dichloroethene	8 u
67-66-3	Chloroform	8 u
107-06-2	1,2-Dichloroethane	8 u
78-93-3	2-butanone	16 u
71-55-6	1,1,1-Trichloroethane	8 u
56-23-5	Carbon Tetrachloride	8 u
108-05-4	Vinyl Acetate	16 u
75-27-4	Bromodichloromethane	8 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	8 u
10061-02-6	Trans-1,3-Dichloropropene	8 u
79-01-6	Trichloroethene	8 u
124-48-1	Dibromochloromethane	8 u
79-00-5	1,1,2-Trichloroethane	8 u
71-43-2	Benzene	8 u
10061-01-5	cis-1,3-Dichloropropene	8 u
110-75-8	2-chloroethylvinylether	16 u
75-25-2	Bromoform	8 u
108-10-1	4-Methyl-2-Pentanone	16 u
591-78-6	2-Hexanone	16 u
127-18-4	Tetrachloroethene	8 u
79-34-5	1,1,2,2-Tetrachloroethane	8 u
108-88-3	Toluene	8 u
108-90-7	Chlorobenzene	8 u
100-41-4	Ethylbenzene	8 u
100-42-5	Styrene	8 u
	Total Xylenes	8 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

200003

SED -4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI971

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/05/87

Date Analyzed: 03/20/87

Conc/Dil Factor: 1/660

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	660 u
111-44-4	bis(2-Chloroethyl)Ether	660 u
95-57-8	2-Chlorophenol	660 u
541-73-1	1,3-Dichlorobenzene	660 u
106-46-7	1,4-Dichlorobenzene	660 u
100-51-6	Benzyl Alcohol	660 u
95-50-1	1,2-Dichlorobenzene	660 u
95-48-7	2-Methylphenol	660 u
39638-32-9	bis(2-chloroisopropyl)ether	660 u
106-44-5	4-methylphenol	170 J j ✓
621-64-7	N-Nitroso-Di-n-propylamine	660 u
67-72-1	Hexachloroethane	660 u
98-95-3	Nitrobenzene	660 u
78-59-1	Isophorone	660 u
88-75-5	2-Nitrophenol	660 u
105-67-9	2,4-dimethylphenol	660 u
65-85-0	Benzoic Acid	3400 u
111-91-1	bis(2-chloroethoxy)methane	660 u
120-83-2	2,4-dichlorophenol	660 u
120-82-1	1,2,4-trichlorobenzene	660 u
91-20-3	Naphthalene	660 u
106-47-8	4-Chloroaniline	660 u
87-68-3	Hexachlorobutadiene	660 u
59-50-7	4-chloro-3-methylphenol	660 u
91-57-6	2-methylnaphthalene	660 u
77-47-4	Hexachlorocyclopentadiene	660 u
88-06-2	2,4,6-Trichlorophenol	660 u
95-95-4	2,4,5-Trichlorophenol	3400 u
91-58-7	2-Chloronaphthalene	660 u
88-74-4	2-Nitroaniline	3400 u
131-11-3	Dimethyl Phthalate	660 u
208-96-8	Acenaphthylene	660 u
99-09-2	3-Nitroaniline	3400 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	660 u
51-28-5	2,4-Dinitrophenol	3400 u
100-02-7	4-Nitrophenol	3400 u
132-64-9	Dibenzofuran	660 u
121-14-2	2,4-Dinitrotoluene	660 u
606-20-2	2,6-Dinitrotoluene	660 u
84-66-2	Diethylphthalate	660 u
7005-22-3	4-Chlorophenyl-phenylether	660 u
86-73-7	Fluorene	660 u
100-01-6	4-Nitroaniline	3400 u
534-52-1	4,6-dinitro-2-methylphenol	3400 u
86-30-6	N-Nitrosodiphenylamine (1)	660 u
101-55-3	4-Bromophenyl-phenylether	660 u
118-74-1	Hexachlorobenzene	660 u
87-86-5	Pentachlorophenol	3400 u
85-01-8	Phenanthrene	220 J k ✓
120-12-7	Anthracene	660 u
84-74-2	Di-n-butylphthalate	660 u
206-44-0	Fluoranthene	430 J ✓
129-00-0	Pyrene	390 J ✓
85-68-7	Butylbenzylphthalate	660 u
91-94-1	3,3'-Dichlorobenzidine	1340 u
56-55-3	Benzo(a)anthracene	210 J ✓
117-81-7	bis(2-Ethylhexyl)Phthalate	220 J ✓
218-01-9	Chrysene	260 J ✓
117-84-0	Di-n-Octylphthalate	660 u
205-99-2	Benzo(b)Fluoranthene	660 u
207-08-9	Benzo(k)Fluoranthene	660 u
50-32-8	Benzo(a)pyrene	660 u
193-39-5	Indeno(1,2,3-cd)Pyrene	660 u
53-70-3	Dibenz(a,h)Anthracene	660 u
191-24-2	Benzo(g,h,i)Perylene	660 u

(1)-Cannot be separated from diphenylamine

SED - 4

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 971

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/14/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 38.90

CAS Number		ug/kg
319-84-6	alpha-BHC	5.3 u
319-85-7	beta-BHC	5.3 u
319-86-8	delta-BHC	5.3 u
58-89-9	gamma-BHC (Lindane)	5.3 u
76-44-8	Heptachlor	5.3 u
309-00-2	Aldrin	5.3 u
1024-57-3	Heptachlor Epoxide	5.3 u
959-98-8	Endosulfan I	5.3 u
60-57-1	Dieldrin	11 u
72-55-9	4,4'-DDE	46
72-20-8	Endrin	11 u
33213-65-9	Endosulfan II	11 u
72-54-8	4,4'-DDD	11 u
1031-07-8	Endosulfan Sulfate	11 u
50-29-3	4,4'-DDT	85
72-43-5	Methoxychlor	11 u
53494-70-5	Endrin Ketone	11 u
57-74-9	Chlordane	53 u
8001-35-2	Toxaphene	110 u
12674-11-2	Aroclor-1016	53 u
11104-28-2	Aroclor-1221	53 u
11141-16-5	Aroclor-1232	53 u
53469-21-9	Aroclor-1242	53 u
12672-29-6	Aroclor-1248	53 u
11097-69-1	Aroclor-1254	110 u
11096-82-5	Aroclor-1260	110 u

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.82 Vt 20000 Vi 2.00

200005

SED - 4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-971

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	124-38-9	CARBON DIOXIDE	VOA	27	24 J
12.		UNKNOWN	VOA	545	6 J
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

200006

SED - 4

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI971

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	UNKNOWN		BNA	615	2,700 J
2.	UNKNOWN		BNA	658	1,100 J
3.	UNKNOWN		BNA	717	760 J
4.	UNKNOWN		BNA	2209	310 J
5.	UNKNOWN		BNA	2277	690 J
6.	UNKNOWN	HYDROCARBON	BNA	2312	890 J
7.	205-99-2	BENZO(B)FLUORANTHENE	BNA	2334	220 J,T.
8.	207-08-9	BENZO[K]FLUORANTHENE	BNA	2339	180 J,T.
9.	UNKNOWN		BNA	2358	2,300 J
10.	50-32-8	BENZO[A]PYRENE	BNA	2418	250 J,T.
11.	UNKNOWN		BNA	2566	1,300 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

T - Spectrum for this HSL compound does not meet CLP criteria for confirmation, but does indicate compound presence.

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 - 703/557-2490 - FTS/ 557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 470

(1) **Case Number:** 6889
Sample Site Name/Code:
HUDSON RIVER BYL

(2) **SAMPLE CONCENTRATION**
(Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX**
(Check One)
___ Water
X Soil/Sediment

(4) **Ship To:**
Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** EIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4951647773

(7) **Sample Description:**
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___
(specify) B1971
MATCHES ORGANIC SAMPLE NO. ___

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
___ Total Metals
___ Cyanide

NY53-SED4

SMO COPY

SED - 4

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MBI- 470

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 644
SOW NO. 785
LAB SAMPLE ID. NO. 0014-09
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or (mg/kg dry) weight (Circle One)

1. Aluminum	5560P	13. Barium	2160P *
2. Antimony	9.3PN J	14. Beryllium	4.2P
3. Arsenic	3.7FsN J	15. Boron	0.41UP
4. Barium	<29>P	16. Cadmium	6.2UP
5. Beryllium	1.5UP	17. Calcium	<402>P
6. Cadmium	1.2UP	18. Selenium	0.64UF
7. Calcium	3400P *	19. Silver	3.1UP
8. Chromium	3.1UP *	20. Sodium	~~4400P~~
9. Cobalt	3.1UP	21. Thallium	0.34UFN
10. Copper	31P	22. Vanadium	<4.0>P
11. Iron	10,400P	23. Zinc	111P
12. Lead	99Fs	Percent Solids (%)	59.25
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and included on cover page, however.

Comments: Medium dark soil
E=

Lab Manager Kenneth Ford

U.S. ENVIRONMENTAL PROTECTION AGENCY / EMSL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 703/557-2491 FTS/557-2491

ORGANICS TRAFFIC REPORT

Sample Number: BI 972

① **Case Number:** 6889

Sample Site Name/Code: Hudson Riv. Pkg

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- ___ Water
- X Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: Charlie Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel: J. Bullis (Name)

201-225-6160 (Phone)

Sampling Date: 2/26/87 (Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil/Sed Pest/PCB	1	8 oz

⑦ **Shipping Information**

Federal Express — Name of Carrier

2/26/87 — Date Shipped:

495 164 935 — Airbill Number:

⑧ **Sample Description**
- ___ Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- X Solids
- ___ Other (specify) ___

⑨ **Sample Location**

NY53 SED 5

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Inorg. MBI 471

SMO COPY

SED - 5

ar, Inc., Laboratory Operations
0 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-972

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23906
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 60.5

CAS Number		ug/Kg	CAS Number		ug/Kg
74-87-3	Chloromethane	25 u	78-87-5	1,2-Dichloropropane	13 u
74-83-9	Bromomethane	25 u	10061-02-6	Trans-1,3-Dichloropropene	13 u
75-01-4	Vinyl Chloride	25 u	79-01-6	Trichloroethene	13 u
75-00-3	Chloroethane	25 u	124-48-1	Dibromochloromethane	13 u
75-09-2	Methylene Chloride	13 u	79-00-5	1,1,2-Trichloroethane	13 u
67-64-1	Acetone	25 u	71-43-2	Benzene	13 u
75-15-0	Carbon Disulfide	13 u	10061-01-5	cis-1,3-Dichloropropene	13 u
75-35-4	1,1-Dichloroethene	13 u	110-75-8	2-chloroethylvinylether	25 u
75-34-3	1,1-Dichloroethane	13 u	75-25-2	Bromoform	13 u
156-60-5	Trans-1,2-Dichloroethene	13 u	108-10-1	4-Methyl-2-Pentanone	25 u
67-66-3	Chloroform	13 u	591-78-6	2-Hexanone	25 u
107-06-2	1,2-Dichloroethane	13 u	127-18-4	Tetrachloroethene	13 u
78-93-3	2-butanone	25 u	79-34-5	1,1,2,2-Tetrachloroethane	13 u
71-55-6	1,1,1-Trichloroethane	13 u	108-88-3	Toluene	13 u
56-23-5	Carbon Tetrachloride	13 u	108-90-7	Chlorobenzene	13 u
108-05-4	Vinyl Acetate	25 u	100-41-4	Ethylbenzene	13 u
75-27-4	Bromodichloromethane	13 u	100-42-5	Styrene	13 u
				Total Xylenes	13 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

200078

SED -5

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI972

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 3/5/87

Date Analyzed: 3/20/87

Conc/Dil Factor: 1/102.68

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-Liquid Extraction [ ]Yes

CAS Number		ug/Kg	CAS Number		ug/Kg
108-95-2	Phenol	1020 u	83-32-9	Acenaphthene	1020 u
111-44-4	bis(2-Chloroethyl)Ether	1020 u	51-28-5	2,4-Dinitrophenol	5200 u
95-57-8	2-Chlorophenol	1020 u	100-02-7	4-Nitrophenol	5200 u
541-73-1	1,3-Dichlorobenzene	1020 u	132-64-9	Dibenzofuran	1020 u
106-46-7	1,4-Dichlorobenzene	1020 u	121-14-2	2,4-Dinitrotoluene	1020 u
100-51-6	Benzyl Alcohol	1020 u	606-20-2	2,6-Dinitrotoluene	1020 u
95-50-1	1,2-Dichlorobenzene	1020 u	84-66-2	Diethylphthalate	1020 u
95-48-7	2-Methylphenol	1020 u	7005-22-3	4-Chlorophenyl-phenylether	1020 u
39638-32-9	bis(2-chloroisopropyl)ether	1020 u	86-73-7	Fluorene	1020 u
106-44-5	4-methylphenol	1020 u	100-01-6	4-Nitroaniline	5200 u
621-64-7	N-Nitroso-Di-n-propylamine	1020 u	534-52-1	4,6-dinitro-2-methylphenol	5200 u
67-72-1	Hexachloroethane	1020 u	86-30-6	N-Nitrosodiphenylamine (1)	1020 u
98-95-3	Nitrobenzene	1020 u	101-55-3	4-Bromophenyl-phenylether	1020 u
78-59-1	Isophorone	1020 u	118-74-1	Hexachlorobenzene	1020 u
88-75-5	2-Nitrophenol	1020 u	87-86-5	Pentachlorophenol	5200 u
105-67-9	2,4-dimethylphenol	1020 u	85-01-8	Phenanthrene	420 J ✓
65-85-0	Benzoic Acid	5200 u	120-12-7	Anthracene	1020 u
111-91-1	bis(2-chloroethoxy)methane	1020 u	84-74-2	Di-n-butylphthalate	1020 u
120-83-2	2,4-dichlorophenol	1020 u	206-44-0	Fluoranthene	740 J ✓
120-82-1	1,2,4-trichlorobenzene	1020 u	129-00-0	Pyrene	710 J ✓
91-20-3	Naphthalene	1020 u	85-68-7	Butylbenzylphthalate	220 J ✓
106-47-8	4-Chloroaniline	1020 u	91-94-1	3,3'-Dichlorobenzidine	2000 u
87-68-3	Hexachlorobutadiene	1020 u	56-55-3	Benzo(a)anthracene	420 J ✓
59-50-7	4-chloro-3-methylphenol	1020 u	117-81-7	bis(2-Ethylhexyl)Phthalate	1780 ✓
91-57-6	2-methylnaphthalene	1020 u	218-01-9	Chrysene	600 J ✓
77-47-4	Hexachlorocyclopentadiene	1020 u	117-84-0	Di-n-Octylphthalate	1020 u
88-06-2	2,4,6-Trichlorophenol	1020 u	205-99-2	Benzo(b)Fluoranthene	1020 u
95-95-4	2,4,5-Trichlorophenol	5200 u	207-08-9	Benzo(k)Fluoranthene	1020 u
91-58-7	2-Chloronaphthalene	1020 u	50-32-8	Benzo(a)pyrene	1020 u
88-74-4	2-Nitroaniline	5200 u	193-39-5	Indeno(1,2,3-cd)Pyrene	1020 u
131-11-3	Dimethyl Phthalate	1020 u	53-70-3	Dibenz(a,h)Anthracene	1020 u
208-96-8	Acenaphthylene	1020 u	191-24-2	Benzo(g,h,i)Perylene	1020 u
99-09-2	3-Nitroaniline	5200 u			

(1)-Cannot be separated from diphenylamine

200079

SED - 5

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 972

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/14/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 60.50

CAS Number		ug/kg
319-84-6	alpha-BHC	8.2 u
319-85-7	beta-BHC	8.2 u
319-86-8	delta-BHC	8.2 u
58-89-9	gamma-BHC (Lindane)	8.2 u
76-44-8	Heptachlor	8.2 u
309-00-2	Aldrin	8.2 u
1024-57-3	Heptachlor Epoxide	8.2 u
959-98-8	Endosulfan I	8.2 u
60-57-1	Dieldrin	16 u
72-55-9	4,4'-DDE	100
72-20-8	Endrin	16 u
33213-65-9	Endosulfan II	16 u
72-54-8	4,4'-DDD	16 u
1031-07-8	Endosulfan Sulfate	16 u
50-29-3	4,4'-DDT	16 u
72-43-5	Methoxychlor	16 u
53494-70-5	Endrin Ketone	16 u
57-74-9	Chlordane	82 u
8001-35-2	Toxaphene	160 u
12674-11-2	Aroclor-1016	82 u
11104-28-2	Aroclor-1221	82 u
11141-16-5	Aroclor-1232	82 u
53469-21-9	Aroclor-1242	82 u
12672-29-6	Aroclor-1248	~~(700) 82 u~~ REVISED 8/31/87 400
11097-69-1	Aroclor-1254	160 u
11096-82-5	Aroclor-1260	1600

J - CONTRACT FLAG; DENOTES ESTIMATED CONC. RESULT AMMENDED TO ORIGINAL PREL. ALTHOUGH AROCLOR 1248 WAS APPARENT IN THE PRIMARY ANALYSIS, IT WAS NOT RECOGNIZED AS BEING INDEPENDENT OF THE 1260 RESULT. SINCE IT WAS NOT I.D.'d APPROPRIATE STD'S WERE NOT INCLUDED IN CONFIRMATION. SINCE NO STD'S WERE INCLUDED IN CONF, RESULT DOES NOT QUALIFY FOR POSITIVE ID, THUS THE FLAG. REVIEW CONFIDENT IN IDENTIFICATION AND QUANTITATED RESULT, YET THE INADEQUACIES OF THE STD PACKAGE DICTATE NECESSITY OF THE QUALIFIER.
8/31/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.80

Vt 20000 Vi 2.00

200080-RE

SED - 5

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-972

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	60 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

200081

SED - 5

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI972

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.		UNKNOWN	BNA	615	4,400 JB.
2.		UNKNOWN	BNA	658	660 J...
3.		UNKNOWN	BNA	672	500 J...
4.		UNKNOWN	BNA	717	560 J...
5.	65-85-0	BENZOIC ACID	BNA	934	68 J,T.
6.		UNKNOWN HYDROCARBON	BNA	2078	920 J...
7.		UNKNOWN	BNA	2094	750 J...
8.		UNKNOWN	BNA	2107	840 J...
9.		UNKNOWN	BNA	2151	490 J...
10.		UNKNOWN	BNA	2181	520 J...
11.		UNKNOWN	BNA	2210	1,700 J...
12.		UNKNOWN	BNA	2226	1,300 J...
13.		UNKNOWN HYDROCARBON	BNA	2280	1,600 J...
14.		UNKNOWN	BNA	2315	1,400 J...
15.	205-99-2	BENZO (B) FLUORANTHENE	BNA	2336	500 J,T.
16.	207-08-9	BENZO (K) FLUORANTHENE	BNA	2341	540 J,T.
17.		UNKNOWN	BNA	2360	5,600 J...
18.		UNKNOWN	BNA	2380	440 J...
19.	50-32-8	BENZO (A) PYRENE	BNA	2420	600 J,T.
20.		UNKNOWN	BNA	2454	1,100 J...
21.		UNKNOWN	BNA	2472	750 J...
22.		UNKNOWN	BNA	2569	2,100 J...
23.		UNKNOWN	BNA	2621	770 J...
24.		UNKNOWN	BNA	2737	1,000 J...
25.					
26.					
27.					
28.					
29.					
30.					

T- Spectrum for this HSL compound does not meet CLP criteria for confirmation, but does indicate compound presence.

200082

U.S. ENVIRONMENTAL PROTECTION AGENCY — EPA/ESD Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 — FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number: MBI 471

(1) Case Number: 6889
Sample Site Name/Code: HUDSON RIVER PCBs

(2) SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX (Check One)
___ Water
X Soil/Sediment

(4) Ship To: Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4951647773

(7) Sample Description: (Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other (specify) Bi 972
MATCHES ORGANIC SAMPLE NO. ___

(8) Mark Volume Level On Sample Bottle
Check Analysis required
___ Total Metals
___ Cyanide

N453 SET 5

SMO COPY

SED-5

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MBI-471

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 6FH
SOW NO. 785
LAB SAMPLE ID. NO. 0014-11
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium
Matrix: Water Soil ✓ Sludge Other

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	12,500P	13. Manganese	5140P *
2. Antimony	13 UPN J	14. Mercury	907P
3. Arsenic	16 FS N J	15. Nickel	0.31 UN
4. Barium	104P	16. Potassium	8.6 UP
5. Beryllium	2.3 FUP	17. Selenium	<2440>P
6. Cadmium	1.7 FUP	18. Silver	0.4 UF
7. Calcium	5620P *	19. Sodium	10 UP
8. Chromium	4.3 UP *	20. Thallium	1550P
9. Cobalt	4.3 UP	21. Vanadium	0.43 UFN
10. Copper	56P	22. Zinc	64P
11. Iron	30,100P	23. Cyanide	62P
12. Lead	223 FS	Percent Solids (%)	45.79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of any flags must be explained and recorded on cover page, however.

Comments: medium dark soil

Lab Manager Kenneth Brad

U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 973

① Case Number: 6889

Sample Site Name/Code: Hudson Riv. Pkg.

② SAMPLE CONCENTRATION (Check One)
X Low Concentration
___ Medium Concentration

③ SAMPLE MATRIX (Check One)
___ Water
X Soil/Sediment

④ Ship To: Versar

Attn: Charlie Carter

Transfer Ship To:

⑤ Regional Office: II

Sampling Personnel:
S. Bullis
(Name)
201-225-6160
(Phone)

Sampling Date:
2/26/87
(Begin) (End)

⑥ For each sample collected specify number of containers used and mark volume level on each bottle.

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil/Sed Pest/PCB	1	8 oz

⑦ Shipping Information

Federal Express
Name of Carrier

2/26/87
Date Shipped:

495 164 935
Airbill Number:

⑧ Sample Description

___ Surface Water ___ Mixed Media
___ Ground Water X Solids
___ Leachate ___ Other (specify) _____

⑨ Sample Location

N453 SED 6 Six

⑩ Special Handling Instructions:
(e.g., safety precautions, hazardous nature)

Matches Dhors. MB1472

SMO COPY

SED - 6

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-973

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23907
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 52.8

CAS Number		ug/Kg
74-87-3	Chloromethane	21 u
74-83-9	Bromomethane	21 u
75-01-4	Vinyl Chloride	21 u
75-00-3	Chloroethane	21 u
75-09-2	Methylene Chloride	11 u
67-64-1	Acetone	21 u
75-15-0	Carbon Disulfide	11 u
75-35-4	1,1-Dichloroethene	11 u
75-34-3	1,1-Dichloroethane	11 u
156-60-5	Trans-1,2-Dichloroethene	11 u
67-66-3	Chloroform	11 u
107-06-2	1,2-Dichloroethane	11 u
78-93-3	2-butanone	21 u
71-55-6	1,1,1-Trichloroethane	11 u
56-23-5	Carbon Tetrachloride	11 u
108-05-4	Vinyl Acetate	21 u
75-27-4	Bromodichloromethane	11 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	11 u
10061-02-6	Trans-1,3-Dichloropropene	11 u
79-01-6	Trichloroethene	11 u
124-48-1	Dibromochloromethane	11 u
79-00-5	1,1,2-Trichloroethane	11 u
71-43-2	Benzene	11 u
10061-01-5	cis-1,3-Dichloropropene	11 u
110-75-8	2-chloroethylvinylether	21 u
75-25-2	Bromoform	11 u
108-10-1	4-Methyl-2-Pentanone	21 u
591-78-6	2-Hexanone	21 u
127-18-4	Tetrachloroethene	11 u
79-34-5	1,1,2,2-Tetrachloroethane	11 u
108-88-3	Toluene	[illegible]
108-90-7	Chlorobenzene	11 u
100-41-4	Ethylbenzene	11 u
100-42-5	Styrene	11 u
	Total Xylenes	11 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

200190

SED - 6

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI973

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 3/5/87

Date Analyzed: 3/20/87

Conc/Dil Factor: 198.0

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	1980 u
111-44-4	bis(2-Chloroethyl)Ether	1980 u
95-57-8	2-Chlorophenol	1980 u
541-73-1	1,3-Dichlorobenzene	1980 u
106-46-7	1,4-Dichlorobenzene	1980 u
100-51-6	Benzyl Alcohol	1980 u
95-50-1	1,2-Dichlorobenzene	1980 u
95-48-7	2-Methylphenol	1980 u
39638-32-9	bis(2-chloroisopropyl)ether	1980 u
106-44-5	4-methylphenol	1980 u
621-64-7	N-Nitroso-Di-n-propylamine	1980 u
67-72-1	Hexachloroethane	1980 u
98-95-3	Nitrobenzene	1980 u
78-59-1	Isophorone	1980 u
88-75-5	2-Nitrophenol	1980 u
105-67-9	2,4-dimethylphenol	1980 u
65-85-0	Benzoic Acid	10000 u
111-91-1	bis(2-chloroethoxy)methane	1980 u
120-83-2	2,4-dichlorophenol	1980 u
120-82-1	1,2,4-trichlorobenzene	1980 u
91-20-3	Naphthalene	1980 u
106-47-8	4-Chloroaniline	1980 u
87-68-3	Hexachlorobutadiene	1980 u
59-50-7	4-chloro-3-methylphenol	1980 u
91-57-6	2-methylnaphthalene	1980 u
77-47-4	Hexachlorocyclopentadiene	1980 u
88-06-2	2,4,6-Trichlorophenol	1980 u
95-95-4	2,4,5-Trichlorophenol	10000 u
91-58-7	2-Chloronaphthalene	1980 u
88-74-4	2-Nitroaniline	10000 u
131-11-3	Dimethyl Phthalate	1980 u
208-96-8	Acenaphthylene	1980 u
99-09-2	3-Nitroaniline	10000 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	1980 u
51-28-5	2,4-Dinitrophenol	10000 u
100-02-7	4-Nitrophenol	10000 u
132-64-9	Dibenzofuran	1980 u
121-14-2	2,4-Dinitrotoluene	1980 u
606-20-2	2,6-Dinitrotoluene	1980 u
84-66-2	Diethylphthalate	1980 u
7005-22-3	4-Chlorophenyl-phenylether	1980 u
86-73-7	Fluorene	1980 u
100-01-6	4-Nitroaniline	10000 u
534-52-1	4,6-dinitro-2-methylphenol	10000 u
86-30-6	N-Nitrosodiphenylamine (1)	1980 u
101-55-3	4-Bromophenyl-phenylether	1980 u
118-74-1	Hexachlorobenzene	1980 u
87-86-5	Pentachlorophenol	10000 u
85-01-8	Phenanthrene	1980 u
120-12-7	Anthracene	1980 u
84-74-2	Di-n-butylphthalate	1980 u
206-44-0	Fluoranthene	2600 ✓
129-00-0	Pyrene	2100 ✓
85-68-7	Butylbenzylphthalate	1980 u
91-94-1	3,3'-Dichlorobenzidine	4000 u
56-55-3	Benzo(a)anthracene	1200 J ✓
117-81-7	bis(2-Ethylhexyl)Phthalate	2200 ✓
218-01-9	Chrysene	1700 J ✓
117-84-0	Di-n-Octylphthalate	1980 u
205-99-2	Benzo(b)Fluoranthene	3100 ✓
207-08-9	Benzo(k)Fluoranthene	1980 u
50-32-8	Benzo(a)pyrene	1300 ✓
193-39-5	Indeno(1,2,3-cd)Pyrene	1980 u
53-70-3	Dibenz(a,h)Anthracene	1980 u
191-24-2	Benzo(g,h,i)Perylene	1980 u

(1)-Cannot be separated from diphenylamine

200191

SED - 6

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 973

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/05/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/14/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor: 1.00

Percent Moisture(decanted): 52.80

CAS Number		ug/kg
319-84-6	alpha-BHC	7.0 u
319-85-7	beta-BHC	7.0 u
319-86-8	delta-BHC	7.0 u
58-89-9	gamma-BHC (Lindane)	7.0 u
76-44-8	Heptachlor	7.0 u
309-00-2	Aldrin	7.0 u
1024-57-3	Heptachlor Epoxide	7.0 u
959-98-8	Endosulfan I	7.0 u
60-57-1	Dieldrin	14
72-55-9	4,4'-DDE	250
72-20-8	Endrin	14 u
33213-65-9	Endosulfan II	14 u
72-54-8	4,4'-DDD	210
1031-07-8	Endosulfan Sulfate	14 u
50-29-3	4,4'-DDT	170
72-43-5	Methoxychlor	14 u
53494-70-5	Endrin Ketone	14 u
57-74-9	Chlordane	70 u
8001-35-2	Toxaphene	140 u
12674-11-2	Aroclor-1016	70 u
11104-28-2	Aroclor-1221	70 u
11141-16-5	Aroclor-1232	70 u
53469-21-9	Aroclor-1242	70 u
12672-29-6	Aroclor-1248	70 u
11097-69-1	Aroclor-1254	140 u
11096-82-5	Aroclor-1260	140 u

14 U S

DETECTION LIMIT SUSPECT DUE TO MAGNITUDE OF 4,4'DDE RESPONSE, QUESTION ON THE QUANT. ANALYSIS, AND ID IN CONF. JOD 3/30/87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.30 Vt 20000 Vi 2.00

200192

SED - 6

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-973

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	190 J
2.	75-43-4	METHANE, DICHLOROFLUORO-	VOA	159	13 J
3.	75-69-4	METHANE, TRICHLOROFLUORO	VOA	215	150 J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

200193

SED - 6

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI973

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.		UNKNOWN	BNA	616	8,500 J,B.
2.		UNKNOWN	BNA	658	1,100 J...
3.		UNKNOWN	BNA	672	970 J...
4.		UNKNOWN	BNA	717	1,000 J...
5.	65-85-0	BENZOIC ACID	BNA	934	180 J,T.
6.		UNKNOWN	BNA	998	1,400 J...
7.	85-01-8	PHENANTHRENE	BNA	1603	1,800 J,T.
8.		UNKNOWN	BNA	2015	1,500 J...
9.		UNKNOWN HYDROCARBON	BNA	2036	5,600 J...
10.		UNKNOWN	BNA	2078	14,000 J...
11.		UNKNOWN	BNA	2093	1,800 J...
12.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	2104	3,700 J...
13.		UNKNOWN	BNA	2180	840 J...
14.		UNKNOWN HYDROCARBON	BNA	2209	5,100 J...
15.		UNKNOWN	BNA	2225	1,300 J...
16.		UNKNOWN	BNA	2313	6,900 J...
17.		UNKNOWN	BNA	2359	14,000 J...
18.		UNKNOWN POLYAROMATIC HYDROCARBON	BNA	2406	1,200 J...
19.		UNKNOWN	BNA	2506	4,500 J...
20.		UNKNOWN HYDROCARBON	BNA	2568	14,000 J...
21.		UNKNOWN	BNA	2661	1,200 J...
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

T. Spectrum for this TICL compound does not meet CLP criteria for confirmation, but does indicate compound presence.

200194

U.S. ENVIRONMENTAL PROTECTION AGENCY — HW Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 — FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number: MBI 472

(1) **Case Number:** 6889
Sample Site Name/Code: HUDSON RIVER PSYC

(2) **SAMPLE CONCENTRATION** (Check One)
- [X] Low Concentration
- [ ] Medium Concentration

(3) **SAMPLE MATRIX** (Check One)
- [ ] Water
- [X] Soil/Sediment

(4) **Ship To:** Century Labs
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) S. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4951647773

(7) **Sample Description:** (Check One)
- [ ] Surface Water
- [ ] Ground Water
- [ ] Leachate
- [ ] Mixed Media
- [X] Solids
- [ ] Other (specify)

MATCHES ORGANIC SAMPLE NO. B973

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
- [X] Total Metals
- [ ] Cyanide

N153 SED-6

SMO COPY

Form I SED - 1

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-472

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 6879
SOW NO. 785
LAB SAMPLE ID. NO. 0014-12
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium ____
Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	9910 P	13. Manganese	4740 *
2. Antimony	37.2 P N	14. Mercury	6660 P
3. Arsenic	17 F N	15. Nickel	0.83
4. Barium	<243> P	16. Potassium	26 P
5. Beryllium	6.4 P	17. Selenium	<1190> P
6. Cadmium	105 P	18. Silver	2.6 U F
7. Calcium	19200 P *	19. Sodium	13 U P
8. Chromium	105 P *	20. Thallium	<1790> P
9. Cobalt	13 P	21. Vanadium	4.4 U F N
10. Copper	249 P	22. Zinc	141 P
11. Iron	58900 P	23. Cyanide	794 P
12. Lead	169 F S	Percent Solids (%)	14.1 F

Comments: The reporting results on EPA standard result worksheets are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of all flags must be explained and recorded on cover page, however.

Comments: Melvin Clark Jail

Lab Manager [signature]

U.S. ENVIRONMENTAL PROTECTION AGENCY, EMSL Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 974

① **Case Number:** 6889

Sample Site Name/Code: Hudson River Psyc

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- ___ Water
- X Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: Charlie Carter

Transfer Ship To:

⑤ **Regional Office:** 4

Sampling Personnel: S. Bullis (Name)

201-225-6160 (Phone)

Sampling Date: 2/26/87 (Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil/Sed Pest/PCB	1	8 oz

⑦ **Shipping Information**

Federal Express — Name of Carrier

2/26/87 — Date Shipped:

49516493 5 — Airbill Number:

⑧ **Sample Description**
- ___ Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- X Solids
- ___ Other (specify) _____

⑨ **Sample Location**

N453 SED 7

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Dnrs MBI 473

SMO COPY

SED - 7

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-974

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23908
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 32.9

CAS Number		ug/Kg
74-87-3	Chloromethane	15 u
74-83-9	Bromomethane	15 u
75-01-4	Vinyl Chloride	15 u
75-00-3	Chloroethane	15 u
75-09-2	Methylene Chloride	7 u
67-64-1	Acetone	15 u
75-15-0	Carbon Disulfide	7 u
75-35-4	1,1-Dichloroethene	7 u
75-34-3	1,1-Dichloroethane	7 u
156-60-5	Trans-1,2-Dichloroethene	7 u
67-66-3	Chloroform	7 u
107-06-2	1,2-Dichloroethane	7 u
78-93-3	2-butanone	15 u
71-55-6	1,1,1-Trichloroethane	7 u
56-23-5	Carbon Tetrachloride	7 u
108-05-4	Vinyl Acetate	15 u
75-27-4	Bromodichloromethane	7 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	7 u
10061-02-6	Trans-1,3-Dichloropropene	7 u
79-01-6	Trichloroethene	7 u
124-48-1	Dibromochloromethane	7 u
79-00-5	1,1,2-Trichloroethane	7 u
71-43-2	Benzene	7 u
10061-01-5	cis-1,3-Dichloropropene	7 u
110-75-8	2-chloroethylvinylether	15 u
75-25-2	Bromoform	7 u
108-10-1	4-Methyl-2-Pentanone	15 u
591-78-6	2-Hexanone	15 u
127-18-4	Tetrachloroethene	7 u
79-34-5	1,1,2,2-Tetrachloroethane	7 u
108-88-3	Toluene	4 J
108-90-7	Chlorobenzene	7 u
100-41-4	Ethylbenzene	7 u
100-42-5	Styrene	7 u
	Total Xylenes	7 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

200290

SED - 7

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI974

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: MID

Date Extracted/Prepared: 3/6/87

GPC Cleanup [ ]Yes [X]No

Date Analyzed: 3/14/87

Separatory Funnel Extraction [ ]Yes

Conc/Dil Factor: 1/2838

Continuous Liquid-LIquid Extraction [ ]Yes

CAS Number		ug/Kg	CAS Number		ug/Kg
108-95-2	Phenol	28000 u	83-32-9	Acenaphthene	28000 u
111-44-4	bis(2-Chloroethyl)Ether	28000 u	51-28-5	2,4-Dinitrophenol	142000 u
95-57-8	2-Chlorophenol	28000 u	100-02-7	4-Nitrophenol	142000 u
541-73-1	1,3-Dichlorobenzene	28000 u	132-64-9	Dibenzofuran	28000 u
106-46-7	1,4-Dichlorobenzene	28000 u	121-14-2	2,4-Dinitrotoluene	28000 u
100-51-6	Benzyl Alcohol	28000 u	606-20-2	2,6-Dinitrotoluene	28000 u
95-50-1	1,2-Dichlorobenzene	28000 u	84-66-2	Diethylphthalate	28000 u
95-48-7	2-Methylphenol	28000 u	7005-22-3	4-Chlorophenyl-phenylether	28000 u
39638-32-9	bis(2-chloroisopropyl)ether	28000 u	86-73-7	Fluorene	28000 u
106-44-5	4-methylphenol	28000 u	100-01-6	4-Nitroaniline	142000 u
621-64-7	N-Nitroso-Di-n-propylamine	28000 u	534-52-1	4,6-dinitro-2-methylphenol	142000 u
67-72-1	Hexachloroethane	28000 u	86-30-6	N-Nitrosodiphenylamine (1)	28000 u
98-95-3	Nitrobenzene	28000 u	101-55-3	4-Bromophenyl-phenylether	28000 u
78-59-1	Isophorone	28000 u	118-74-1	Hexachlorobenzene	28000 u
88-75-5	2-Nitrophenol	28000 u	87-86-5	Pentachlorophenol	142000 u
105-67-9	2,4-dimethylphenol	28000 u	85-01-8	Phenanthrene	5500 J
65-85-0	Benzoic Acid	142000 u	120-12-7	Anthracene	28000 u
111-91-1	bis(2-chloroethoxy)methane	28000 u	84-74-2	Di-n-butylphthalate	28000 u
120-83-2	2,4-dichlorophenol	28000 u	206-44-0	Fluoranthene	6400 J
120-82-1	1,2,4-trichlorobenzene	28000 u	129-00-0	Pyrene	6000 J
91-20-3	Naphthalene	28000 u	85-68-7	Butylbenzylphthalate	28000 u
106-47-8	4-Chloroaniline	28000 u	91-94-1	3,3'-Dichlorobenzidine	56000 u
87-68-3	Hexachlorobutadiene	28000 u	56-55-3	Benzo(a)anthracene	28000 u
59-50-7	4-chloro-3-methylphenol	28000 u	117-81-7	bis(2-Ethylhexyl)Phthalate	28000 u
91-57-6	2-methylnaphthalene	28000 u	218-01-9	Chrysene	28000 u
77-47-4	Hexachlorocyclopentadiene	28000 u	117-84-0	Di-n-Octylphthalate	28000 u
88-06-2	2,4,6-Trichlorophenol	28000 u	205-99-2	Benzo(b)Fluoranthene	28000 u
95-95-4	2,4,5-Trichlorophenol	142000 u	207-08-9	Benzo(k)Fluoranthene	28000 u
91-58-7	2-Chloronaphthalene	28000 u	50-32-8	Benzo(a)pyrene	28000 u
88-74-4	2-Nitroaniline	142000 u	193-39-5	Indeno(1,2,3-cd)Pyrene	28000 u
131-11-3	Dimethyl Phthalate	28000 u	53-70-3	Dibenz(a,h)Anthracene	28000 u
208-96-8	Acenaphthylene	28000 u	191-24-2	Benzo(g,h,i)Perylene	28000 u
99-09-2	3-Nitroaniline	142000 u			

(1)-Cannot be separated from diphenylamine

200291

SED - 7

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 974

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium | (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03/06/87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03/11/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 32.90

CAS Number		ug/kg
319-84-6	alpha-BHC	75 u
319-85-7	beta-BHC	75 u
319-86-8	delta-BHC	75 u
58-89-9	gamma-BHC (Lindane)	75 u
76-44-8	Heptachlor	75 u
309-00-2	Aldrin	~~750~~ F
1024-57-3	Heptachlor Epoxide	750 u
959-98-8	Endosulfan I	750 u
60-57-1	Dieldrin	1500 u
72-55-9	4,4'-DDE	1500 u
72-20-8	Endrin	1500 u
33213-65-9	Endosulfan II	1500 u
72-54-8	4,4'-DDD	1500 u
1031-07-8	Endosulfan Sulfate	1500 u
50-29-3	4,4'-DDT	1500 u
72-43-5	Methoxychlor	1500 u
53494-70-5	Endrin Ketone	1500 u
57-74-9	Chlordane	7500 u
8001-35-2	Toxaphene	15000 u
12674-11-2	Aroclor-1016	7500 u
11104-28-2	Aroclor-1221	7500 u
11141-16-5	Aroclor-1232	7500 u
53469-21-9	Aroclor-1242	7500 u
12672-29-6	Aroclor-1248	7500 u
11097-69-1	Aroclor-1254	15000 u
11096-82-5	Aroclor-1260	1700000

F- SUSPECTED FALSE-POSITIVE; LACK OF AGREEMENT BETWEEN CALCULATED RESULTS INDICATES A HIGH PROBABILITY OF FALSE ID ALTHOUGH ID CRITERIA WERE MET IN QUANT / CONF. MAY BE DUE TO HIGH CONC. ARIZ60. JOD 3/30/87

NA- Spiked compounds not to be included on Forms I.
Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 1.00 Vt 10000 Vi 2.00

200292

SED - 7

Versar Inc., Laboratory Operations
5850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-974

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	7 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

200293

SED - 7

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI- 974

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	1932	11,000 J...
12.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	1952	17,000 J...
13.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	1970	50,000 J...
14.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2005	52,000 J...
15.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2013	14,000 J...
16.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2048	39,000 J...
17.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2070	20,000 J...
18.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2078	11,000 J...
19.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2104	17,000 J...
110.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2140	36,000 J...
111.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2183	15,000 J...
112.	UNKNOWN POLYCHLORINATED BIPHENYL		BNA	2202	5,800 J...
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

200294

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313—703/ 557-2490 -FTS/ 557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 473

(1) Case Number: 6889
Sample Site Name/Code:
HUDSON RIVER BYC

(2) SAMPLE CONCENTRATION
(Check One)
X Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
___ Water
X Soil/Sediment

(4) Ship To:
Century Labs
Attn: KEN BOND
Transfer
Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) Sample Description:
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other
(specify) B1974
MATCHES ORGANIC SAMPLE NO.

(8) Mark Volume Level
On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide

N453 SED 7

SMO COPY

SED - 7

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-473

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 6479
SOW NO. 785
LAB SAMPLE ID. NO. 0014-13
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low / Medium
Matrix: Water Soil / Sludge Other

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	9220 P	13. Manganese	7630 P *
2. Antimony	9.5 UPN J	14. Mercury	4.3 P
3. Arsenic	4.6 FN J	15. Nickel	1.1 B
4. Barium	<44> P	16. Potassium	<113> P
5. Beryllium	1.6 UP	17. Selenium	<11407 P
6. Cadmium	1.3 UP	18. Silver	0.66 UF=
7. Calcium	16,200 P *	19. Sodium	3.2 P
8. Chromium	22 P *	20. Thallium	[redacted]
9. Cobalt	3.2 P	21. Vanadium	0.33 UFN
10. Copper	175 P	22. Zinc	29 P
11. Iron	25,400 P	23. Cyanide	413 P
12. Lead	24 FFS	Percent Solids (%)	59.53
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explained and attached on cover page, however.

Comments: Medium dark soil

Lab Manager: [signature]

U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313—703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 975

① Case Number: 6889

Sample Site Name/Code: Hudson River Bkg.

② SAMPLE CONCENTRATION (Check One)
✓ Low Concentration
___ Medium Concentration

③ SAMPLE MATRIX (Check One)
___ Water
✓ Soil/Sediment

④ Ship To: VERSAR D.C.
Attn: Charlie Carter
Transfer Ship To:

⑤ Regional Office: 4
Sampling Personnel: S. Bullis
(Name)
201-225-6160
(Phone)
Sampling Date: 2/26/87
(Begin) (End)

⑥ For each sample collected specify number of containers used and mark volume level on each bottle.

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8oz
Soil/Sediment (VOA)	1	120ml
Other		
soil/sed Pest/PCB	1	8oz

⑦ Shipping Information
Federal Express
Name of Carrier
2/26/87
Date Shipped:
495164935
Airbill Number:

⑧ Sample Description
___ Surface Water ___ Mixed Media
___ Ground Water X Solids
___ Leachate ___ Other (specify) _____

⑨ Sample Location
N453 SED 8

⑩ Special Handling Instructions:
(e.g., safety precautions, hazardous nature)
Matches Dnos MB1474

SMO COPY

SED - 8

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-975

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23909
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 39.1

CAS Number		ug/Kg	CAS Number		ug/Kg
74-87-3	Chloromethane	16 u	78-87-5	1,2-Dichloropropane	8 u
74-83-9	Bromomethane	16 u	10061-02-6	Trans-1,3-Dichloropropene	8 u
75-01-4	Vinyl Chloride	16 u	79-01-6	Trichloroethene	8 u
75-00-3	Chloroethane	16 u	124-48-1	Dibromochloromethane	8 u
75-09-2	Methylene Chloride	8 u	79-00-5	1,1,2-Trichloroethane	8 u
67-64-1	Acetone	[illegible]	71-43-2	Benzene	8 u
75-15-0	Carbon Disulfide	8 u	10061-01-5	cis-1,3-Dichloropropene	8 u
75-35-4	1,1-Dichloroethene	8 u	110-75-8	2-chloroethylvinylether	16 u
75-34-3	1,1-Dichloroethane	8 u	75-25-2	Bromoform	8 u
156-60-5	Trans-1,2-Dichloroethene	8 u	108-10-1	4-Methyl-2-Pentanone	16 u
67-66-3	Chloroform	8 u	591-78-6	2-Hexanone	16 u
107-06-2	1,2-Dichloroethane	8 u	127-18-4	Tetrachloroethene	8 u
78-93-3	2-butanone	16 u	79-34-5	1,1,2,2-Tetrachloroethane	8 u
71-55-6	1,1,1-Trichloroethane	8 u	108-88-3	Toluene	8 u
56-23-5	Carbon Tetrachloride	8 u	108-90-7	Chlorobenzene	9
108-05-4	Vinyl Acetate	16 u	100-41-4	Ethylbenzene	8 u
75-27-4	Bromodichloromethane	8 u	100-42-5	Styrene	8 u
				Total Xylenes	8 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

200365

SED - 8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Case No: 6889

Sample Number
BI975

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 3/5/87

Date Analyzed: 3/20/87

Conc/Dil Factor: 1 62.93

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	680 u
111-44-4	bis(2-Chloroethyl)Ether	680 u
95-57-8	2-Chlorophenol	680 u
541-73-1	1,3-Dichlorobenzene	680 u
106-46-7	1,4-Dichlorobenzene	680 u
100-51-6	Benzyl Alcohol	680 u
95-50-1	1,2-Dichlorobenzene	680 u
95-48-7	2-Methylphenol	680 u
39638-32-9	bis(2-chloroisopropyl)ether	680 u
106-44-5	4-methylphenol	680 u
621-64-7	N-Nitroso-Di-n-propylamine	680 u
67-72-1	Hexachloroethane	680 u
98-95-3	Nitrobenzene	680 u
78-59-1	Isophorone	680 u
88-75-5	2-Nitrophenol	680 u
105-67-9	2,4-dimethylphenol	680 u
65-85-0	Benzoic Acid	3400 u
111-91-1	bis(2-chloroethoxy)methane	680 u
120-83-2	2,4-dichlorophenol	680 u
120-82-1	1,2,4-trichlorobenzene	680 u
91-20-3	Naphthalene	680 u
106-47-8	4-Chloroaniline	680 u
87-68-3	Hexachlorobutadiene	680 u
59-50-7	4-chloro-3-methylphenol	680 u
91-57-6	2-methylnaphthalene	680 u
77-47-4	Hexachlorocyclopentadiene	680 u
88-06-2	2,4,6-Trichlorophenol	680 u
95-95-4	2,4,5-Trichlorophenol	3400 u
91-58-7	2-Chloronaphthalene	680 u
88-74-4	2-Nitroaniline	3400 u
131-11-3	Dimethyl Phthalate	680 u
208-96-8	Acenaphthylene	680 u
99-09-2	3-Nitroaniline	3400 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	680 u
51-28-5	2,4-Dinitrophenol	3400 u
100-02-7	4-Nitrophenol	3400 u
132-64-9	Dibenzofuran	680 u
121-14-2	2,4-Dinitrotoluene	680 u
606-20-2	2,6-Dinitrotoluene	680 u
84-66-2	Diethylphthalate	680 u
7005-22-3	4-Chlorophenyl-phenylether	680 u
86-73-7	Fluorene	680 u
100-01-6	4-Nitroaniline	3400 u
534-52-1	4,6-dinitro-2-methylphenol	3400 u
86-30-6	N-Nitrosodiphenylamine (1)	680 u
101-55-3	4-Bromophenyl-phenylether	680 u
118-74-1	Hexachlorobenzene	680 u
87-86-5	Pentachlorophenol	3400 u
85-01-8	Phenanthrene	680 u
120-12-7	Anthracene	680 u
84-74-2	Di-n-butylphthalate	680 u
206-44-0	Fluoranthene	680 u
129-00-0	Pyrene	680 u
85-68-7	Butylbenzylphthalate	680 u
91-94-1	3,3'-Dichlorobenzidine	1360 u
56-55-3	Benzo(a)anthracene	680 u
117-81-7	bis(2-Ethylhexyl)Phthalate	150 J
218-01-9	Chrysene	680 u
117-84-0	Di-n-Octylphthalate	680 u
205-99-2	Benzo(b)Fluoranthene	680 u
207-08-9	Benzo(k)Fluoranthene	680 u
50-32-8	Benzo(a)pyrene	680 u
193-39-5	Indeno(1,2,3-cd)Pyrene	680 u
53-70-3	Dibenz(a,h)Anthracene	680 u
191-24-2	Benzo(g,h,i)Perylene	680 u

(1)-Cannot be separated from diphenylamine

200366

SED - 8

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 975

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03-05-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03-14-87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 39.10

CAS Number		ug/kg
319-84-6	alpha-BHC	5.4 u
319-85-7	beta-BHC	5.4 u
319-86-8	delta-BHC	5.4 u
58-89-9	gamma-BHC (Lindane)	5.4 u
76-44-8	Heptachlor	5.4 u
309-00-2	Aldrin	5.4 u
1024-57-3	Heptachlor Epoxide	5.4 u
959-98-8	Endosulfan I	5.4 u
60-57-1	Dieldrin	11 u
72-55-9	4,4'-DDE	11 u
72-20-8	Endrin	11 u
33213-65-9	Endosulfan II	11 u
72-54-8	4,4'-DDD	11 u
1031-07-8	Endosulfan Sulfate	11 u
50-29-3	4,4'-DDT	11 u
72-43-5	Methoxychlor	11 u
53494-70-5	Endrin Ketone	11 u
57-74-9	Chlordane	54 u
8001-35-2	Toxaphene	110 u
12674-11-2	Aroclor-1016	54 u
11104-28-2	Aroclor-1221	54 u
11141-16-5	Aroclor-1232	54 u
53469-21-9	Aroclor-1242	54 u
12672-29-6	Aroclor-1248	54 u
11097-69-1	Aroclor-1254	110 u
11096-82-5	Aroclor-1260	110 u

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs _____ or Ws 30.18 Vt 20000 Vi 2.00

JHH
03-24-87

200367

SED - 8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-975

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.	124-38-9	CARBON DIOXIDE	VOA	27	28 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

200368

SED - 8

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI975

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		UNKNOWN.	BNA	615	3,100 J,B.
12.		UNKNOWN.	BNA	658	360 J...
13.		UNKNOWN.	BNA	718	350 J...
14.	65-85-0	BENZOIC ACID.	BNA	934	33 J,T.
15.		UNKNOWN.	BNA	2104	330 J...
16.		UNKNOWN HYDROCARBON.	BNA	2358	750 J...
17.		UNKNOWN.	BNA	2567	540 J...
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

T - Spectrum for this HSL compound does not meet CLP criteria for confirmation, but does indicate compound presence.

200369

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY — HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703/557-2490 - FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 474

(1) **Case Number:** 6889
Sample Site Name/Code:
HUDSON RIVER Bay C

(2) **SAMPLE CONCENTRATION**
(Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX**
(Check One)
___ Water
X Soil/Sediment

(4) **Ship To:**
Century Lass
Attn: KEN BOND
Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) **Sample Description:**
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___ (specify) Bi 975
MATCHES ORGANIC SAMPLE NO. ___

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
X Total Metals
___ Cyanide

NY53 SED 8

SMO COPY

SED -8

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-474

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc.
CASE NO. 644

SOW NO. 785

LAB SAMPLE ID. NO. 0014-14
QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water _____ Soil ✓ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	17,300P	13. Vanadium	78.2OP *
2. Antimony	9.4UPN J	14. Manganese	199P
3. Arsenic	5.4FN J	15. Mercury	0.22
4. Barium	65P	16. Nickel	<11>P
5. Beryllium	1.6P	17. Potassium	<782>
6. Cadmium	1.3P	18. Selenium	0.67UF=
7. Calcium	3260P *	19. Silver	3.3UP
8. Chromium	14P *	20. Sodium	[redacted]
9. Cobalt	3.3UP	21. Thallium	0.34UFN
10. Copper	33P	22. Vanadium	26P
11. Iron	36800P	23. Zinc	104P
12. Lead	111F	Percent Solids (%)	59.53
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definitions of such flags must be explained and attached on cover page, however.

Comments: Medium dark soil

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY, HWES Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 • FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 967

① **Case Number:** 6889

Sample Site Name/Code: Hudson Riv. Rgc

② **SAMPLE CONCENTRATION** (Check One)
- X Low Concentration
- ___ Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- ___ Water
- X Soil/Sediment

④ **Ship To:** Versar Inc.

Attn: Charlie Carter

Transfer Ship To:

⑤ **Regional Office:** II

Sampling Personnel: J. Bullis (Name)

201-225-6160 (Phone)

Sampling Date: 2/26/87 (Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)		
Water (VOA)		
Soil/Sediment (Extractable)	1	8 oz
Soil/Sediment (VOA)	1	120 ml
Other		
Soil/SED PEST/PCB	1	8 oz

⑦ **Shipping Information**

Federal Express — Name of Carrier

2/26/87 — Date Shipped:

495164935 — Airbill Number:

⑧ **Sample Description**
- ___ Surface Water
- ___ Ground Water
- ___ Leachate
- ___ Mixed Media
- X Solids
- ___ Other (specify) _____

⑨ **Sample Location**

N453 - 51

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)

Matches Inorg. MB1 - 466

SMO COPY

S-1

ersar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-967

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23901
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/03/87
Date Analyzed: 03/03/87
Conc/Dil Factor: 1 pH N/A
Percent Moisture: 83.8

CAS Number		ug/Kg
74-87-3	Chloromethane	62 u
74-83-9	Bromomethane	62 u
75-01-4	Vinyl Chloride	62 u
75-00-3	Chloroethane	62 u
75-09-2	Methylene Chloride	31 u
67-64-1	Acetone	62 u
75-15-0	Carbon Disulfide	31 u
75-35-4	1,1-Dichloroethene	31 u
75-34-3	1,1-Dichloroethane	31 u
156-60-5	Trans-1,2-Dichloroethene	31 u
67-66-3	Chloroform	31 u
107-06-2	1,2-Dichloroethane	31 u
78-93-3	2-butanone	62 u
71-55-6	1,1,1-Trichloroethane	31 u
56-23-5	Carbon Tetrachloride	31 u
108-05-4	Vinyl Acetate	62 u
75-27-4	Bromodichloromethane	31 u

CAS Number		ug/Kg
78-87-5	1,2-Dichloropropane	31 u
10061-02-6	Trans-1,3-Dichloropropene	31 u
79-01-6	Trichloroethene	31 u
124-48-1	Dibromochloromethane	31 u
79-00-5	1,1,2-Trichloroethane	31 u
71-43-2	Benzene	31 u
10061-01-5	cis-1,3-Dichloropropene	31 u
110-75-8	2-chloroethylvinylether	62 u
75-25-2	Bromoform	31 u
108-10-1	4-Methyl-2-Pentanone	62 u
591-78-6	2-Hexanone	62 u
127-18-4	Tetrachloroethene	31 u
79-34-5	1,1,2,2-Tetrachloroethane	31 u
108-88-3	Toluene	31 u
108-90-7	Chlorobenzene	31 u
100-41-4	Ethylbenzene	31 u
100-42-5	Styrene	31 u
	Total Xylenes	31 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

100033

S-1

ersar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI967

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration:LOW

Date Extracted/Prepared: 03/05/87

Date Analyzed: 03/18/87

Conc/Dil Factor: X 254.4

GPC Cleanup [ ]Yes [X]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [ ]Yes

CAS Number		ug/Kg
108-95-2	Phenol	2500 u
111-44-4	bis(2-Chloroethyl)Ether	2500 u
95-57-8	2-Chlorophenol	2500 u
541-73-1	1,3-Dichlorobenzene	2500 u
106-46-7	1,4-Dichlorobenzene	2500 u
100-51-6	Benzyl Alcohol	2500 u
95-50-1	1,2-Dichlorobenzene	2500 u
95-48-7	2-Methylphenol	2500 u
39638-32-9	bis(2-chloroisopropyl)ether	2500 u
106-44-5	4-methylphenol	2500 u
621-64-7	N-Nitroso-Di-n-propylamine	2500 u
67-72-1	Hexachloroethane	2500 u
98-95-3	Nitrobenzene	2500 u
78-59-1	Isophorone	2500 u
88-75-5	2-Nitrophenol	2500 u
105-67-9	2,4-dimethylphenol	2500 u
65-85-0	Benzoic Acid	12800 u
111-91-1	bis(2-chloroethoxy)methane	2500 u
120-83-2	2,4-dichlorophenol	2500 u
120-82-1	1,2,4-trichlorobenzene	2500 u
91-20-3	Naphthalene	2500 u
106-47-8	4-Chloroaniline	2500 u
87-68-3	Hexachlorobutadiene	2500 u
59-50-7	4-chloro-3-methylphenol	2500 u
91-57-6	2-methylnaphthalene	2500 u
77-47-4	Hexachlorocyclopentadiene	2500 u
88-06-2	2,4,6-Trichlorophenol	2500 u
95-95-4	2,4,5-Trichlorophenol	12800 u
91-58-7	2-Chloronaphthalene	2500 u
88-74-4	2-Nitroaniline	12800 u
131-11-3	Dimethyl Phthalate	2500 u
208-96-8	Acenaphthylene	2500 u
99-09-2	3-Nitroaniline	12800 u

CAS Number		ug/Kg
83-32-9	Acenaphthene	2500 u
51-28-5	2,4-Dinitrophenol	12800 u
100-02-7	4-Nitrophenol	12800 u
132-64-9	Dibenzofuran	2500 u
121-14-2	2,4-Dinitrotoluene	2500 u
606-20-2	2,6-Dinitrotoluene	2500 u
84-66-2	Diethylphthalate	2500 u
7005-22-3	4-Chlorophenyl-phenylether	2500 u
86-73-7	Fluorene	2500 u
100-01-6	4-Nitroaniline	12800 u
534-52-1	4,6-dinitro-2-methylphenol	12800 u
86-30-6	N-Nitrosodiphenylamine (1)	2500 u
101-55-3	4-Bromophenyl-phenylether	2500 u
118-74-1	Hexachlorobenzene	2500 u
87-86-5	Pentachlorophenol	12800 u
85-01-8	Phenanthrene	2500 u
120-12-7	Anthracene	2500 u
84-74-2	Di-n-butylphthalate	2500 u
206-44-0	Fluoranthene	2500 u
129-00-0	Pyrene	2500 u
85-68-7	Butylbenzylphthalate	2500 u
91-94-1	3,3'-Dichlorobenzidine	5000 u
56-55-3	Benzo(a)anthracene	2500 u
117-81-7	bis(2-Ethylhexyl)Phthalate	2500 u
218-01-9	Chrysene	2500 u
117-84-0	Di-n-Octylphthalate	2500 u
205-99-2	Benzo(b)Fluoranthene	2500 u
207-08-9	Benzo(k)Fluoranthene	2500 u
50-32-8	Benzo(a)pyrene	2500 u
193-39-5	Indeno(1,2,3-cd)Pyrene	2500 u
53-70-3	Dibenz(a,h)Anthracene	2500 u
191-24-2	Benzo(g,h,i)Perylene	2500 u

(1)-Cannot be separated from diphenylamine

BNAF1:R032286

Form I

5-1

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 967

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: Low | Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 03-05-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 03-11-87 12 APP 3/12/87

Continuous Liquid-Liquid Extraction [ ] Yes [X] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 83.80

CAS Number		ug/kg
319-84-6	alpha-BHC	20 u
319-85-7	beta-BHC	20 u
319-86-8	delta-BHC	20 u
58-89-9	gamma-BHC (Lindane)	20 u
76-44-8	Heptachlor	20 u
309-00-2	Aldrin	20 u
1024-57-3	Heptachlor Epoxide	20 u
959-98-8	Endosulfan I	20 u
60-57-1	Dieldrin	41 u
72-55-9	4,4'-DDE	41 u
72-20-8	Endrin	41 u
33213-65-9	Endosulfan II	41 u
72-54-8	4,4'-DDD	41 u
1031-07-8	Endosulfan Sulfate	41 u
50-29-3	4,4'-DDT	41 u
72-43-5	Methoxychlor	41 u
53494-70-5	Endrin Ketone	41 u
57-74-9	Chlordane	200 u
8001-35-2	Toxaphene	410 u
12674-11-2	Aroclor-1016	200 u
11104-28-2	Aroclor-1221	200 u
11141-16-5	Aroclor-1232	200 u
53469-21-9	Aroclor-1242	200 u
12672-29-6	Aroclor-1248	200 u
11097-69-1	Aroclor-1254	410 u
11096-82-5	Aroclor-1260	410 u

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

LMC
03-24-87

Vs _____ or Ws 30.37 Vt 20000 Vi 2.00

100035

S-1

ersar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI-967

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.	124-38-9	CARBON DIOXIDE	VOA	27	260 J
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

100036

S-1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI967

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		UNKNOWN	BNA	659	1,800 J
12.		UNKNOWN	BNA	718	3,700 J
13.		UNKNOWN	BNA	741	1,500 J
14.		UNKNOWN	BNA	798	1,300 J
15.		UNKNOWN HYDROCARBON	BNA	2094	2,100 J
16.		UNKNOWN HYDROCARBON	BNA	2211	1,700 J
17.		UNKNOWN HYDROCARBON	BNA	2315	2,300 J
18.		UNKNOWN	BNA	2360	3,800 J
19.		UNKNOWN	BNA	914	11,000 J
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

100037

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 — 703 / 557-2490 - FTS / 557-2490

INORGANICS TRAFFIC REPORT

Sample Number **MBI 466**

(1) **Case Number:** 6889
Sample Site Name/Code:
HUDSON RIVER
Psychiatric Center

(2) **SAMPLE CONCENTRATION** (Check One)
X Low Concentration
___ Medium Concentration

(3) **SAMPLE MATRIX** (Check One)
___ Water
X Soil/Sediment

(4) **Ship To:**
Century Labs

Attn: KEN BOND

Transfer Ship To:

(5) **Sampling Office:** FIT II
Sampling Personnel:
(Name) J. BULLIS
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) **Shipping Information:**
Name Of Carrier:
FEDERAL Express
Date Shipped: 2/26/87
Airbill Number: 495164773

(7) **Sample Description:** (Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
X Solids
___ Other ___ (specify)
MATCHES ORGANIC SAMPLE NO. BI 967

(8) **Mark Volume Level On Sample Bottle**
Check Analysis required
X Total Metals
___ Cyanide

N453 - S1

SMO COPY

S-1

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-411

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Centurr Laboratories, Inc. CASE NO. 644

SOW NO. 785

LAB SAMPLE ID. NO. 001A-01 QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water _____ Soil ✓ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6200P	13.	Barium	[1760]P
2.	Antimony	35PN	J	14.	Beryllium	3630P	
3.	Arsenic	67FN	J	15.	Boron	Cadmium 7.6	
4.	Barium	316P	16.	Bromide	23UP	
5.	Beryllium	5.4UP	17.	Potassium	[714]P	
6.	Cadmium	5.2P	18.	Selenium	2.2UF	
7.	Calcium	10,100P	19.	Silver	12UP	
8.	Chromium	12UP	20.	Sodium	[1290]P	
9.	Cobalt	12UP	21.	Thallium	11UFN <11>FN	J
10.	Copper	63P	22.	Vanadium	[26]P	
11.	Iron	242,000P	23.	Zinc	269P	
12.	Lead	107FS	Percent Solids (%)	17.05	
Cyanide					

Footnotes: For reporting results to EPA, standard remark qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and included on Cover Page, however.

Comments: Medium dark soil

Lab Manager Kenneth Bond

U.S. ENVIRONMENTAL PROTECTION AGENCY — EPA's Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 — 703/557-2490 — FTS/557-2490

ORGANICS TRAFFIC REPORT

Sample Number: BI 984

① **Case Number:** 6889

Sample Site Name/Code: Hudson River Psyc.

② **SAMPLE CONCENTRATION** (Check One)
- [X] Low Concentration
- [ ] Medium Concentration

③ **SAMPLE MATRIX** (Check One)
- [X] Water
- [ ] Soil/Sediment

④ **Ship To:** VOA Lab.
Attn: C. Carter
Transfer Ship To:

⑤ **Regional Office:** II
Sampling Personnel: J. Bullis
(Name)
201-225-6160
(Phone)
Sampling Date: 2/26/87
(Begin) (End)

⑥ **For each sample collected specify number of containers used and mark volume level on each bottle.**

	Number of Containers	Approximate Total Volume
Water (Extractable)	2	160 oz
Water (VOA)	2	80 ml
Soil/Sediment (Extractable)		
Soil/Sediment (VOA)		
Other PCB	1	80 oz

⑦ **Shipping Information**
Federal Express
Name of Carrier
2/26/87
Date Shipped:
49516 4935
Airbill Number:

⑧ **Sample Description**
- [ ] Surface Water
- [ ] Ground Water
- [ ] Leachate
- [ ] Mixed Media
- [ ] Solids
- [✓] Other (specify) Trip Blank

⑨ **Sample Location**
N453 - BLK - 1

⑩ **Special Handling Instructions:** (e.g., safety precautions, hazardous nature)
Matches Doors. MBI 483

SMO COPY

B - 1

Versar, Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

Sample Number
BI-984

ORGANICS ANALYSIS DATA SHEET (Page 1)

Laboratory Name: VERSAR
Lab Sample ID No: 23900
Sample Matrix: WATER
Data Release Authorized By:

Case No: 6889
QC Report No: 6889
Contract No: 68-01-7082
Date Sample Received: 02/27/87

VOLATILE COMPOUNDS

Concentration: LOW
Date Extracted/Prepared: 03/04/87
Date Analyzed: 03/04/87
Conc/Dil Factor: 1 pH NA
Percent Moisture: 100

CAS Number		ug/l
74-87-3	Chloromethane	10 u
74-83-9	Bromomethane	10 u
75-01-4	Vinyl Chloride	10 u
75-00-3	Chloroethane	10 u
75-09-2	Methylene Chloride	5 u
67-64-1	Acetone	36
75-15-0	Carbon Disulfide	5 u
75-35-4	1,1-Dichloroethene	5 u
75-34-3	1,1-Dichloroethane	5 u
156-60-5	Trans-1,2-Dichloroethene	5 u
67-66-3	Chloroform	5 u
107-06-2	1,2-Dichloroethane	5 u
78-93-3	2-butanone	10 u
71-55-6	1,1,1-Trichloroethane	5 u
56-23-5	Carbon Tetrachloride	5 u
108-05-4	Vinyl Acetate	10 u
75-27-4	Bromodichloromethane	5 u

CAS Number		ug/l
78-87-5	1,2-Dichloropropane	5 u
10061-02-6	Trans-1,3-Dichloropropene	5 u
79-01-6	Trichloroethene	5 u
124-48-1	Dibromochloromethane	5 u
79-00-5	1,1,2-Trichloroethane	5 u
71-43-2	Benzene	5 u
10061-01-5	cis-1,3-Dichloropropene	5 u
110-75-8	2-chloroethylvinylether	10 u
75-25-2	Bromoform	5 u
108-10-1	4-Methyl-2-Pentanone	10 u
591-78-6	2-Hexanone	10 u
127-18-4	Tetrachloroethene	5 u
79-34-5	1,1,2,2-Tetrachloroethane	5 u
108-88-3	Toluene	~~5 u~~ JB
108-90-7	Chlorobenzene	5 u
100-41-4	Ethylbenzene	5 u
100-42-5	Styrene	5 u
	Total Xylenes	5 u

Data Reporting Qualifiers

Value If the result is a value greater than or equal to the detection limit, report the value.

u Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

VOAF1: REV062486

300220

B-1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 703/750-3000

Sample Number
BI984

Case No: 6889

ORGANICS ANALYSIS DATA SHEET (Page 2)
Semivolatile Compounds

Concentration: LOW

Date Extracted/Prepared: 03/01/87

Date Analyzed: 03/17/87

Conc/Dil Factor: 1

GPC Cleanup [ ]Yes [ ]No

Separatory Funnel Extraction [ ]Yes

Continuous Liquid-LIquid Extraction [X]Yes

CAS Number		ug/l
108-95-2	Phenol	10 u
111-44-4	bis(2-Chloroethyl)Ether	10 u
95-57-8	2-Chlorophenol	10 u
541-73-1	1,3-Dichlorobenzene	10 u
106-46-7	1,4-Dichlorobenzene	10 u
100-51-6	Benzyl Alcohol	10 u
95-50-1	1,2-Dichlorobenzene	10 u
95-48-7	2-Methylphenol	10 u
39638-32-9	bis(2-chloroisopropyl)ether	10 u
106-44-5	4-methylphenol	10 u
621-64-7	N-Nitroso-Di-n-propylamine	10 u
67-72-1	Hexachloroethane	10 u
98-95-3	Nitrobenzene	10 u
78-59-1	Isophorone	10 u
88-75-5	2-Nitrophenol	10 u
105-67-9	2,4-dimethylphenol	10 u
65-85-0	Benzoic Acid	50 u
111-91-1	bis(2-chloroethoxy)methane	10 u
120-83-2	2,4-dichlorophenol	10 u
120-82-1	1,2,4-trichlorobenzene	10 u
91-20-3	Naphthalene	10 u
106-47-8	4-Chloroaniline	10 u
87-68-3	Hexachlorobutadiene	10 u
59-50-7	4-chloro-3-methylphenol	10 u
91-57-6	2-methylnaphthalene	10 u
77-47-4	Hexachlorocyclopentadiene	10 u
88-06-2	2,4,6-Trichlorophenol	10 u
95-95-4	2,4,5-Trichlorophenol	50 u
91-58-7	2-Chloronaphthalene	10 u
88-74-4	2-Nitroaniline	50 u
131-11-3	Dimethyl Phthalate	10 u
208-96-8	Acenaphthylene	10 u
99-09-2	3-Nitroaniline	50 u

CAS Number		ug/l
83-32-9	Acenaphthene	10 u
51-28-5	2,4-Dinitrophenol	50 u
100-02-7	4-Nitrophenol	50 u
132-64-9	Dibenzofuran	10 u
121-14-2	2,4-Dinitrotoluene	10 u
606-20-2	2,6-Dinitrotoluene	10 u
84-66-2	Diethylphthalate	10 u
7005-22-3	4-Chlorophenyl-phenylether	10 u
86-73-7	Fluorene	10 u
100-01-6	4-Nitroaniline	50 u
534-52-1	4,6-dinitro-2-methylphenol	50 u
86-30-6	N-Nitrosodiphenylamine (1)	10 u
101-55-3	4-Bromophenyl-phenylether	10 u
118-74-1	Hexachlorobenzene	10 u
87-86-5	Pentachlorophenol	50 u
85-01-8	Phenanthrene	10 u
120-12-7	Anthracene	10 u
84-74-2	Di-n-butylphthalate	10 u
206-44-0	Fluoranthene	10 u
129-00-0	Pyrene	10 u
85-68-7	Butylbenzylphthalate	10 u
91-94-1	3,3'-Dichlorobenzidine	20 u
56-55-3	Benzo(a)anthracene	10 u
117-81-7	bis(2-Ethylhexyl)Phthalate	17
218-01-9	Chrysene	10 u
117-84-0	Di-n-Octylphthalate	10 u
205-99-2	Benzo(b)Fluoranthene	10 u
207-08-9	Benzo(k)Fluoranthene	10 u
50-32-8	Benzo(a)pyrene	10 u
193-39-5	Indeno(1,2,3-cd)Pyrene	10 u
53-70-3	Dibenz(a,h)Anthracene	10 u
191-24-2	Benzo(g,h,i)Perylene	10 u

(1)-Cannot be separated from diphenylamine

B - 1

Versar Inc. Laboratory Operations
6850 Versar Center, Springfield Va. 22151
(703) 750-3000

Sample Number
BI 984

ORGANICS ANALYSIS DATA SHEET
(Page 3)

Pesticides/PCBs

Concentration: |Low| Medium (circle one)

GPC Cleanup [ ] Yes [X] No

Date Extracted/Prepared: 2-28-87

Separatory Funnel Extration [ ] Yes

Date Analyzed: 3-10-87

Continuous Liquid-Liquid Extraction [X] Yes [ ] No

Conc/Dil Factor 1.00

Percent Moisture(decanted) 0.00

CAS Number		ug/l
319-84-6	alpha-BHC	0.05 u
319-85-7	beta-BHC	0.05 u
319-86-8	delta-BHC	0.05 u
58-89-9	gamma-BHC (Lindane)	0.05 u
76-44-8	Heptachlor	0.05 u
309-00-2	Aldrin	0.05 u
1024-57-3	Heptachlor Epoxide	0.05 u
959-98-8	Endosulfan I	0.05 u
60-57-1	Dieldrin	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	Endrin	0.10 u
33213-65-9	Endosulfan II	0.10 u
72-54-8	4,4'-DDD	0.10 u
1031-07-8	Endosulfan Sulfate	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	Methoxychlor	0.10 u
53494-70-5	Endrin Ketone	0.10 u
57-74-9	Chlordane	0.50 u
8001-35-2	Toxaphene	1.0 u
12674-11-2	Aroclor-1016	0.50 u
11104-28-2	Aroclor-1221	0.50 u
11141-16-5	Aroclor-1232	0.50 u
53469-21-9	Aroclor-1242	0.50 u
12672-29-6	Aroclor-1248	0.50 u
11097-69-1	Aroclor-1254	1.0 u
11096-82-5	Aroclor-1260	1.0 u

S. Jonathan
3-10-87

Vi = Volume of extract injected (ul)
Vs = Volume of Water Extracted (ml)
Ws = Weight of sample extracted (g)
Vt = Volume of total extract (ul)

Vs 1000.00 or Ws _____ Vt 10000 Vi 2.00

300222

B - 1

Versar Inc., Laboratory Operations
5850 Versar Center, Springfield VA 22151 (703) 750-3000

SAMPLE ID
BI-984

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
11.		NO VOLATILES DETECTED	VOA	NA	NA
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
110.					
111.					
112.					
113.					
114.					
115.					
116.					
117.					
118.					
119.					
120.					
121.					
122.					
123.					
124.					
125.					
126.					
127.					
128.					
129.					
130.					

300223

B - 1

Versar Inc., Laboratory Operations
6850 Versar Center, Springfield VA 22151 (703) 750-3000

BI984

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan	Estimated Concentration (ug/Kg or ug/l)
1.		UNKNOWN ORGANIC ACID.	BNA	2036	100 J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

300224

6-85

U.S. ENVIRONMENTAL PROTECTION AGENCY EWI Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490 FTS/557-2490

INORGANICS TRAFFIC REPORT

Sample Number
MBI 483

(1) Case Number: 6889
Sample Site Name/Code:
Hudson River Psyc.

(2) SAMPLE CONCENTRATION
(Check One)
✓ Low Concentration
___ Medium Concentration

(3) SAMPLE MATRIX
(Check One)
✓ Water
___ Soil/Sediment

(4) Ship To:
Century Labs
Attn: Ken Bond
Transfer
Ship To:

(5) Sampling Office: FIT II
Sampling Personnel:
(Name) S. Bullis
(Phone) 201-225-6160
Sampling Date:
(Begin) 2/26/87 (End) 2/26/87

(6) Shipping Information:
Name Of Carrier: Federal Express
Date Shipped: 2/26/87
Airbill Number: 4951647 73

(7) Sample Description:
(Check One)
___ Surface Water
___ Ground Water
___ Leachate
___ Mixed Media
___ Solids
✓ Other Trip Blank
(specify)
MATCHES ORGANIC SAMPLE NO. ___
B1984

(8) Mark Volume Level
On Sample Bottle
Check Analysis required
X Total Metals
___ Cyanide
N453 - BLK-1

SMO COPY

B - 1

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MB1-443

Date 4-2-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Century Laboratories, Inc. CASE NO. 644

SOW NO. 785

LAB SAMPLE ID. NO. 0014-1V QC REPORT NO. 021

Elements Identified and Measured

Concentration: Low ✓ Medium _____

Matrix: Water ✓ Soil _____ Sludge _____ Other _____

(ug/L) or mg/kg dry weight (Circle One)

1. Aluminum	20UPE	13. Manganese	100UP
2. Antimony	~~50UPN~~	14. Mercury	5.0UP
3. Arsenic	5.0UF	15. Nickel	~~0.2UPN~~
4. Barium	10UP	16. Potassium	20UP
5. Beryllium	5.0UP	17. Selenium	500UP
6. Cadmium	4.0UP	18. Silver	2.0UF
7. Calcium	100UP	19. Sodium	10UP
8. Chromium	10UP	20. Thallium	~~5000UPE~~
9. Cobalt	10UP	21. Vanadium	<2.0>FN
10. Copper	6.0UP	22. Zinc	10UP
11. Iron	50UP	23. Cyanide	[illegible]JP
12. Lead	1.0UF	Percent Solids (%)	N/A
Cyanide	N/A		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on cover page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and included on cover page, however.

Comments: Clear liquid
E = see Addl

Lab Manager Kenneth Ford

REFERENCE NO. 14

0001-C
02-8611-63

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611.63	11/4/86	0905

DISTRIBUTION:
File
P. Morton

BETWEEN:	OF:	PHONE:
Mr. Robert Coffey	Hudson River Psychiatric center	(914) 452-8000

AND: J. Mayo (NUS)

DISCUSSION:

Site Access -

- Mr. Coffey say he has no knowledge of any active or inactive waste disposal area on the property. He said he heard once that some low area may have been filled in but he doesn't know if municipal refuse was used for fill.

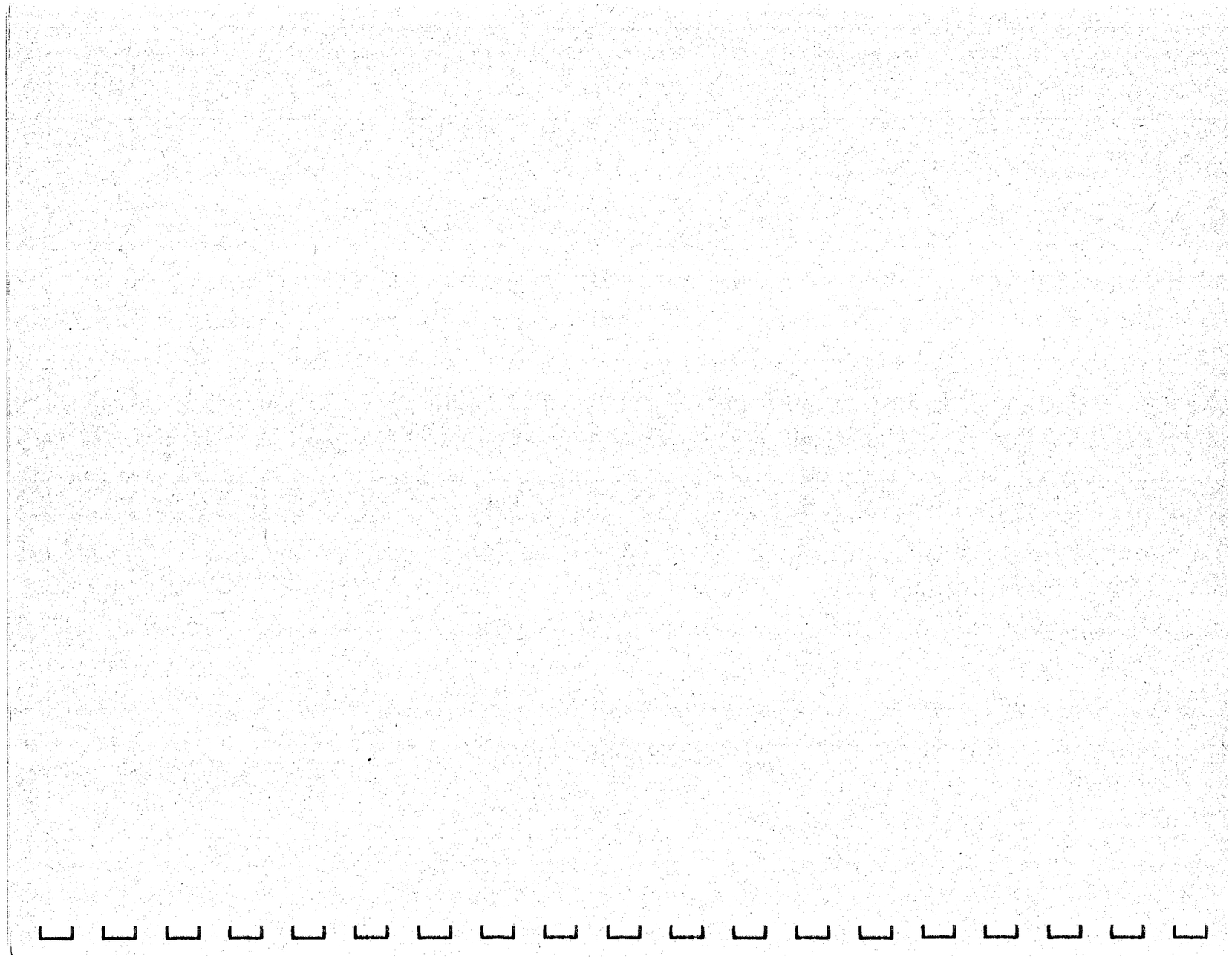
- There are no wells on the site.
- I indicated that SI would take place in ~~on~~ November. An exact date would be determined later.

-

ACTION ITEMS: - Send ~~a~~ letter to Mr. Coffey
Hudson River Psychiatric Center
Rt. 9
Branch B
Poughkeepsie, N.Y.
Attn: Mr. Robert Coffey.

NUS 067 REVISED 0581

REFERENCE NO. 15



0019-C
02-8611-63

NUS CORPORATION AND SUBSIDIARIES — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63	3/17/87	1550

DISTRIBUTION:

File
Hudson River Psychiatric Center

BETWEEN:	OF:	PHONE:
Mr. Robert Coffey	HRPC	x120 (914) 452-8000

AND: Peter Morton

DISCUSSION:

I called Mr. Coffey about permits that the HRPC had when they were accepting waste. To the best of his knowledge, they had no permit - just a spoken agreement with the town

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 16

␣ ␣

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

TOWN OF
POUGHKEEPSIE,
NEW YORK
DUTCHESS COUNTY

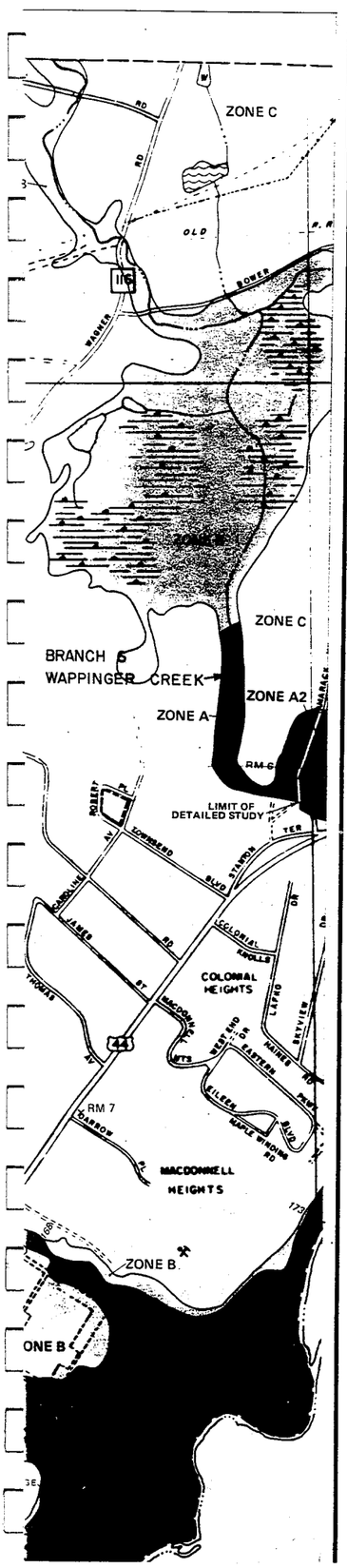
COMMUNITY-PANEL NUMBER
361142 0005 A

PAGE 5 OF 20
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE
NOVEMBER 15, 1978



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION



KEY TO MAP



500-Year Flood Boundary

100-Year Flood Boundary

Zone Designations* With Date of Identification e.g., 12/2/74

100-Year Flood Boundary

500-Year Flood Boundary

Base Flood Elevation Line With Elevation In Feet** — 513

Base Flood Elevation in Feet Where Uniform Within Zone** (EL 987)

Elevation Reference Mark RM7x

River Mile •M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

For Description of Elevation Reference Marks, See Panel 361142 0010

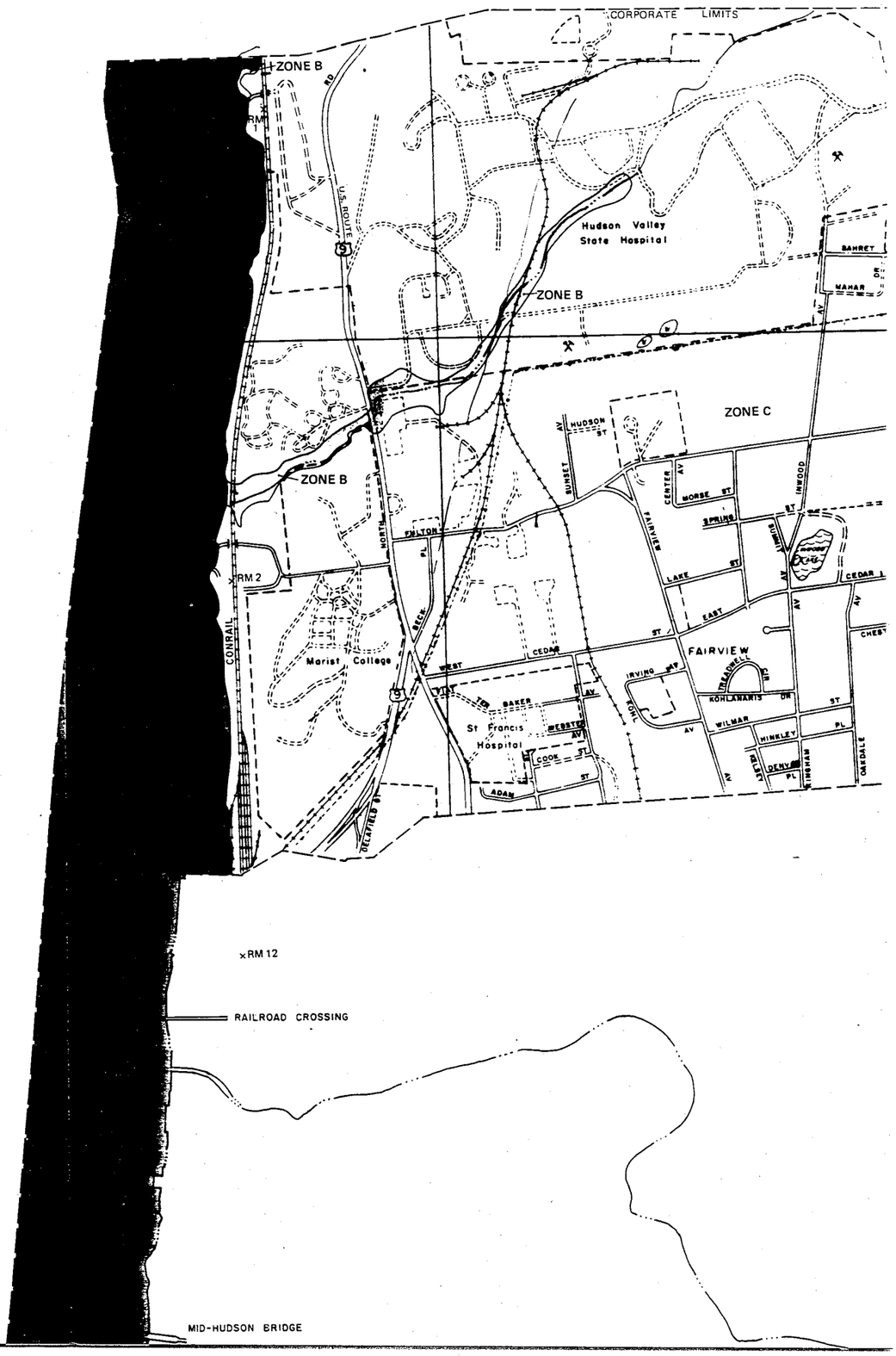
INITIAL IDENTIFICATION
NOVEMBER 29, 1974

CONVERSION TO REGULAR PROGRAM
NOVEMBER 15, 1978

Refer to the CONVERSION TO REGULAR PROGRAM date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE
800 0 800 FEET


CORPORATE LIMITS
ZONE B
RM 1
U.S. ROUTE 9
Hudson Valley State Hospital
ZONE B
ZONE C
ZONE B
RM 2
CONRAIL
Marist College
St Francis Hospital
FAIRVIEW
RM 12
RAILROAD CROSSING
MID-HUDSON BRIDGE

REFERENCE NO. 17

␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣ ␣

0027-C
02-8611-53

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63 NY53II	8/17/88	0825

DISTRIBUTION: Hudson River Psychiatric Center

BETWEEN:	OF:	PHONE:
John JanKiewitz	Town of Lloyd water Dept.	2400 (914)691-5611

AND: A. Culmone (NUS)

DISCUSSION:

Are there any public water supply intakes in the Hudson River? yes at mile 76.3
≈ 1.8 miles from site
Size of population served? 1150 metered users
1150 x 3.8 = 4370

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 18

HAZARDOUS CHEMICALS DESK REFERENCE

N. Irving Sax / Richard J. Lewis, Sr.

SYNS: BENZHYDRAMINE HYDROCHLORIDE * 2-(BENZHYDRYLOXY)-N,N-DIMETHYLETHYLAMINEHYDROCHLORIDE * DIMETHYLAMINE BENZHYDRYL ESTER HYDROCHLORIDE * BETA-DIMETHYLAMINOETHYL BENZHYDRYL ETHER HYDROCHLORIDE * DIPHENYLHYDRAMINE HYDROCHLORIDE * 2-DIPHENYLMETHOXY-N,N-DIMETHYLETHYLAMINE HYDROCHLORIDE * ALPHA-HYDROXYDIPHENYLMETHANE-BETA-DIMETHYLAMINOETHYL ETHER HYDROCHLORIDE * NCI-C56075

THR: Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. A suspected carcinogen. See also esters, ethers. When heated to decomposition, it emits very toxic fumes of NO_x and HCl.

BENTONITE **HR: 3**
CAS: 1302-78-9 NIOSH: CT 9450000

PROP: A clay containing appreciable amounts of the clay mineral montmorillonite; light yellow or green, cream, pink, gray to black, plastic, insol in water and common organic solvents.

SYNS: ALBAGEL PREMIUM USP 4444 * MAGBOND * MONTMORILLONITE * PANTHER CREEK BENTIONITE * SOUTHERN BENTONITE

THR: Poison by intravenous route. A general purpose food additive.

BENZ(e)ACEPHENANTHRYLENE HR: 3
CAS: 205-99-2 NIOSH: CU 1400000
mf: $C_{20}H_{12}$ mw: 252.32

PROP: mp: 168°.

SYNS: 3,4-BENZ(E)ACEPHENANTHRYLENE * 2,3-BENZFLUORANTHENE * 3,4-BENZFLUORANTHENE * BENZO(B)FLUORANTHENE * 2,3-BENZOFLUORANTHENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZACINE HYDROCHLORIDE HR: 3
CAS: 71-79-4 NIOSH: DD 3150000
mf: $C_{18}H_{21}O_3ClH$ mw: 403.28

SYNS: DIMETHYLAMINOETHYLDIPHENYLHYDROXYACETATEHYDROCHLORIDE * DIMETHYL-N-ETHYL BENZILATE, HYDROCHLORIDE * BETA-DIMETHYLAMINOETHYL BENZILATE HYDROCHLORIDE * 2-(DIMETHYLAMINO)ETHYL BENZILATE HYDROCHLORIDE * DIMETHYLAMINOETHYL BENZYLATE HYDROCHLORIDE

THR: Poison by ingestion, intravenous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of HCl.

BENZ(c)ACRIDINE
CAS: 225-51-4 NIOSH: CU 2975000
mf: $C_{17}H_{11}N$ mw: 229.29

PROP: mp: 108°.

SYNS: 12-AZABENZ(A)ANTHRACENE * 3,4-BENZACRIDINE * 7,8-BENZACRIDINE (FRENCH) * 3,4-BENZOACRIDINE * ALPHA-CHRYSIDINE * ALPHA-NAPHTHACRIDINE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits toxic fumes of NO_x.

BENZ(c)ACRIDINE-7-CARBOXALDEHYDE HR: 3
CAS: 3301-75-5 NIOSH: CU 3100000
mf: $C_{18}H_{11}NO$ mw: 257.30

SYNS: 3,4-BENZACRIDINE-9-ALDEHYDE * 7-FORMYLBENZ(C)ACRIDINE * 7-FORMYLBENZO(C)ACRIDINE

THR: An experimental carcinogen. When heated to decomposition, it emits toxic fumes of NO_x.

BENZALDEHYDE **HR: 3**
CAS: 100-52-7 NIOSH: CU 4375000
DOT: 1989
mf: C_7H_6O mw: 106.13

PROP: Refractive liquid. mp: −26°, bp: 179°, flash p: 148°F, d: 1.050 @ 15°/4 °, autoign temp: 377°F, vap press: 1 mm @ 26.2°, vap d: 3.65.

SYNS: ALMOND ARTIFICIAL ESSENTIAL OIL * ARTIFICIAL ALMOND OIL * BENZENECARBONAL * BENZOIC ALDEHYDE * NCI-C56133

DOT Classification: Combustible Liquid, Label: None

THR: Poison by ingestion and intraperitoneal routes. An allergen. Acts as a feeble local anesthetic. See also aldehydes. Local contact may cause contact dermatitis. Causes central nervous system depression in small doses and convulsions in larger doses. A skin irritant. Mutagenic data. Moderate fire hazard when exposed to heat or flame. To fight fire, use water (may be used as a blanket), alcohol, foam, dry chemical. Incompatible with oxidizers such as peroxy-

formic acid. For further information, see Vol. 1, No. 8 of *DPIM Report*.

BENZALDEHYDE GREEN HR: 3

CAS: 633-03-4 NIOSH: BP 6825000
mf: $C_{27}H_{33}N_2 \cdot HO_4S$ mw: 482.69

PROP: Bright green cryst.

SYNS: ANILINE GREEN * C.I. 42040 * C.I. BASIC GREEN 1, SULFATE (1:1)

THR: Poison by ingestion, intraperitoneal, and intravenous routes. A skin irritant. See also sulfates. When heated to decomposition, it emits very toxic fumes of NO_x and SO_x.

BENZALIN HR: 3

CAS: 146-22-5 NIOSH: DF 2450000
mf: $C_{15}H_{11}N_3O_3$ mw: 281.29

SYNS: 1,3-DIHYDRO-7-NITRO-5-PHENYL-2H-1,4-BENZODIAZEPIN-2-ONE * EPIBENZALIN * NITRAZEPAM * 7-NITRO-5-PHENYL-2,3-DIHYDRO-1H-1,4-BENZODIAZEPIN-2-ONE

THR: Poison by intraperitoneal and intravenous routes. Moderately toxic by ingestion. Mutagenic data. When heated to decomposition it emits toxic fumes of NO_x.

BENZ(a)ANTHRACENE HR: 3

CAS: 56-55-3 NIOSH: CV 9275000
mf: $C_{18}H_{12}$ mw: 228.30

PROP: Colorless leaflets or plates; bp: 400°, mp: 160°.

SYNS: BENZANTHRACENE * 1,2-BENZ(A)ANTHRACENE * 1,2-BENZANTHRENE * BENZOANTHRACENE * 1,2-BENZOANTHRACENE * BA * 1,2-BENZANTHRACENE * 1,2-BENZANTHRAZEN (GERMAN) * BENZANTHRENE * BENZO(A)ANTHRACENE * BENZO(A)PHENANTHRENE * BENZO(B)PHENANTHRENE * 2,3-BENZOPHENANTHRENE * 2,3-BENZPHENANTHRENE * NAPHTHANTHRACENE * TETRAPHENE

THR: An experimental carcinogen. Mutagenic data. It is found in oils, waxes, smoke, food, drugs. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZ(a)ANTHRACENE-1,2-DIHYDRODIOL HR: 3

CAS: 60967-88-6 NIOSH: CW 1780000
mf: $C_{18}H_{14}O_2$ mw: 262.32

SYNS: BA-1,2-DIHYDRODIOL * TRANS-1,2-DIHYDROXY-1,2-DIHYDROBENZ(A)ANTHRACENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZ(a)ANTHRACENE-3,4-DIHYDRODIOL HR: 3

CAS: 60967-89-7 NIOSH: CW 1783000
mf: $C_{18}H_{14}O_2$ mw: 262.32

SYNS: TRANS-3,4-DIHYDRO-3,4-DIHYDROXYBENZO(A)ANTHRACENE * TRANS-3,4-DIHYDROXY-3,4-DIHYDROBENZ(A)ANTHRACENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZ(a)ANTHRACENE-5,6-DIHYDRODIOL HR: 3

CAS: 3719-37-7 NIOSH: CW 1786000
mf: $C_{18}H_{14}O_2$ mw: 262.32

SYNS: BA-5,6-DIHYDRODIOL * TRANS-5,6-DIHYDROXY-5,6-DIHYDROBENZ(A)ANTHRACENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

trans-BENZ(a)ANTHRACENE-8,9-DIHYDRODIOL HR: 3

CAS: 34501-24-1 NIOSH: CW 1790000
mf: $C_{18}H_{14}O_2$ mw: 262.32

SYNS: BA-8,9-DIHYDRODIOL * TRANS-8,9-DIHYDROXY-8,9-DIHYDROBENZ(A)ANTHRACENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZ(a)ANTHRACENE-10,11-DIHYDRODIOL HR: 3

CAS: 60967-90-0 NIOSH: CW 1795000
mf: $C_{18}H_{14}O_2$ mw: 262.32

SYNS: BA-10,11-DIHYDRODIOL * TRANS-10,11-DIHYDROXY-10,11-DIHYDROBENZ(A)ANTHRACENE

THR: An experimental carcinogen. When heated to decomposition, it emits acrid smoke and irritating fumes.

THR: Moderately toxic by ingestion and intraperitoneal routes. See also ketones. Slight fire hazard when heated. Incompatible with oxidizers. When heated to decomposition, it emits acrid and irritating fumes. For further information, see Vol. 2, No. 1 of *DPIM Report*.

BENZO(a)PYRENE **HR: 3**
CAS: 50-32-8 NIOSH: DJ 3675000
mf: $C_{20}H_{12}$ mw: 252.32

PROP: Yellow crystals insol in water, sol in benzene, toluene, xylene; mp: 179°, bp: 312° @ 10 mm.

SYNS: BENZO(D,E,F)CHRYSENE * 3,4-BENZOPIRENE (ITALIAN) * 3,4-BENZOPYRENE * 6,7-BENZOPYRENE * 3,4-BENZPYREN (GERMAN) * BENZ(A)PYRENE * 3,4-BENZ(A)PYRENE * 3,4-BENZYPYRENE

THR: A poison via subcutaneous route. An experimental carcinogen. A common air contaminant of water, food, and smoke. Mutagenic data. When heated to decomposition, it emits acrid smoke. For further information, see Vol. 5, No. 1 of *DPIM Report*.

BENZO(e)PYRENE **HR: 3**
CAS: 192-97-2 NIOSH: DJ 4200000
mf: $C_{20}H_{12}$ mw: 252.32

SYNS: 1,2-BENZOPYRENE * 1,2-BENZPYRENE * 4,5-BENZOPYRENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZO(a)PYRENE-6-CARBOXYALDEHYDE **HR: 3**
CAS: 13312-42-0 NIOSH: DJ 4910000
mf: $C_{21}H_{12}O$ mw: 280.33

SYNS: 3,4-BENZPYRENE-5-ALDEHYDE * 6-FORMYLBENZO(A)PYRENE

THR: An experimental carcinogen. When heated to decomposition, it emits irritating fumes.

anti-BENZO(a)PYRENE-7,8-DIHYDRODIOL-9,10-OXIDE **HR: 3**
NIOSH: DJ 5050000
mf: $C_{20}H_{14}O_3$ mw: 302.34

SYNS: ANTI-BP-7,8-DIHYDRODIOL-9,10-OXIDE * BENZO(A)PYRENE-7,8-DIHYDRODIOL-9,10-EXPOXIDE (ANTI) * BP-7,8-DIHYDRODIOL-9,10-EPOXIDE(ANTI)

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZO(a)PYRENE-6-METHANOL **HR: 3**
CAS: 21247-98-3 NIOSH: DJ 6410000
mf: $C_{21}H_{14}O$ mw: 282.35

SYN: 6-HYDROXYMETHYLBENZO(A)PYRENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits irritating fumes.

BENZO(a)PYRENE-4,5-OXIDE **HR: 3**
CAS: 37574-47-3 NIOSH: DJ 7900000
mf: $C_{20}H_{12}O$ mw: 268.32

SYNS: BENZO(A)PYRENE-4,5-EPOXIDE * BP-4,5-EPOXIDE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid and irritating fumes.

BENZO(a)PYRENE-7,8-OXIDE **HR: 3**
CAS: 36504-65-1 NIOSH: DJ 7920000
mf: $C_{20}H_{12}O$ mw: 268.32

SYNS: BENZO(A)PYRENE-7,8-EPOXIDE * 6-BETA,7-ALPHA-DIHYDROBENZO(10,11)-CHRYSENO(1,2-B)OXIRENE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits irritating fumes.

BENZO(a)PYRENE-9,10-OXIDE **HR: 3**
CAS: 36504-66-2 NIOSH: DJ 7929000
mf: $C_{20}H_{12}O$ mw: 268.32

SYN: BP-9,10-OXIDE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

BENZO(a)PYRENE-11,12-OXIDE **HR: 3**
CAS: 60448-19-3 NIOSH: DJ 7940000
mf: $C_{20}H_{12}O$ mw: 268.32

SYN: BP-11,12-OXIDE

THR: An experimental carcinogen. Mutagenic data. When heated to decomposition, it emits acrid smoke and irritating fumes.

react with water or steam to produce toxic and corrosive fumes; can react vigorously with oxidizing materials. To fight fire, use water, foam, CO_2, dry chemical. Incompatible with bleaching powder.

Treatment of local lesions is mainly by cleanliness and emollients, similar to that of burns. Oils protect the skin only slightly. Immediately after exposure, the poison may be partly removed by scrubbing the victim with kerosene, but penetration is so rapid that this treatment is not successful if delayed for 15 to 30 minutes.

BIS(2-CHLOROETHYL)SULFONE HR: 3

CAS: 471-03-4 NIOSH: WR 3325000
mf: $C_4H_8Cl_2O_2S$ mw: 191.08

SYNS: BIS(BETA-CHLOROETHYL)SULFONE * MUSTARD GAS SULFONE * MUSTARD SULFONE * YPERITE SULFONE

THR: A poison via intravenous and subcutaneous routes. Moderately toxic via inhalation. See also sulfonates. When heated to decomposition, it emits very toxic fumes of Cl^- and SO_x.

BIS(2-CHLOROISOPROPYL) ETHER HR: 3

CAS: 108-60-1 NIOSH: KN 1750000
DOT: 2490
mf: $C_6H_{12}Cl_2O$ mw: 171.08

PROP: Colorless liquid. bp: 187.8°, fp: −20°, flash p: 185°F (OC), d: 1.11 @ 25°/25°, vap d: 6.0, vap press: 0.10 mm @ 20°.

SYNS: BIS(2-CHLORO-1-METHYLETHYL) ETHER * (2-CHLORO-1-METHYLETHYL) ETHER * DICHLORODIISOPROPYL ETHER * 2,2′-DICHLOROISOPROPYL ETHER * NCI-C50044

DOT Classification: Label: Corrosive

THR: Poison by ingestion; moderately toxic by skin absorption and inhalation. See also ethers. Moderate fire hazard when exposed to heat, flame, or powerful oxidizers. See ethers for explosion hazard. Dangerous; when heated to decomposition, emits highly toxic fumes of chlorides. To fight fire, use water to blanket fire; foam, CO_2, dry chemical. Incompatible with oxidizing materials. For further information, see Vol. 6, No. 3 of *DPIM Report*.

BIS-1,2-(CHLOROMETHOXY)-ETHANE HR: 3

CAS: 13483-18-6 NIOSH: KH 5450000
mf: $C_4H_8Cl_2O_2$ mw: 159.02

PROP: Viscous liquid; bp: 99°-100° @ 22 mm, d: 1.2879 @ 14°/15°.

SYN: ETHYLENE GLYCOL BIS(CHLOROMETHYL)-ETHER

THR: An experimental neoplastigen and carcinogen. See also ethers. When heated to decomposition, it emits toxic fumes of Cl^-. For further information see Vol. 1, No. 5 of *DPIM Report*.

1,4-BIS(CHLOROMETHOXYMETHYL)-BENZENE HR: 3

CAS: 56894-91-8 NIOSH: CY 8420000
mf: $C_{10}H_{12}Cl_2O_2$ mw: 235.12

SYN: BIS-1,4-(CHLOROMETHOXY)-P-XYLENE

THR: An experimental carcinogen, neoplastigen, and tumorigen. When heated to decomposition, it emits toxic fumes of Cl^-.

BIS(CHLOROMETHYL) ETHER HR: 3

CAS: 542-88-1 NIOSH: KN 1575000
mf: $C_2H_4Cl_2O$ mw: 114.96

PROP: Volatile liquid; bp: 105°, d: 1.315 @ 20°, vap d: 4.0. flash p: <19°.

SYNS: CHLORO(CHLOROMETHOXY)METHANE * DICHLORDIMETHYLAETHER (GERMAN) * SYM-DICHLORO-DIMETHYL ETHER * DIMETHYL-1,1′-DICHLOROETHER * OXYBIS-(CHLOROMETHANE)

ACGIH TLV: TWA 0.001 ppm

THR: Poison by inhalation, ingestion, and skin absorption. See also ethers. An experimental and human carcinogen, neoplastigen, and tumorigen. Mutagenic data. When heated to decomposition, it emits very toxic fumes of Cl^-. For further information, see Vol. 6, No. 3 of *DPIM Report*.

1,1-BIS(4-CHLOROPHENYL)-2,2-DICHLOROETHANE HR: 3

CAS: 72-54-8 NIOSH: KI 0700000
mf: $C_{14}H_{10}Cl_4$ mw: 320.04

PROP: Crystalline solid; mp: 110°, vap d: 11.

SYNS: 1,1-BIS(P-CHLOROPHENYL)-2,2-DICHLOROETHANE * 2,2-BIS(P-CHLOROPHENYL)-1,1-DICHLOROETHANE * 2,2-BIS(4-CHLOROPHENYL)-1,1-DICHLOROETHANE * p,p′-DDD * 1,1-DICHLOOR-2,2-BIS(4-CHLOOR FENYL)-ETHAAN (DUTCH) * 1,1-DICHLOR-2,2-BIS(4-

CHLOR-PHENYL)-AETHAN (GERMAN) * 1,1-DICHLORO-2,2-BIS(P-CHLOROPHENYL)ETHANE * 1,1-DICHLORO-2,2-BIS(4-CHLOROPHENYL)-ETHANE (FRENCH) * 1,1-DICHLORO-2,2-BIS-(PARACHLOROPHENYL)ETHANE * 1,1-DICHLORO-2,2-DI(4-CHLOROPHENYL)ETHANE * P,P′-DICHLORODIPHENYLDICHLOROETHANE * 1,1-DICLORO-2,2-BIS(4-CLORO-FENIL)-ETANO (ITALIAN) * ENT 4,225 * NCI-C00475 * TETRACHLORODIPHENYLETHANE

THR: Poison by ingestion. Experimental tumorigen, neoplastigen, carcinogen. Mutagenic data. Moderate skin toxicity. See also DDT. When heated to decomposition, it emits toxic fumes of Cl^-. For further information, see Vol. 5, No. 3 of *DPIM Report*.

2,2-BIS(p-CHLOROPHENYL)-1,1-DICHLOROETHYLENE HR: 3

CAS: 72-55-9 NIOSH: KV 9450000
mf: $C_{14}H_8Cl_4$ mw: 318.02

SYNS: 1,1-DICHLORO-2,2-BIS(P-CHLOROPHENYL)ETHYLENE * P,P′-DICHLORODIPHENYL DICHLOROETHYLENE * 1,1′-DICHLOROETHENYLIDENE)BIS(4-CHLOROBENZENE) * NCI-C00555

THR: An experimental carcinogen and neoplastigen. Moderately toxic by ingestion. Mutagenic data. When heated to decomposition, it emits very toxic fumes of Cl^-.

1,1-BIS(p-CHLOROPHENYL)-2,2,2-TRICHLOROETHANOL HR: 3

CAS: 115-32-2 NIOSH: DC 8400000
mf: $C_{14}H_9Cl_5O$ mw: 370.48

PROP: Material used in cancer bioassay was 40-60% pure

SYNS: 1,1-BIS(4-CHLOROPHENYL)-2,2,2-TRICHLOROETHANOL * 4-CHLORO-ALPHA-(4-CHLOROPHENYL)-ALPHA-(TRICHLOROMETHYL)BENZENEMETHANOL * DI-(P-CHLOROPHENYL)TRICHLOROMETHYLCARBINOL * 4,4′-DICHLORO-ALPHA-(TRICHLOROMETHYL)BENZHYDROL * ENT 23,648 * KELTHANETHANOL * NCI-C00486 * 2,2,2-TRICHLOOR-1,1-BIS(4-CHLOOR FENYL)-ETHANOL (DUTCH) * 2,2,2-TRICHLOR-1,1-BIS(4-CHLOR-PHENYL)-AETHANOL (GERMAN) * 2,2,2-TRICHLORO-1,1-BIS(4-CHLOROPHENYL)-ETHANOL (FRENCH) * 2,2,2-TRICHLORO-1,1-BIS(4-CLORO-FENIL)-ETANOLO (ITALIAN) * 2,2,2-TRICHLORO-1,1-DI-(4-CHLOROPHENYL)ETHANOL

THR: Acute poison by ingestion and skin absorption. An experimental carcinogen. Moderate acute toxicity via intraperitoneal route. When heated to decomposition, it emits toxic fumes of Cl^-.

BIS(2-CHLOROVINYL)CHLORO ARSINE HR: 3

CAS: 40334-69-8 NIOSH: CG 8350000
mf: $C_4H_4AsCl_3$ mw: 233.35

SYN: LEWISITE II

THR: A dermal and subcutaneous poison. See also arsenic compounds. When heated to decomposition, it emits very toxic fumes of As and Cl^-.

BIS(beta-CYANOETHYL)AMINE HR: 3

CAS: 111-94-4 NIOSH: UG 2975000
mf: $C_6H_9N_3$ mw: 123.18

PROP: Liquid; mp: −5.5°, bp: 173° @ 10 mm, d: 1.0165 @ 30°, vap d: 3.3.

SYNS: BIS-(2-CYANOETHYL)AMINE * N,N-BIS(2-CYANOETHYL)AMINE * DI-(2-CYANOETHYL)AMINE * IMINO-BETA,BETA′-DIPROPIONITRILE * BETA,BETA-IMINODIPROPIONITRILE * BETA,BETA′-IMINODIPROPIONITRILE * 3,3′-IMINODIPROPIONITRILE * USAF A-8564

THR: A poison via intraperitoneal route. Moderately toxic by ingestion and skin absorption. An eye irritant. See also nitriles and amines. When heated to decomposition, it emits toxic fumes of NO_x.

cis-BIS(CYCLOPENTYLAMMINE)-PLATINUM(II) HR: 3

CAS: 38780-36-8 NIOSH: TP 2210000
mf: $C_{10}H_{22}Cl_2N_2Pt$ mw: 436.33

SYNS: CIS-DICHLOROBIS(CYCLOPENTYLAMMINE)-PLATINUM(II) * CIS-DICYCLOPENTYLAMMINE-DICHLOROPLATINUM (II)

THR: An experimental carcinogen. Mutagenic data. See also platinum compounds. When heated to decomposition, it emits very toxic fumes of Cl^- and NO_x.

BIS(DECANOYLOXY)DI-n-BUTYLSTANNANE HR: 3

CAS: 3465-75-6 NIOSH: WH 6715310
mf: $C_{28}H_{56}O_4Sn$ mw: 575.53

D

D&C RED NO. 5 **HR: 3**
CAS: 3761-53-3 NIOSH: QJ 6825000
mf: $C_{18}H_{14}N_2O_7S_2 \cdot 2Na$ mw: 480.44

SYNS: C.I. ACID RED 26 * C.I. FOOD RED 5 * 3-HYDROXY-4-(2,4-XYLYLAZO)-2,7-NAPHTHALENEDISULFONIC ACID, DISODIUM SALT * 4-((2,4-DIMETHYLPHENYL)AZO)-3-HYDROXY-2,7-NAPHTHALENEDISULFONIC ACID, DISODIUM SALT * DISODIUM (2,4-DIMETHYLPHENYLAZO)-2-HYDROXYNAPHTHALENE-3,6-DISULFONATE * DISODIUM (2,4-DIMETHYLPHENYLAZO)-2-HYDROXYNAPHTHALENE-3,6-DISULPHONATE * DISODIUM SALT OF 1-(2,4-XYLYLAZO)-2-NAPHTHOL-3,6-DISULFONIC ACID * DISODIUM SALT OF 1-(2,4-XYLYLAZO)-2-NAPHTHOL-3,6-DISULPHONIC ACID * 1-XYLYLAZO-2-NAPHTHOL-3,6-DISULFONIC ACID, DISODIUM SALT * 1-(2,4-XYLYLAZO)-2-NAPHTHOL-3,6-DISULPHONIC ACID, DISODIUM SALT

THR: An experimental carcinogen and tumorigen. Moderately toxic by intraperitoneal route. When heated to decomposition it emits very toxic NO_x and SO_x.

DACARBAZINE **HR: 3**
CAS: 4342-03-4 NIOSH: NI 3950000
mf: $C_6H_{10}N_6O$ mw: 182.22

SYNS: 4-(3,3-DIMETHYL-1-TRIAZENO)IMIDAZOLE-5-CARBOXAMIDE * 4-(5)-(3,3-DIMETHYL-1-TRIAZENO)IMIDAZOLE-5(4)-CARBOXAMIDE * 5-(3,3-DIMETHYL-1-TRIAZENO)IMIDAZOLE-4-CARBOXAMIDE * NCI-C04717 * NSC-45388

THR: An experimental carcinogen. Moderately toxic. Human blood and gastrointestinal system effects by intravenous route. When heated to decomposition it emits toxic fumes of NO_x.

DALMANE **HR: 3**
CAS: 1172-18-5 NIOSH: DF 0875000
mf: $C_{21}H_{23}ClFN_3O \cdot 2ClH$ mw: 460.84

SYNS: 7-CHLORO-1-(2-(DIETHYLAMINO)ETHYL)-5-(O-FLUOROPHENYL)-2H-1,4-BENZODIAZEPIN-2-ONE * DALMADORM HYDROCHLORIDE * FLURAZEPAM HYDROCHLORIDE

THR: Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion and other routes. Habituating and possibly addictive. When heated to decomposition it emits very toxic fumes of HCl, F^-, NO_x, and Cl^-.

DANIFOS **HR: 3**
CAS: 7173-84-4 NIOSH: TE 8400000
mf: $C_{11}H_{16}ClO_3PS_2$ mw: 326.81

SYNS: S-((P-CHLOROPHENYLTHIO)METHYL) O,O-DIETHYL PHOSPHORODITHIOATE * O,O-DIETHYL-S-P-CHLOROPHENYL THIOMETHYLPHOSPHOROTHIOATE

THR: Poison by ingestion and skin contact. When heated to decomposition it emits very toxic fumes of Cl^-, PO_x and SO_x.

DAUNOMYCIN **HR: 3**
PROP: Isolated from cultures of a *Streptomyces*.

CAS: 20830-81-3 NIOSH: HB 7875000
mf: $C_{27}H_{29}NO_{10}$ mw: 527.57

PROP: Thin red needles. mp: 190° (decomp).

SYNS: DAUNORUBICIN * LEUKAEMOMYCIN C * NCI-C04693 * NSC-82151 * STREPTOMYCES PEUCETIUS

THR: Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. An experimental carcinogen and teratogen. Mutagenic data. When heated to decomposition it emits toxic fumes of NO_x. For further information, see Vol. 1, No. 3 of *DPIM Report*.

DCDD **HR: 3**
CAS: 33857-26-0 NIOSH: HP 3100000
mf: $C_{12}H_6Cl_2O_2$ mw: 253.08

PROP: Colorless cryst; mp: 210°.

SYNS: 2,7-DICHLORODIBENZO-p-DIOXIN * 2,7-DICHLORODIBENZODIOXIN * NCI-C03667

THR: An experimental carcinogen and teratogen. An eye irritant. When heated to decomposition it emits toxic fumes of Cl^-.

DDT **HR: 3**
CAS: 50-29-3 NIOSH: KJ 3325000
DOT: 2761
mf: $C_{14}H_9Cl_5$ mw: 354.48

PROP: Colorless crystals or white to slightly off-white powder. Odorless or with slight aromatic odor. Mp: 108.5°-109°.

SYNS: alpha,alpha-BIS(P-CHLOROPHENYL)-beta,beta,beta-TRICHLORETHANE * 2,2-BIS(p-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE * CHLOROPHENOTHANE * p,p'-DDT * p,p'-DICHLORODIPHENYLTRICHLOROETHANE * 4,4'DICHLORODIPHENYLTRICHLOROETHANE * DIPHENYLTRICHLOROETHANE * ENT 1,506 * NCI-C00464 * 1,1,1-TRICHLOOR-2,2-BIS(4-CHLOOR FENYL)-ETHAAN (DUTCH) * 1,1,1-TRICHLOR-2,2-BIS(4-CHLOR-PHENYL)-AETHAN (GERMAN) * 1,1,1-TRICHLORO-2,2-DI(4-CHLOROPHENYL)-ETHANE * 1,1,1-TRICLORO-2,2-BIS(4-CLORO-FENIL)-ETANO (ITALIAN)

OSHA PEL: TWA 1 mg/m^3 (skin)
ACGIH TLV: TWA: 1 mg/m^3
DFG MAK: 1 mg/m^3
DOT Classification: ORM-A

THR: Poison by ingestion, skin contact, subcutaneous, intravenous, and intraperitoneal routes. Central nervous system effects. An experimental carcinogen, teratogen, and mutagen. See also chlorinated hydrocarbons. DDT and certain of its degradation products, particularly DDE, are stored in fat. This storage effect leads to a concentration of DDT at higher levels of the food chain. A single oral dose of 20g in man produced highly dangerous long term effects, but was not fatal. Common solution formulations of DDT are much more dangerous. Less is known about chronic doses. A common air contaminant. DDT stored in the fat is at least largely inactive since a greater total dose may be stored in an experimental animal than is sufficient as a lethal dose for that same animal if given at one time. A study based on 75 human cases reported an average of 5.3 ppm of DDT stored in the fat. A higher content of DDT and its derivatives (up to 434 ppm of DDE and 648 ppm of DDT) was found in workers who had very extensive exposure. Without exception, the samples were taken from persons who were either asymptomatic or suffering from some disease completely unrelated to DDT. Careful hospital examination of workers, who had been very extensively exposed and who had volunteered for examination revealed no abnormality which could be attributed to DDT. Much higher levels than have been found in man have been observed in the fat of experimental animals which were apparently asymptomatic. DDT stored in the fat is eliminated only very gradually when further dosage is discontinued. After a single dose, the secretion of DDT in the milk and its excretion in the urine reach their height within a day or two and continue at a lower level thereafter. Dangerous acute dose in man: A dose of 20 g has proved highly dangerous though not fatal to man. This dose was taken by 5 persons who vomited an unknown portion of the material and even so recovered only incompletely after 5 weeks. Smaller doses produced less important symptoms with relatively rapid recovery. Experimental ingestion of 1.5 g resulted in great discomfort and moderate neurological changes including paraesthesia, tremor, moderate ataxia, exaggeration of part of the reflexes, headache, and fatigue. Vomiting followed only after 11 hours. Recovery was complete on the following day. The fatal dose of DDT for man is not known. Judging from the literature, no one has ever been killed by DDT in the absence of other insecticides and/or a variety of toxic solvents. However, these common solvent formulations are highly fatal when taken in small doses, partly because of the toxicity of the solvent, and perhaps because of the increased absorbability of the DDT; several fatal cases in man have been reported. Acute oral toxicity for man = 250 mg/kg. Acute oral LD_{50} (rat) = 113 mg/kg (technical grade). Federal fruit and vegetable tolerance = 7 ppm. Dangerous chronic dose in man: Even less is known of the hazard of chronic DDT poisoning. It is known that certain experimental animals fed diets containing one part of DDT per million store the compound in their fat. The storage of DDT in man has been mentioned above. The exact significance of these findings is not known and their further investigation is of the greatest importance. Human volunteers have ingested up to 35 mg/day for 21 months with no noticed ill effects. For further information see Vol. 5, No. 1 of *DPIM Report*.

DECABORANE(14) HR: 3

CAS: 17702-41-9 NIOSH: HD 1400000
DOT: 1868
mf: $B_{10}H_{14}$ mw: 122.24

PROP: Colorless needles. Mp: 99.7°, d: 0.94. (solid), d: 0.78 (liquid @ 100°), vap press: 19 mm @ 100°.

SYNS: DECABORANE (DOT) * BORON HYDRIDE

OSHA PEL: TWA 300 ug/m^3 (skin)
ACGIH TLV: TWA: 0.05 ppm; STEL 0.15 ppm

PROP: 2,4,5,2′,4′,5′-hexabromobiphenyl is the predominant isomer

SYNS: 2,4,5,2′,4′,5′-HEXABROMOBIPHENYL * POLYBROMINATED BIPHENYL

THR: An experimental neoplastigen. When heated to decomposition it emits very toxic fumes of Br^-.

FLUANISONE HYDROCHLORIDE **HR: 3**
CAS: 17160-71-3 NIOSH: EU 3675000
mf: $C_{21}H_{25}FN_2O_2 \cdot ClH$ mw: 392.94

SYNS: 4′-FLUORO-4-(4-(o-METHOXYPHENYL)-1-PIPERAZINYL)BUTYROPHENONE,HYDROCHLORIDE * ANTI-PICA * HALOANISONE COMPOSITUM

THR: A poison by subcutaneous, intraperitoneal, and intravenous routes. When heated to decomposition it emits very toxic HCl, NO_x and F^-.

FLUOMINE DUST **HR: 3**
CAS: 62207-76-5 NIOSH: GG 0575000
mf: $C_{16}H_{12}CoF_2N_2O_2$ mw: 361.23

SYNS: N,N′-ETHYLENEBIS(3-FLUOROSALICYLIDENEIMINATO) COBALT (II) * N,N′-ETHYLENE BIS(3-FLUORO SALICYLIDENEIMINATO)COBALT (II)

THR: A poison by ingestion and inhalation. See also cobalt compounds. When heated to decomposition it emits very toxic fumes of F^- and NO_x.

FLUORACIZINE **HR: 3**
CAS: 30223-48-4 NIOSH: SO 4700000
mf: $C_{20}H_{21}F_3N_2OS$ mw: 394.49

SYN: 10-DIETHYLAMINOPROPIONYL-3-TRIFLUOROMETHYL PHENOTHIAZINE HYDROCHLORIDE

THR: An experimental teratogen. When heated to decomposition it emits very toxic SO_x, NO_x and F^-.

FLUORANTHENE **HR: 3**
CAS: 206-44-0 NIOSH: LL 4025000
mf: $C_{16}H_{10}$ mw: 202.26

PROP: A polycyclic hydrocarbon. Colorless solid, mp: 120°, bp: 367°, vap press: 0.01 mm @ 20°.

SYNS: BENZO(JK)FLUORENE * IDRYL * 1,2-(1,8-NAPHTHYLENE)BENZENE

THR: A poison by intravenous route. Moderately toxic by ingestion and skin contact. An experimental tumorigen. Mutagenic data. Combustible when exposed to heat or flame. When heated to decomposition it emits acrid smoke and fumes.

FLUOREN-2-AMINE **HR: 3**
CAS: 153-78-6 NIOSH: LL 5075000
mf: $C_{13}H_{11}N$ mw: 181.25

SYNS: AMINOFLUOREN (GERMAN) * 2-AMINOFLUORENE * 2-FLUORENAMINE * 2-FLUORENEAMINE

THR: An experimental carcinogen and neoplastigen. Mutagenic data. When heated to decomposition it emits toxic fumes of NO_x.

N-FLUOREN-2-YL ACETAMIDE **HR: 3**
CAS: 53-96-3 NIOSH: AB 9450000
mf: $C_{15}H_{13}NO$ mw: 223.29

SYNS: 2-ACETAMIDOFLUORENE * N-ACETYL-2-AMINOFLUORENE

THR: Mutagenic data. An experimental brain carcinogen, neoplastigen, and teratogen. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of NO_x. For further information see Vol. 5, No. 5 of *DPIM Report*.

N-FLUOREN-2-YL BENZO HYDROXAMIC ACID **HR: 3**
CAS: 3671-71-4 NIOSH: DG 0350000
mf: $C_{20}H_{15}NO_2$ mw: 301.36

SYN: N-HYDROXY-N-2-FLUORENYLBENZAMIDE

THR: An experimental carcinogen. When heated to decomposition it emits toxic fumes such as NO_x.

N-FLUOREN-2-YL-2,2,2-TRIFLUORO ACETAMIDE **HR: 3**
CAS: 363-17-7 NIOSH: AC 1050000
mf: $C_{15}H_{10}F_3NO$ mw: 277.26

SYNS: N-(2-FLUORENYL)-2,2,2-TRIFLUOROACETAMIDE * 2-TRIFLUOROACETYLAMINOFLUORENE * 2,2,2-TRIFLUORO-N-(FLUOREN-2-YL) ACETAMIDE

THR: An experimental carcinogen. See also fluorides. When heated to decomposition it emits very toxic F^- and NO_x.

N

NABAM **HR: 3**
CAS: 142-59-6 NIOSH: FA 6825000
mf: $C_4H_6N_2S_4 \cdot 2Na$ mw: 256.34

PROP: Crystals, sol in water.

SYNS: DI-NATRIUM-AETHYLENBISDITHIOCARBAMAT (GERMAN) * DINATRIUM-(N,N′-AETHYLEN-BIS(DITHIOCARBAMAT)) (GERMAN) * DINATRIUM-(N,N′-ETHYLEEN-BIS(DITHIOCARBAMAAT)) (DUTCH) * DISODIUM ETHYLENEBIS(DITHIOCARBAMATE) * N,N′-ETHYLENE BIS(DITHIOCARBAMATE DE SODIUM) (FRENCH) * ETHYLENEBIS(DITHIOCARBAMATE), DISODIUM SALT * ETHYLENEBIS(DITHIOCARBAMIC ACID) DISODIUM SALT * N,N′-ETILENBIS(DITIOCARBAMMATO) DI SODIO (ITALIAN) * DISODIUM ETHYLENE-1,2-BISDITHIOCARBAMATE * NABAME (FRENCH) * PARZATE

THR: Poison by ingestion. Moderately toxic by intraperitoneal route. See also carbamates. When heated to decomposition it emits very toxic fumes of Na_2O, NO_x and SO_x.

NAPHAZOLINE **HR: 3**
CAS: 835-31-4 NIOSH: NJ 4200000
mf: $C_{14}H_{14}N_2$ mw: 210.27

SYNS: ALPHA-NAPHTHYLMETHYL IMIDAZOLINE * 2-(ALPHA-NAPHTHYLMETHYL)-IMIDAZOLINE * 2-(1-NAPHTHYLMETHYL)-2-IMIDAZOLINE

THR: Poison by subcutaneous and intravenous routes. When heated to decomposition it emits toxic fumes of NO_x.

NAPHTHA, COAL TAR **HR: 2**
CAS: 8030-30-6 NIOSH: QI 9450000

PROP: Dark straw-colored to colorless liquid. Sol in benzene, toluene, xylene, etc.; bp: 149°-216°, flash p: 107°F (CC), d: 0.862-0.892, autoign temp: 531°F.

SYNS: BENZIN * 160 DEGREE BENZOL * COAL TAR NAPHTHA DISTILLATE * LIGHT LIGROIN * NAFTA (POLISH) * NAPHTHA * NAPHTHA, PETROLEUM * PETROLEUM BENZIN * PETROLEUM NAPHTHA

OSHA PEL: TWA 100 ppm

THR: Moderately toxic by inhalation. Can cause unconsciousness which may go to coma, stentorious breathing, and bluish tint to the skin. Recovery follows removal from exposure. In mild form, intoxication resembles drunkenness. On a chronic basis, no true poisoning; sometimes headache, lack of appetite, dizziness, sleeplessness, indigestion, and nausea. A common air contaminant. See also mineral oils. Flammable when exposed to heat or flame; can react with oxidizing materials. Keep containers tightly closed. Slight explosion hazard. To fight fire, use foam, CO_2, dry chemical.

NAPHTHALENE **HR: 3**
CAS: 91-20-3 NIOSH: QJ 0525000
DOT: 1334/2304
mf: $C_{10}H_8$ mw: 128.18

PROP: Aromatic odor, white, crystalline, volatile flakes; mp: 80.1°, bp: 217.9°, flash p: 174°F (OC), d: 1.162, lel = 0.9%, uel = 5.9%, vap press: 1 mm @ 52.6°, vap d: 4.42; autoign temp: 1053°F (567°C); sol in alc, benzene. Insol in water; very sol in ether, CCl_4, CS_2 hydronaphthalenes, in fixed and volatile oils.

SYNS: CAMPHOR TAR * MOTH BALLS * MOTH FLAKES * NAFTALEN (POLISH) * NAPHTHALINE * NAPHTHENE * NCI-C52904 * TAR CAMPHOR * WHITE TAR

OSHA PEL: TWA 10 ppm
ACGIH TLV: TWA 10 ppm; STEL 15 ppm
DFG MAK: 10 ppm (50 mg/m^3)
DOT Classification: ORM-A (IMO Flammable Solid); Label: None

THR: Poison by ingestion, intravenous, and intraperitoneal routes. An eye and skin irritant. Can cause nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions, and coma. Poisoning may occur by ingestion of large doses, inhalation, or skin absorption. Flammable when exposed to heat or flame; reacts with oxidizing materials. Reacts violently with CrO_3. Moderate explosion hazard in the form of dust, when exposed to heat or flame. To fight fire, use water, CO_2, dry chemical. Incompatible with dinitrogen pentaoxide. For further information see Vol. 5, No. 4 of *DPIM Report*.

POLYCAPROLACTAM HR: 3

CAS: 25038-54-4 NIOSH: TQ 9800000

mf: $(C_6H_{11}NO)_n$

SYNS: POLY(EPSILON-AMINOCAPROIC ACID) * POLYCAPROAMIDE * POLY(EPSILON-CAPROAMIDE) * POLY(IMINOCARBONYLPENTAMETHYLENE) * POLY(EPSILON-CAPROLACTAM) * POLY(IMINO(1-OXO-1,6-HEXANEDIYL)) * 6-AMINOHEXANOIC ACID HOMOPOLYMER * HEXAHYDRO-2H-AZEPIN-2-ONE HOMOPOLYMER * CAPROLACTAM OLIGOMER * CAPROLACTAM POLYMER * EPSILON-CAPROLACTAM POLYMER * EPSILON-CAPROLACTAM POLY-MERE (GERMAN) * NYLON-6

THR: An experimental neoplastigen and carcinogen. Slightly toxic by inhalation. When heated to decomposition it emits toxic fumes of NO_x.

POLYCHLORINATED BIPHENYLS HR: 3

CAS: 1336-36-3 NIOSH: TQ 1350000

PROP: Bp: 340°-375°, flash p: 383°F (COC), d: 1.44 @ 30°. For toxicity information, see individual mixtures below. A series of technical mixtures consisting of many isomers and compounds that vary from mobile oily liquids to white crystalline solids and hard noncrystalline resins. Technical products vary in composition, in the degree of chlorination and possibly according to batch.

SYNS: AROCLOR * CHLOPHEN * CHLORINATED BIPHENYL * CHLORINATED DIPHENYL * CHLORINATED DIPHENYLENE * CHLOREXTOL * CHLORO BIPHENYL * CHLORO-1,1-BIPHENYL * CLOPHEN * KANECHLOR S * NOFLAMOL * PCBS * PHENOCHLOR * POLYCHLORINATED BIPHENYL * POLYCHLOROBIPHENYL * PYRALENE * PYRANOL * SANTOTHERM * THERMINOL FR-1

THR: Poison by ingestion, inhalation, and skin contact. A suspected human carcinogen. Like the chlorinated naphthalenes, the chlorinated diphenyls have two distinct actions on the body, namely, a skin effect and a toxic action on the liver. This hepato toxic action of the chlorinated diphenyls appears to be increased if there is exposure to carbon tetrachloride at the same time. The higher the chlorine content of the diphenyl compound, the more toxic is it liable to be. Oxides of chlorinated diphenyls are more toxic than the unoxidized materials. In persons who have suffered systemic intoxication, the usual signs and symptoms are nausea, vomiting, loss of weight, jaundice, edema and abdominal pain. Where the liver damage has been severe the patient may pass into coma and die. Combustible when exposed to heat or flame. When heated to decomposition they emit highly toxic fumes. For further information see PCB's, Vol. 3, No. 4 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1221) HR: 3

CAS: 11104-28-2 NIOSH: TQ 1352000

SYNS: AROCHLOR 1221 * CHLORODIPHENYL (21% Cl)

THR: Suspected human carcinogen. Moderately toxic by ingestion and skin contact. When heated to decomposition it emits toxic fumes of Cl^-.

POLYCHLORINATED BIPHENYL (AROCLOR 1232) HR: 3

CAS: 11141-16-5 NIOSH: TQ 1354000

SYNS: AROCLOR 1232 * CHLORODIPHENYL (32% Cl)

THR: Suspected human carcinogen. Moderately toxic by skin contact. When heated to decomposition it emits toxic fumes of Cl^-.

POLYCHLORINATED BIPHENYL (AROCLOR 1242) HR: 3

CAS: 53469-21-9 NIOSH: TQ 1356000

SYNS: AROCHLOR 1242 * AROCLOR 1242 * CHLORIERTE BIPHENYLE, CHLORGEHALT 42% (GERMAN) * CHLORODIPHENYL (42% Cl) * CLORODIFENILI, CLORO 42% (ITALIAN) * DIPHENYLE CHLORE, 42% DE CHLORE (FRENCH) * GECHLOREERDEDIFENYL (DUTCH)

OSHA PEL: TWA 1 mg/m^3 (skin)

THR: Poison by subcutaneous route. Suspected human carcinogen. Human systemic irritant effects by inhalation. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1248) HR: 3

CAS: 12672-29-6 NIOSH: TQ 1358000

SYNS: AROCLOR 1248 * CHLORODIPHENYL (48% cl)

THR: An experimental teratogen. A suspected human carcinogen. Moderately toxic by skin contact. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

HR: 3

CAS: 11097-69-1 NIOSH: TQ 1360000

PROP: Composed of 11% tetra-, 49% penta-, 34% hexa- and 6% heptachlorobiphenyls.

SYNS: AROCHLOR 1254 * AROCLOR 1254 * CHLORIERTE BIPHENYLE, CHLORGEHALT 54% (GERMAN) * CHLORODIPHENYL (54% cl) * CLORODIFENILI, CLORO 54% (ITALIAN) * DIPHENYLE CHLORE, 54% DE CHLORE (FRENCH) * NCI-c02664

OSHA PEL: TWA 500 ug/m^3 (skin)

THR: Poison by intravenous route. An experimental neoplastigen and carcinogen. Moderateiy toxic by ingestion and intraperitoneal route. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1260)

HR: 3

CAS: 11096-82-5 NIOSH: TQ 1362000

PROP: Composed of 12% penta-, 38% hexa-, 41% hepta-, 8% octa- and 1% nonachlorobiphenyls.

SYNS: AROCHLOR 1260 * AROCLOR 1260 * CLOPHEN A60 * CHLORODIPHENYL (60% Cl) * PHENOCLOR DP6

THR: A suspected human carcinogen. An experimental carcinogen. Moderately toxic by ingestion and skin contact. When heated to decomposition it emits highly toxic Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1262)

HR: 3

CAS: 37324-23-5 NIOSH: TQ 1364000

SYNS: AROCLOR 1262 * CHLORODIPHENYL (62% Cl)

THR: A suspected human carcinogen. Moderately toxic by skin contact. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (AROCLOR 1268)

HR: 3

CAS: 11100-14-4 NIOSH: TQ 1366000

SYNS: AROCLOR 1268 * CHLORODIPHENYL (68% Cl)

THR: A suspected human carcinogen. Moderately toxic by skin contact. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (KANECHLOR 300)

HR: 3

CAS: 37353-63-2 NIOSH: TQ 1372000

PROP: Average content: 60% trichlorobiphenyl, 23% tetrachlorobiphenyl, 17% dichlorobiphenyl, 1% pentachlorobiphenyl.

SYN: KANECHLOR 300

THR: A suspected human carcinogen. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (KANECHLOR 400)

HR: 3

CAS: 12737-87-0 NIOSH: TQ 1374000

PROP: Average content: 44% tetrachlorbiphenyl, 33% trichlorobiphenyl, 16% pentachlorobiphenyl, 5% hexachlorobiphenyl, 3% dichlorobiphenyl.

SYN: KANECHLOR 400

THR: A suspected human carcinogen. Human skin systemic effects by ingestion. An experimental neoplastigen. When heated to decomposition it emits toxic fumes of Cl^-. For further information see Chlorinated Diphenyls, Vol. 1, No. 3 of *DPIM Report*.

POLYCHLORINATED BIPHENYL (KANECHLOR 500)

HR: 3

CAS: 37317-41-2 NIOSH: TQ 1376000

PURAPURIDINE **HR: 3**
CAS: 126-17-0 NIOSH: WF 1300000
mf: $C_{27}H_{43}NO_2$ mw: 413.71

SYNS: SOLASOD-5-EN-3-BETA-OL * SOLANCARPIDINE

THR: Poison by intraperitoneal route. Moderately toxic by ingestion. An experimental teratogen. When heated to decomposition it emits toxic fumes of NO_x.

PURINE-6-THIOL **HR: 3**
CAS: 50-44-2 NIOSH: UO 9800000
mf: $C_5H_4N_4S$ mw: 152.19

SYNS: LEUKERAN * 6-MERCAPTOPURINE * 7-MERCAPTO-1,3,4,6-TETRAZAINDENE * NCI-C04886 * NSC 755 * 6-PURINETHIOL

THR: Poison by ingestion, intraperitoneal, subcutaneous, parenteral, intravenous, and other unspecified routes. Mutagenic data. An experimental teratogen and tumorigen. Human toxicity of an unspecified source. When heated to decomposition it emits very toxic fumes of SO_x and NO_x.

PYRAZINECARBOXAMIDE **HR: 3**
CAS: 98-96-4 NIOSH: UQ 2275000
mf: $C_5H_5N_3O$ mw: 123.13

SYNS: 2-CARBAMYL PYRAZINE * NCI-C01785 * PYRAZINAMIDE * PYRAZINEAMIDE * PYRAZINE CARBOXYLAMIDE * PYRAZINOIC ACID AMIDE

THR: A carcinogen and an experimental tumorigen. Mutagenic data. Moderately toxic by intraperitoneal route. When heated to decomposition it emits toxic fumes of NO_x.

PYRENE **HR: 3**
CAS: 129-00-0 NIOSH: UR 2450000
mf: $C_{16}H_{10}$ mw: 202.26

PROP: Colorless solid, solutions have a slight blue color, insol in water, fairly sol in organic solvents. (a condensed ring hydrocarbon), mp: 156°, d: 1.271 @ 23°, bp: 404°.

SYNS: BENZO(DEF)PHENANTHRENE * PYREN (GERMAN)

THR: An experimental carcinogen. Mutagenic data. A skin irritant. When heated to decomposition it emits acrid smoke and fumes.

PYRETHRIN I **HR: 3**
CAS: 8003-34-7 NIOSH: UR 4200000
mf: $C_{21}H_{28}O_3$ mw: 328.4

PROP: Viscous liquid; bp: 170° @ 0.1 mm (decomp).

SYNS: CINERIN I OR II * JASMOLIN I OR II * PYRETHRIN I OR II * CHRYSANTHEMUM CINERAREAEFOLIUM * DALMATION INSECT FLOWERS * INSECT POWDER * PYRETHRUM (INSECTICIDE) * TRIESTE FLOWERS

OSHA PEL: TWA 5 mg/m^3
ACGIH TLV: TWA 5 mg/m^3
DFG MAK: 5 mg/m^3

THR: Poison by ingestion. An allergen. A highly insecticidal extract with low mammalian toxicity. It is rapidly detoxified in the gastrointestinal tract, but can cause gastrointestinal, respiratory, and central nervous system effects. A dose of 15 g has caused the death of a child. Chronic exposures can cause liver damage. See esters. Combustible when exposed to heat or flame. When heated to decomposition it emits acrid smoke and fumes.

PYRETHRIN II **HR: 2**
CAS: 121-29-9 NIOSH: GZ 0700000
mf: $C_{22}H_{28}O_5$ mw: 372.50

PROP: Viscous liquid; bp: 200° @ 0.1 mm (decomp).

SYNS: ENT 7,543 * PYRETHROLONE CHRYSANTHEMUM DICARBOXLIC ACIDMETHYL ESTER ESTER * PYRETHROLONE ESTER OF CHRYSANTHEMUMDICARBOXYLIC ACID MONOMETHYL ESTER * PYRETRIN II

THR: Moderately toxic by ingestion and possibly other routes. See also pyrethrin I. An allergen. When heated to decomposition it emits acrid smoke and fumes.

PYRIDAPHENTHION **HR: 3**
CAS: 119-12-0 NIOSH: TF 2275000
mf: $C_{14}H_{17}N_2O_4PS$ mw: 340.36

SYNS: O,O-DIETHYL O-(2,3-DIHYDRO-3-OXO-2-PHENYL-6-PYRIDAZINYL)PHOSPHOROTHIOATE * O,O-DIETHYLPHOSPHOROTHIOATE, O-ESTER WITH 6-HYDROXY-2-PHENYL-3(2H)-PYRIDAZINONE * O-(1,6)-DIHYDRO-6-OXO-1-PHENYLPYRIDAZIN-3-LY), O,O-DIETHYL PHOSPHOROTHIOATE * ENT 23,968

THR: Poison by intraperitoneal route. Moderately toxic by ingestion and skin contact. When heated to decomposition it emits very toxic fumes of SO_x, PO_x, and NO_x.

DOT Classification: Label: Corrosive

THR: A poison by subcutaneous route; an irritant to skin, eyes and mucous membranes and by inhalation. See also fluorides. Dangerous; when heated to decomposition it emits highly toxic and corrosive fumes of fluorides; will react with water or steam to produce toxic and corrosive fumes. When heated to decomposition it emits toxic fumes of F^-.

SILICON

CAS: 7440-21-3 NIOSH: WM 0400000
DOT: 1346
mf: Si mw: 28.09

PROP: Cubic, steel-gray crystals or dark brown powder. Mp: 1420°, bp: 2600°, d: 2.42 or 2.3 @ 20°, vap press: 1 mm @ 1724°. Almost insol in water; sol in molten alkali oxides.
DOT Classification: Flammable Solid

THR: Does not occur free in nature, but is found as silicon dioxide (silica), and as various silicates. See also silica and silicates. Flammable when exposed to flame or by chemical reaction with oxidizers. See also powdered metals. Violent reactions with alkali carbonates; oxidants; (Al + PbO); Ca; Cs_2C_2; Cl_2; CoF_2; F_2; IF_5; MnF_3; Rb_2C_2; FNO; AgF; NaK alloy. Dangerous; when heated, will react with water or steam to produce H_2; can react with oxidizing materials.

SILICON CARBIDE

HR: 1
CAS: 409-21-2 NIOSH: VW 0450000
mf: CSi mw: 40.10

PROP: Bluish-black, iridescent crystals. Mp: 2600°; bp: subl > 2000°; decomp @ 2210°; d: 3.17.

SYNS: CARBON SILICIDE * CARBORUNDUM * SILICON MONOCARBIDE

THR: A mild irritant by inhalation..

SILICON CHLORIDE

HR: 2
CAS: 10026-04-7 NIOSH: VW 0525000
DOT: 1818
mf: Cl_4Si mw: 169.89

PROP: Colorless, clear, mobile fuming liquid; suffocating odor. D: 1.52 @ 0°/4°; mp: −70°; bp: 59°. Misc with benzene, ether, chloroform, petroleum ether.

SYNS: CHLORID KREMICITY (CZECH) * SILICIO(TETRACLORURO DI) * SILICIUMTETRACHLORID (GERMAN) * SILICIUMTETRACHLORIDE (DUTCH) * SILICIUM(TETRACHLORURE DE) (FRENCH) * SILICON TETRACHLORIDE * TETRACHLOROSILANE * TETRACHLORURE DE SILICIUM (FRENCH)

DOT Classification: Label: Corrosive

THR: Moderately toxic by inhalation. Severe eye and skin irritant. Decomposed by water with much heat into silicic acid and HCl. Dangerous; when heated to decomposition it emits highly toxic fumes of HCl; will react with water or steam to produce heat and toxic and corrosive fumes. Incompatible with dimethyl sulfoxide; K; Na.

SILICONES

SYN: SILOXANES **HR: 1**

THR: Generally slight toxicity. Most of the silicones that have been studied should have low toxicity or none at all and little or no irritating effects. May be spontaneously flammable in air. There can be toxicity due to contamination of silicones by components of manufacture.

SILICON FLUORIDE

HR: 3
CAS: 7783-61-1 NIOSH: VW 2327000
DOT: 1859
mf: F_4Si mw: 104.09

PROP: Colorless gas, very pungent odor; mp: −77°; bp: −65° @ 181 mm; d: 4.67.
DOT Classification: Label: Nonflammable Gas

THR: No toxicity data. See also fluorides and hydrofluoric acid. Very irritating to skin, eyes, and mucous membranes. When heated to decomposition it emits toxic fumes of F^-.

SILK

HR: 3
NIOSH: VW 2700000

THR: An experimental carcinogen. In the form of dust it is an allergen and a nuisance dust. Flammable and a moderate explosion hazard. When heated to decomposition it emits acrid smoke and fumes.

SILVER

CAS: 7440-22-4 **HR: 3**
af: Ag aw: 107.87 NIOSH: VW 3500000

PROP: Soft, ductile, malleable, lustrous, white metal. Mp: 961.93°, bp: 2212°, d: 10.50 @ 20°.

SYNS: ARGENTUM * C.I. 77820 * SHELL SILVER * SILBER (GERMAN) * SILVER ATOM

OSHA PEL: TWA 10 ug/m^3
ACGIH TLV: TWA (metal) 0.1 mg/m^3, (soluble compounds as Ag) 0.01 mg/m^3
DFG MAK: 0.01 mg/m^3

THR: An experimental tumorigen. Human systemic skin effects. See also silver compounds. Flammable in the form of dust, when exposed to flame or by chemical reaction with C_2H_2; NH_3; bromoazide; ClF_3; ethylene imine; H_2O_2; oxalic acid; H_2SO_4; tartaric acid. See also powdered metals. For further information see Vol. 1, No. 1 of *DPIM Report*.

SILVER, COLLOIDAL HR: 3

CAS: 7440-22-4 NIOSH: VW 3675000
af: Ag aw: 107.87

SYNS: ARGENTIUM CREDE * COLLARGOL

OSHA PEL: TWA 10 ug/m^3

THR: Poison by ingestion and intravenous route. See also silver and silver compounds.

SILVER COMPOUNDS

The absorption of silver compounds into the circulation and the subsequent deposition of the reduced silver in various tissues of the body may result in the production of a generalized greyish pigmentation of the skin and mucous membranes; a condition known as argyria. The introduction of fine particles of silver through breaks in the skin produces a local pigmentation at the site of the injury. 1 mg/m^3 of silver dust causes skin effects. The condition develops slowly, usually after 2-25 years of exposure. Pigmentation is noticeable first in conjunctivae, and later in the mucous membranes of the mouth and gums and in the skin. There are no constitutional symptoms or physical disability. Persons exhibiting the condition, and who subsequently died from unrelated disease, showed, on autopsy, a deposition of silver in the blood vessel walls, kidneys, testes, pituitary, choroid plexus, and mucous membranes of the nose, maxillary antra, trachea and bronchi. Once deposited, there is no known method by which the silver can be eliminated; the pigmentation is permanent. These compounds may be irritating to the skin and mucous membranes. See also silver. For further information see Vol. 1, No. 1 of *DPIM Report*.

SILVER CYANIDE HR: 3

CAS: 506-64-9 NIOSH: VW 3850000
DOT: 1684
mf: CAgN mw: 133.89

PROP: White, odorless, tasteless powder which darkens upon exposure to light; mp: 320° (decomp); d: 3.95.

SYNS: CYANURE D'ARGENT (FRENCH) * KYANID STRIBRNY (CZECH)

DOT Classification: Poison B, Label: Poison

THR: A deadly poison by ingestion. A skin and eye irritant. See also silver compounds and cyanides. When heated to decomposition it emits very toxic fumes of CN^- and NO_x. Incompatible with phosphorus tricyanide, fluorine.

SILVER (II) FLUORIDE HR: 3

CAS: 7783-95-1 NIOSH: VW 4200000
mf: AgF_2 mw: 145.87

PROP: White when pure; usually a grey-black or brownish solid. D: 4.7; mp: 690°.

SYNS: ARGENT FLUORURE (FRENCH) * ARGENTIC FLUORIDE * SILVER DIFLUORIDE

THR: Poison by subcutaneous route. See also fluorides and silver compounds. Powerful oxidizing agent. When heated to decomposition it emits toxic fumes of F^-.

SILVER (I) NITRATE (1:1) HR: 3

CAS: 7761-88-8 NIOSH: VW 4725000
DOT: 1493
mf: $NO_3 \cdot Ag$ mw: 169.88

PROP: mp: 212°; bp: 444° (decomp); d: 4.352 @ 19°. Very sol in ammonia water; slightly sol in ether.

SYNS: LUNAR CAUSTIC * NITRATE D'ARGENT (FRENCH) * NITRIC ACID, SILVER(1+) SALT * SILBERNITRAT

OSHA PEL: TWA 10 ug(Ag)/m^3
DOT Classification: Label: Oxidizer

THR: Poison by ingestion, intravenous, subcutaneous, intraperitoneal, and other unknown routes. Mutagenic data. An experimental carcinogen. See also silver compounds and nitrates.

SYNS:
3-ACETOXYQUINUCLIDINE GLAUCOSTAT
3-QUINUCLIDINOL ACETATE

TOXICITY DATA: 3
scu-rat LD50:225 mg/kg
ivn-rat LD50:45 mg/kg
orl-mus LD50:165 mg/kg
scu-mus LD50:102 mg/kg
ivn-mus LD50:36 mg/kg

CODEN:
ARZNAD 18,320,68
ARZNAD 18,320,68
ARZNAD 18,320,68
ARZNAD 18,320,68
RPTOAN 35(2),55,72

THR: HIGH scu, ivn, orl.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

ACEFEN

CAS RN: 3685845 NIOSH #: AG 0440000
mf: $C_{12}H_{16}C1NO_3 \cdot C1H$; mw: 294.20

SYNS:
CENTROPHENOXINE HYDROCHLORIDE
DIMETHYLAMINOETHYL ESTER OF P-CHLOROPHENOXYACETIC ACID HYDROCHLORIDE
LUCIDRYL HYDROCHLORIDE
MECLOFENOXATE HYDROCHLORIDE

TOXICITY DATA: 3-2
orl-mus LD50:1750 mg/kg
ipr-mus LD50:845 mg/kg
ivn-mus LD50:350 mg/kg
ivn-rbt LDLo:150 mg/kg

CODEN:
CRSBAW 153,1914,59
CRSBAW 153,1914,59
CRSBAW 153,1914,59
CRSBAW 153,1914,59

THR: HIGH ivn. MOD orl, ipr.
Disaster Hazard: When heated to decomp it emits very toxic fumes of Cl^-, NO_x and HCl.

ACENAPHTHALENE

NIOSH #: AB 1255500
mf: $C_{10}H_6(CH_2)_2$; mw: 154.2

White, elongated crystals. mp: 95°, bp: 277.5°; d: 1.024 @ 99°/4°; vap. press.: 10 mm @ 131.2°; vap. d: 5.32. Insol in water, sl sol in hot alc, ether and chloroform.

SYN: 1,8-ETHYLENE NAPHTHALENE.

TOXICITY DATA:
mma-sat 490 umol/L/2H

CODEN:
CNREA8 39,4152,79

THR: MUT data. A skn and mu mem irr. May cause acute vomiting if swallowed in large quantities.
Fire Hazard: Slight.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

ACENAPHTHANTHRACENE

CAS RN: 5779793 NIOSH #: CU 1575000
mf: $C_{20}H_{14}$; mw: 254.34

SYNS:
BENZ(K)ACEPHENANTHRENE
4,5-DIHYDROBENZ(K)ACEPHENANTHRYLENE
3:4-DIMETHYLENE-1:2-BENZANTHRACENE

TOXICITY DATA: 3
skn-mus TDLo:960 mg/kg/40W-I:ETA

CODEN:
PRLBA4 129,439,40

THR: An exp ETA.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

5-ACENAPHTHENAMINE

CAS RN: 4657936 NIOSH #: AB 0900000
mf: $C_{12}H_{11}N$; mw: 169.24

Sol. in ethanol; colorless needles, mp: 108°.

SYNS:
5-AMINOACENAPHTHENE
1,2-DIHYDRO-5-ACENAPHTHYLENAMINE

TOXICITY DATA: 3
ivn-mus LD50:56 mg/kg

CODEN:
CSLNX* NX#01911

Carcinogenic Determination: Indefinite IARC** 16, 243,78
THR: HIGH ivn. An exper ± CARC.
Disaster Hazard: When heated to decomp it emits toxic fumes of NO_x.

ACENAPHTHYLENE

CAS RN: 208968 NIOSH #: AB 1254000
mf: $C_{12}H_8$; mw: 152.20

SYN: CYCLOPENTA(DE)NAPHTHALENE

TOXICITY DATA:
mma-sat 1 mmol/L/2H

CODEN:
CNREA8 39,4152,79

Reported in EPA TSCA Inventory, 1980.
THR: MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

ACEPROMAZINE MALEATE

CAS RN: 3598376 NIOSH #: OB 2450000
mf: $C_{19}H_{22}N_2OS \cdot C_4H_4O_4$; mw: 442.57

SYNS:
ACETYLPROMAZINE MALEATE (1:1)
MALEATE ACIDE DE L'ACETYL-3-DIMETHYLAMINO-3-PROPYL-10-PHENOTHIAZINE (FRENCH)

TOXICITY DATA: 3
orl-mus LDLo:270 mg/kg
scu-mus LD50:175 mg/kg
ivn-mus LD50:65 mg/kg

CODEN:
AIPTAK 113,53,57
AIPTAK 113,53,57
APTOA6 19,87,62

THR: HIGH tox in mice via oral, scu and ivn routes.
Disaster Hazard: When heated to decomp it emits highly tox fumes of NO_x and SO_x.

ACETAL

CAS RN: 105577 NIOSH #: AB 2800000
mf: $C_6H_{14}O_2$; mw: 118.20

Colorless, volatile liquid, agreeable odor, nutty after-taste. bp: 102.7°, flash p: −5°F (CC), lel = 1.65%, uel = 10.4%, d: 0.831; autoign. temp.: 446°F, vap. press: 10 mm @ 8.0°, vap. d: 4.08, mp: −100°. Sl sol in water, misc in alc and ether.

A mixture of 2 isomers, brown crystals, nearly insol in water, sol in most organic solvents. mp(α): 106°, mp(β): 212°, d: 1.745 @ 20°/20°.

SYNS:
ENT 23,979
ALPHA,BETA-1,2,3,4,7,7-HEXACHLOROBICYCLO(2.2.1)-2-HEPTENE-5,6-BISOXY-METHYLENE SULFITE
1,2,3,4,7,7-HEXACHLORO-BICYCLO(2.2.1)HEPTEN-5,6-BIOXYMETHYLENESUL-FITE
HEXACHLOROHEXAHYDRO-METHANO
2,4,3-BENZODIOXATHIEPIN-3-OXIDE
6,7,8,9,10,10-HEXACHLORO-1,5,5a,6,9,9a-HEXAHYDRO-6,9-METHANO-2,4 ,3-BENZODIOXA-THIEPIN-3-OXIDE
1,4,5,6,7,7-HEXACHLORO-5-NOR-BORNENE-2,3-DIMETHANOL CYCLIC SULFITE
NCI-C00566

TOXICITY DATA: 3	CODEN:
orl-rat TDLo:45 mg/kg/(6-14D preg):TER	RPTOAN 42,150,78
orl-mus TDLo:330 mg/kg/78W-I:NEO	NTIS** PB223-159
scu-mus TDLo:2 mg/kg:ETA	NTIS** PB223-159
orl-rat LD50:18 mg/kg	ARSIM* 20,9,66
skn-rat LD50:74 mg/kg	WRPCA2 9,119,70
ipr-rat LD50:22 mg/kg	BECTA6 15,708,76
unk-rat LD50:40 mg/kg	30ZDA9 -,267,71
orl-mus LD50:75 mg/kg	GTPZAB 8(4),30,64
ipr-mus LD50:7 mg/kg	BECTA6 15,708,76
orl-cat LD50:2 mg/kg	85DPAN -,-,71/76
skn-rbt LD50:167 mg/kg	BECTA6 14,513,75
orl-ham LD50:118 mg/kg	JETOAS 7,159,74
orl-dck LD50:34 mg/kg	TXAPA9 22,556,72
orl-bwd LD50:35 mg/kg	TXAPA9 21,315,72

Aquatic Toxicity Rating: TLm96:under 1 ppm WQCHM* 3,-,74. *TLV:* Air: 0.1 mg/m3 (skin) DTLVS* 4,165,80. *Toxicology Review:* DTTIAF 80(20),485,73; RREVAH 56,107,75; 27ZTAP 3,142,69. NCI Carcinogenesis Bioassay Completed; Results Negative (NCITR* NCI-CG-TR-62,77).
THR: An exper TER, NEO, ETA. VERY, VERY HIGH orl. VERY HIGH via dermal routes. A CNS stimulant producing convulsions. A highly toxic organochlorine pesticide which does not accumulate significantly in human tissue. Absorption is normally slow but is increased by alcohols, oil, emulsifiers.
Disaster Hazard: Dangerous; see chlorides and S compounds.

BENZO(j)FLUORANTHENE

CAS RN: 205823 NIOSH #: DF 6300000
mf: $C_{20}H_{12}$; mw: 252.32

SYNS:
10,11-BENZFLUORANTHENE
7,8-BENZOFLUORANTHENE
DIBENZO(A,J,K)FLUORENE

TOXICITY DATA: 3	CODEN:
skn-mus TDLo:312 mg/kg/26W-I:ETA	CANCAR 12,1194,59

Carcinogenic Determination: Animal positive IARC** 3,92,73.
Toxicology Review: 85DHAX Pc,4,72. "NIOSH Manual of Analytical Methods" VOL 1 183.
THR: An exper ETA. An exper CARC.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZO(k)FLUORANTHENE

CAS RN: 207089 NIOSH #: DF 6350000
mf: $C_{20}H_{12}$; mw: 252.32

SYN: 11,12-BENZO(K)FLUORANTHENE

TOXICITY DATA: 3	CODEN:
skn-mus TDLo:2820 mg/kg/47W-I:ETA	CANCAR 12,1194,59
scu-mus TDLo:72 mg/kg/9W-I:ETA	AICCA6 19,490,63

"NIOSH Manual of Analytical Methods" VOL 1 183,184.
THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZO(b)FLUORENE

CAS RN: 30777196 NIOSH #: DF 6383000
mf: $C_{17}H_{12}$; mw: 216.29

TOXICITY DATA:	CODEN:
mma-sat 25 umol/L/2H	CNREA8 39,4152,79

THR: MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZOFURAN

CAS RN: 271896 NIOSH #: DF 6423800
mf: C_8H_6O; mw: 118.14

SYNS:
BENZO(B)FURAN
2,3-BENZOFURAN
BENZOFURFURAN
NCI-C56166
1-OXINDENE

Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. Reported in EPA TSCA Inventory, 1980.
THR: No data.
Disaster Hazard: When heated to decomp it emits acrid and irr smoke and fumes.

2-BENZOFURANCARBOXYLIC ACID

CAS RN: 496413 NIOSH #: DF 6490000
mf: $C_9H_6O_3$; mw: 162.15

SYN: COUMARILIC ACID

TOXICITY DATA: 3	CODEN:
ivn-mus LD50:320 mg/kg	CSLNX* NX#02495

Reported in EPA TSCA Inventory, 1980.
THR: HIGH ivn.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

2-BENZO-FURANCETONITRILE

CAS RN: 6149699 NIOSH #: DF 6550000

SYN: PYRIDO(3',2':5,6)CHRYSENE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA COREAF 252,1711,61

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits tox fumes such as NO_x.

BENZONITRILE

CAS RN: 100470 NIOSH #: DI 2450000
mf: C_7H_5N; mw: 103.13

Transparent, colorless oil, almond-like odor. d: 1.246 @ 20°/4°, bp: 191°, d: 1.0102 @ 15°/15°F (OC), mp: −12.8°.

SYNS:
BENZOIC ACID NITRILE PHENYL CYANIDE
CYANOBENZENE

TOXICITY DATA: 2-1 CODEN:
skn-rbt 500 mg/24H MOD FCTXAV 17(Suppl.),695,79
orl-rat LDLo:720 mg/kg AMRL** TR-74-78,74
ihl-rat LCLo:950 ppm/8H AMRL** TR-74-78,74
skn-rat LD50:1200 mg/kg AMRL** TR-74-78,74
orl-mus LD50:1400 mg/kg AZMZA6 52(11),60,75
ihl-mus LC50:6000 mg/m3 AZMZA6 52(11),60,75
scu-mus LDLo:180 mg/kg AIPTAK 12,447,04
scu-rbt LDLo:200 mg/kg AIPTAK 5,161,1899
scu-frg LDLo:1700 mg/kg AIPTAK 5,161,1899
ipr-mus LD50:400 mg/kg FCTXAV 17(Suppl.),695,79
orl-cat LD50:800 mg/kg FCTXAV 17(Suppl.),695,79
orl-rbt LD50:800 mg/kg FCTXAV 17(Suppl.),695,79
ipr-rbt LD50:1250 mg/kg FCTXAV 17(Suppl.),695,79
scu-pgn LDLo:500 mg/kg FCTXAV 17(Suppl.),695,79

Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: MOD oral, inhal and skin. LOW inhal. See also nitriles. A skn irr.
Disaster Hazard: When heated to decomp it emits tox fumes such as CN^- and NO_x.
For further information see Vol. 1, No. 8 and Vol. 3, No. 4 of *DPIM Report.*

BENZO(rst)PENTAPHENE

CAS RN: 189559 NIOSH #: DI 5775000
mf: $C_{24}H_{14}$; mw: 302.38

Green-yellow needles. mp: 280°-282°.

SYNS:
DIBENZO(A,I)PYRENE 3,4:9,10-DIBENZOPYRENE
1,2,7,8-DIBENZOPYRENE

TOXICITY DATA: 3 CODEN:
otr-ham:kdy 80 ug/L BJCAAJ 37,873,78
skn-mus TDLo:47 mg/kg/39W-I:ETA CANCAR 12,1079,59
scu-mus TDLo:1000 ug/kg:ETA PEXTAR 11,384,69
scu-ham TDLo:2 mg/kg:NEO NATUAS 203,308,64
itr-ham TDLo:33 gm/kg/8W-I:ETA ZKKOBW 82,175,74
scu-mus TD:72 mg/kg/9W-I:ETA COREAF 246,1477,58
skn-mus TD:141 mg/kg/47W-I:ETA IJMRAQ 53,638,65
scu-ham TD:16 mg/kg:ETA PEXTAR 11,384,69
scu-mus TD:80 mg/kg:ETA IJMRAQ 53,638,65
scu-mus TD:4 mg/kg:ETA PAACA3 13,37,72

Carcinogenic Determination: Animal Positive IARC** 3,215,73. *Toxicology Review:* 85DHAX Pc,4,72.
THR: An exper ETA, NEO. MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZO(rst)PENTAPHENE-5-CARBOXALDEHYDE

CAS RN: 63040539 NIOSH #: DI 5950000
mf: $C_{25}H_{14}O$; mw: 330.39

SYN: 5-FORMYL-3,4:9,10-DIBENZOPYRENE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA COREAF 252,1236,61

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZO(ghi)PERYLENE

CAS RN: 191242 NIOSH #: DI 6200500
mf: $C_{22}H_{12}$; mw: 276.34

SYN: 1,12-BENZOPERYLENE

TOXICITY DATA: CODEN:
mma-sat 2 ug/plate/48H FCTXAV 17,141,79

"NIOSH Manual of Analytical Methods" VOL 1 183.
THR: MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZO(a)PHENALENO(1,9-hi)ACRIDINE

CAS RN: 190078 NIOSH #: DI 6300000
mf: $C_{27}H_{15}N$; mw: 353.43

SYN: BENZO(c)PHENALENO(1,9-i,J)ACRIDINE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA BAFEAG 52,49,65

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits tox fumes such as NO_x.

BENZO(a)PHENALENO(1,9-i,j)ACRIDINE

CAS RN: 190034 NIOSH #: DI 6825000
mf: $C_{27}H_{15}N$; mw: 353.43

SYN: BENZO(H)PHENALENO(1,9-BC)ACRIDINE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA BAFEAG 52,49,65

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

BENZO(c)PHENANTHRENE

CAS RN: 195197 NIOSH #: DI 8225000
mf: $C_{18}H_{12}$; mw: 228.30

SYNS:
3,4-BENZOPHENANTHRENE 3,4-BENZPHENANTHRENE

INDENE TRIPROPYLAMINE

NIOSH #: NK 8925000

TOXICITY DATA: 2
eye-rbt 100 mg SEV
orl-rat LD50:540 mg/kg

CODEN:
IHFCAY 6,1,67
IHFCAY 6,6,67

THR: MOD orl. An eye irr.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

INDENO(1,2,3-cd)PYRENE

CAS RN: 193395 NIOSH #: NK 9300000
mf: $C_{22}H_{12}$; mw: 276.34

SYNS:
2,3-PHENYLENEPYRENE
2,3-O-PHENYLENEPYRENE

TOXICITY DATA: 3
mma-sat 3 ug/plate/48H
scu-mus TDLo:72 mg/kg/9W-I:CAR

CODEN:
FCTXAV 17,141,79
AICCA6 19,490,63

Carcinogenic Determination: Animal Positive IARC** 3,229,73. *Toxicology Review:* 85DHAX Pc,4,72. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: An exper CARC. MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

1-(7-INDENYLOXY)-3-ISOPROPYLAMINOPROPAN-2-OL HYDROCHLORIDE, (±)-

CAS RN: 36576144 NIOSH #: UB 6650000
mf: $C_{15}H_{21}NO_2 \cdot ClH$; mw: 283.83

SYN: DL-YB2

TOXICITY DATA: 3
orl-mus LD50:232 mg/kg
ivn-mus LD50:26 mg/kg

CODEN:
AIPTAK 202,79,73
ARZNAD 27,1022,77

THR: HIGH orl, ivn.
Disaster Hazard: When heated to decomp it emits very tox fumes of NO_x and HCl.

INDERAL

CAS RN: 525666 NIOSH #: UB 7500000
mf: $C_{16}H_{21}NO_2$; mw: 259.38

SYNS:
ICI 45520
1-ISOPROPYLAMINO-3-(1-NAPHTHYLOXY)-2-PROPANOL
PROPANALOL

TOXICITY DATA: 3
scu-mus LD50:150 mg/kg
orl-hmn TDLo:2300 ug/kg/D:PSY
orl-wmn LDLo:120 mg/kg
orl-chd LDLo:800 ug/kg/12H
ivn-hmn LDLo:71 ug/kg
orl-mus LD50:320 mg/kg
ipr-mus LD50:120 mg/kg
ivn-mus LD50:23 mg/kg
ivn-rbt LD50:12 mg/kg

CODEN:
FATOAD 44,342,81
BMJOAE 1,1182,78
APTOA6 41,190,77
BMJOAE 2,254,78
LANCAO 1,165,67
DRFUD4 4,442,79
DRFUD4 4,442,79
DRFUD4 4,442,79
ARZNAD 27,1022,77

THR: In hmn an orl PSY; Hmn HIGH orl, ivn; HIGH orl, ipr, ivn.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

INDERAL HYDROCHLORIDE

CAS RN: 318989 NIOSH #: UB 7525000
mf: $C_{16}H_{21}NO_2 \cdot ClH$; mw: 295.84

SYNS:
ICI 45520
1-(ISOPROPYLAMINO)-3-(ALPHA-NAPHTHOXY)-2-PROPANOL HYDROCHLORIDE
1-ISOPROPYLAMINO-3-(1-NAPHTHOXY)-PROPAN-2-OL HYDROCHLORIDE
1-(ISOPROPYLAMINO)-3-(1-NAPHTHYLOXY)PROPAN-2-OL HYDROCHLORIDE
1-(ISOPROPYLAMINO)-3-(1-NAPTHYLOXY)-2-PROPANOL HYDROCHLORIDE
1-(1-NAPHTHYLOXY)-2-HYDROXY-3-ISOPROPYLAMINO-PROPANE HYDROCHLORIDE
PROPRANOLOL HYDROCHLORIDE

TOXICITY DATA: 3-2
orl-mus LD50:471 mg/kg
ipr-mus LD50:125 mg/kg
ivn-mus LD50:22 mg/kg

CODEN:
BJPCAL 25,577,65
AIPTAK 195,57,72
EJMCA5 9,563,74

THR: HIGH ipr, ivn. MOD orl.
Disaster Hazard: When heated to decomp it emits very tox fumes of NO_x and HCl.

INDICAN (POTASSIUM SALT)

CAS RN: 2642377 NIOSH #: NM 3200000
mf: $C_8H_6NO_4S \cdot K$; mw: 251.31

Light brown plates from aq. alc; decomp @ 179°-180° (sublimes); v sol in H_2O; Insol in cold alc.

SYNS:
INDOL-3-OL, HYDROGEN SULFATE (ESTER), POTASSIUM SALT
INDOL-3-OL, POTASSIUM SULFATE
INDOL-3-YL POTASSIUM SULFATE
INDOL-3-YL SULFATE, POTASSIUM SALT
POTASSIUM INDOL-3-YL SULFATE
URINARY INDICAN

TOXICITY DATA: 3
scu-mus TDLo:3500 mg/kg/26W-I:ETA

CODEN:
KLWOAZ 36,1056,58

THR: Exper ETA.
Disaster Hazard: When heated to decomp it emits very tox fumes of NO_x and SO_x.

INDIGO YELLOW

CAS RN: 520183 NIOSH #: LK 9275200
mf: $C_{15}H_{10}O_6$; mw: 286.25

SYNS:
PELARGIDENOLON
RHAMNOLUTEIN
RHAMNOLUTIN
3,4',5,7-TETRAHYDROXYFLAVONE
5,7,4'-TRIHYDROXYFLAVONOL

TOXICITY DATA:
mma-sat 166 nmol/plate
mnt-mus-ipr 200 mg/kg

CODEN:
MUREAV 54,297,78
MUREAV 89,69,81

THR: MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

TOXICITY DATA: 1
mma-sat 6 mmol/L/2H
orl-rat LDLo:5000 mg/kg

CODEN:
CNREA8 39,4152,79
28ZRAQ -,55,60

Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MUT data. LOW orl. See also 2-methyl naphthalene.

Fire Hazard: Mod, via heat, flames, oxidizers.

To Fight Fire: Dry chemical, CO_2, water spray or mist, foam.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYLNAPHTHALENE

CAS RN: 91576 NIOSH #: QJ 9635000
mf: $C_{11}H_{10}$; mw: 142.21

Solid, insol in water, sol in alc and ether. d: 1.0058 @ 20°/4°, bp: 241.1°, mp: 34.58°.

SYN: BETA-METHYLNAPHTHALENE

TOXICITY DATA: 1
orl-rat LDLo:5000 mg/kg

CODEN:
28ZRAQ -,55,60

Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80

THR: LOW orl.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHALENEDIOL

CAS RN: 481856 NIOSH #: QJ 5075000
mf: $C_{11}H_{10}O_2$; mw: 174.21

SYNS:
METHYLNAPHTHOHYDROQUINONE
2-METHYL-1,4-NAPHTHOQUINOL
2-METHYL-1,4-NAPHTHOHYDROQUINONE

TOXICITY DATA: 3
orl-mus LD50:30 mg/kg
ipr-mus LDLo:400 mg/kg

CODEN:
JPETAB 75,111,42
CRSBAW 143,585,49

THR: HIGH orl, ipr.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHALENEDIOL DIBUTYRATE

CAS RN: 53370448 NIOSH #: QJ 5255000
mf: $C_{19}H_{22}O_4$; mw: 314.41

SYNS:
2-METHYL-1,4-NAPHTHOHYDROCHINON-DIBUTYRAT (GERMAN)
VITAMIN K4-DIBUTYRAT (GERMAN)

TOXICITY DATA: 2-1
orl-mus LD50:12 gm/kg
ipr-mus LD50:1 gm/kg

CODEN:
ARZNAD 17,1339,67
ARZNAD 17,1339,67

THR: MOD ipr; LOW orl.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

P-METHYL-N-(1-NAPHTHALENYLOXY) PHOSPHONAMIDOTHIOIC ACID-O-ETHYL ESTER

CAS RN: 63815532 NIOSH #: SZ 6260000
mf: $C_{13}H_{16}NO_2PS$; mw: 281.33

SYN: BAY 39197

TOXICITY DATA: 3
orl-rat LD50:250 mg/kg
orl-bwd LD50:18 mg/kg

CODEN:
TXAPA9 21,315,72
TXAPA9 21,315,72

THR: HIGH orl.

Disaster Hazard: When heated to decomp it emits very tox fumes of SO_x, PO_x and NO_x.

5-METHYLNAPHTHO(1,2,3,4-def)CHRYSENE

CAS RN: 2869092 NIOSH #: QL 0350000
mf: $C_{25}H_{16}$; mw: 316.41

SYN: 2'-METHYL-1,2:4,5-DIBENZOPYRENE

TOXICITY DATA: 3
scu-mus TDLo:72 mg/kg/9W-I:ETA

CODEN:
COREAF 259,3899,64

THR: An exper ETA.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

6-METHYLNAPHTHO(1,2,3,4-def)CHRYSENE

CAS RN: 2869105 NIOSH #: QL 0525000
mf: $C_{25}H_{16}$; mw: 316.41

SYN: 3'-METHYL-1,2:4,5-DIBENZOPYRENE

TOXICITY DATA: 3
scu-mus TDLo:72 mg/kg/9W-I:ETA

CODEN:
COREAF 259,3899,64

THR: An exper ETA.

Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHOQUINONE

CAS RN: 58275 NIOSH #: QL 9100000
mf: $C_{11}H_8O_2$; mw: 172.19

SYNS:
KIPCA, OIL SOLUBLE
2-METHYL-1,4-NAPHTHOCHINON (GERMAN)
3-METHYL-1,4-NAPHTHOQUINONE
THYLOQUINONE
USAF EK-5185
VITAMIN K3

TOXICITY DATA: 3
mmo-sat 4 ug/plate
mmo-omi-6 ppm
mma-sat 30 nmol/plate
skn-mus TDLo:1860 mg/kg/27W-I:ETA
skn-mus TD:8400 mg/kg/21W-I:ETA
ipr-rat LD50:75 mg/kg
ivn-rat LD50:800 mg/kg

CODEN:
ABCHA 6,45,327,81
POASAD 34,114,53
BBRCA9 94,737,80
BJCAAI 7,482,53
CNREA8 19,413,59
TXAPA9 18,185,71
ARZNAD 18,678,68

REFERENCE NO. 19

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-5611-63 NY53	8/18/88	1010

DISTRIBUTION:

Hudson River Psych. Center

BETWEEN:	OF:	PHONE:
Fred Andros	Town of Poughkeepsie H_2O Co.	(914) 462-6535

AND:

A. Culmone (NUS)

DISCUSSION:

Asked about use of wells in the area and if specific wells are still in use or if these sites are now on public water.

All wells just south of HRPC and in Town are now on public water supply.

Asked about non-community wells list. Told me that these are in Hyde Park + should verify with them. He believes these are still in use.

Poughkeepsie use Hudson River intake.
HRPC uses community H_2O, their river intake closed.

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 20

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8611-63 N453E	8/18/88	10 25

DISTRIBUTION: Hudson River Psych. Center

BETWEEN:	OF:	PHONE:
Bob O'Neill	Hyde Park H2O Co.	(914) 229-2524

AND: A. Calmon (NUS)

DISCUSSION:

Regarding wells in use in Hyde Park within 3 mile of the site. Nine community wells but agrees with ref. material as does the general listing of private wells.

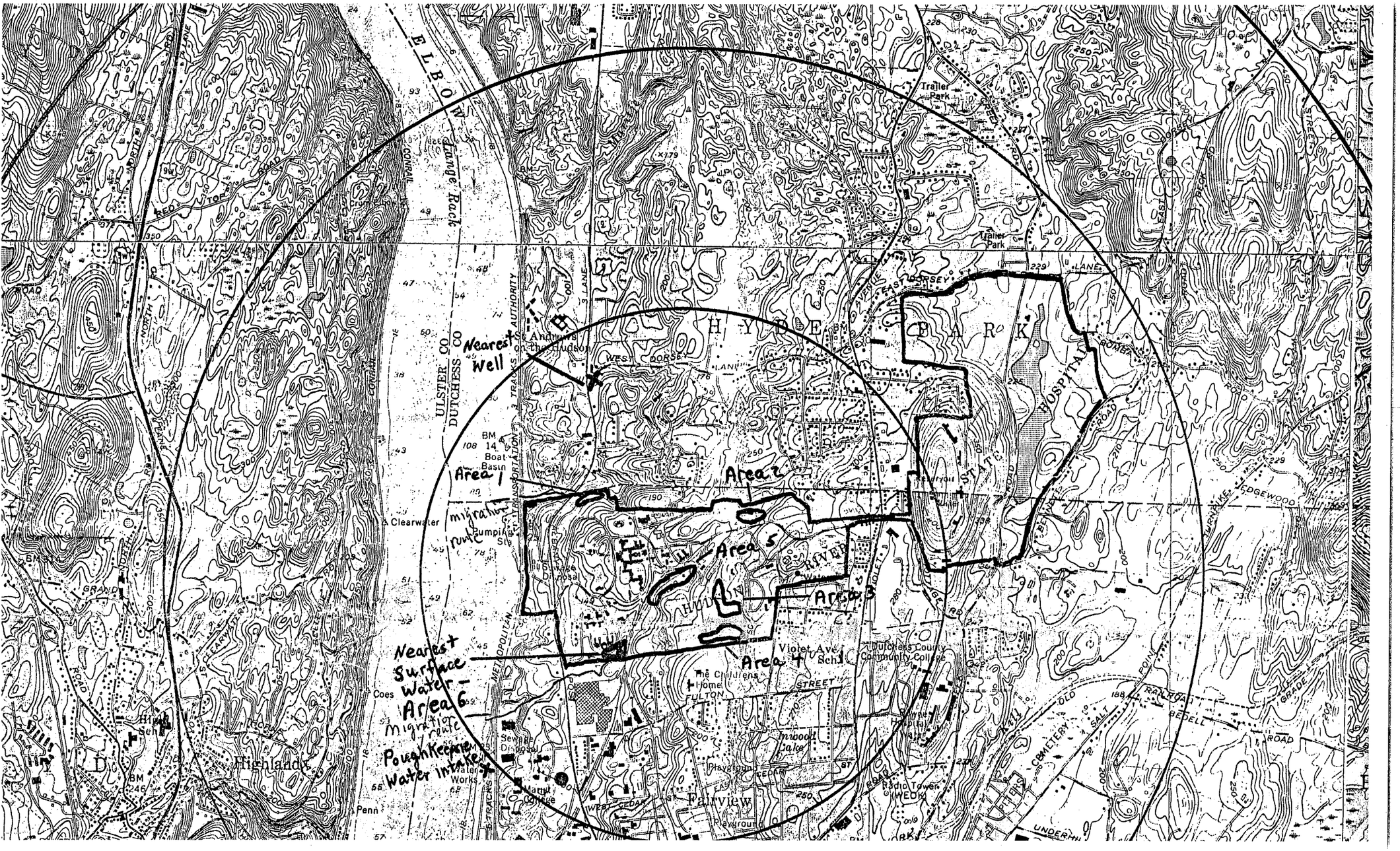
Community Wells

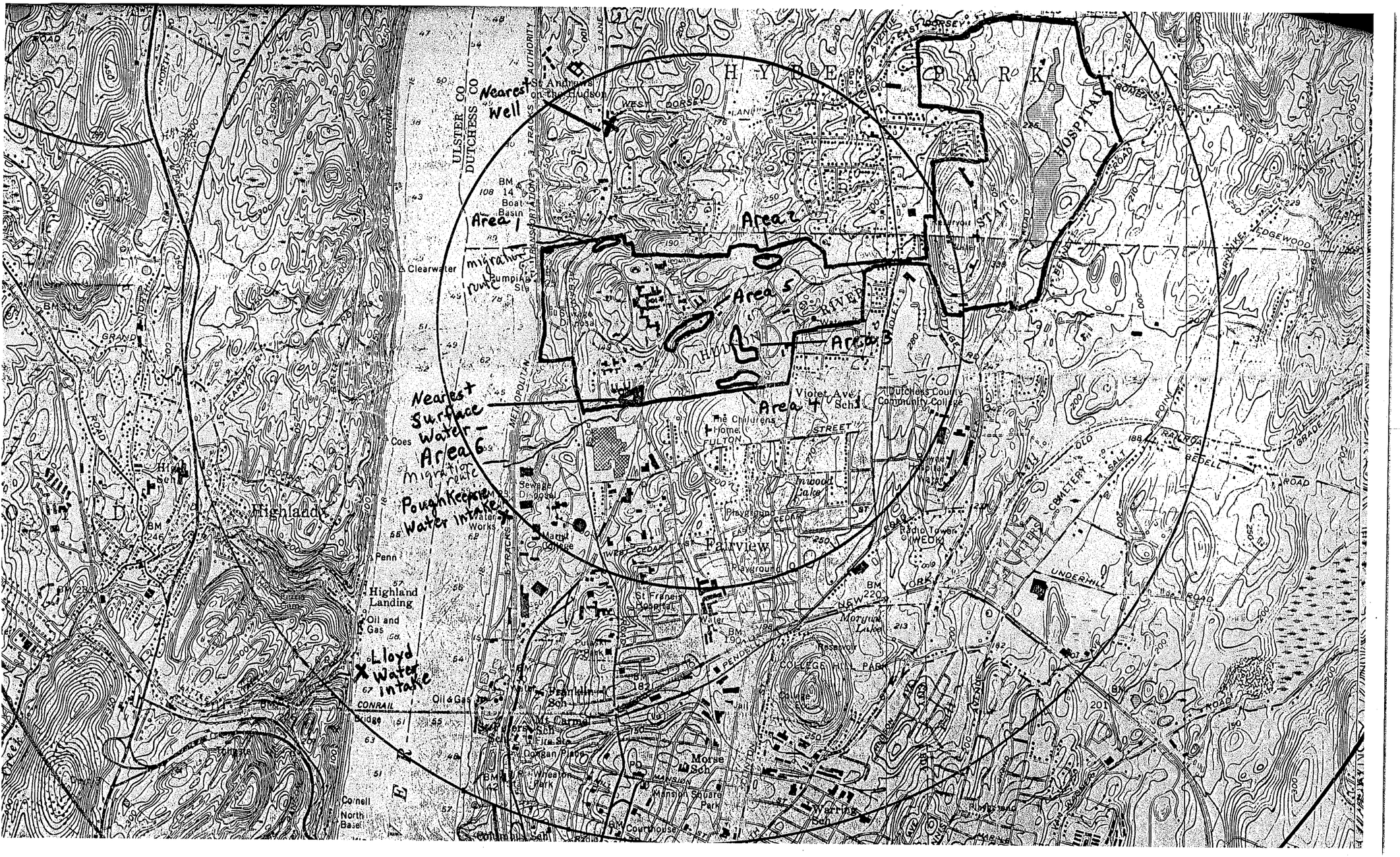
Dutch Garden Apts
Eleanor Roosevelt
Frantoni Villas
Green Meadow Trailer Ct
Hyde Park Terrace Apts
M & O
Valley Forge
Willow Tree
Woodfield

Assume private wells exist since no municipal H2O supply in this area.

ACTION ITEMS:

NUS 067 REVISED 0581


Nearest Well
Area 1
Area 2
Area 3
Area 4
Area 5
Area 6
migration route
Clearwater
Nearest Surface Water – Poughkeepsie Water Intake
migration route
Highlands
Fairview
St Andrews on the Hudson
Violet Ave Schl
Dutchess County Community College
The Children's Home
Trailer Park
Trailer Park
Radio Tower WEOK
Playground
Playground
Inwood Lake
Sewage Disposal
Water Works
Manual College
Penn
Coes
ELBOW
Large Rock
HYDE PARK
HUDSON RIVER
ULSTER CO
DUTCHESS CO
METROPOLITAN TRANSPORTATION AUTHORITY
CONRAIL
3 TRACKS
RED TOP ROAD
NORTH ROAD
WEST CEDAR
EAST CEDAR
CEDAR
FULTON STREET
WEST PARSEY
EAST PARSEY
HOSPITAL ROAD
BOWER ROAD
OLD POINT ROAD
SALT POINT TURNPIKE
RAILROAD GRADE
BEDELL ROAD
CEMETERY
PIERCE
UNDERHILL
EDGEWOOD
BM 14 Boat Basin
BM 246
BM
Pumping Sta
Sewage Disposal
Water
Water
Water
Water
High Sch
Sch
Sch


Nearest St Andrews on the Hudson Well
Area 1
Area 2
Area 3
Area 4
Area 5
Area 6
migration route
Clearwater
Nearest Surface Water - Area 6
Migration route
Poughkeepsie Water Intake
Lloyd Water intake
HYDE PARK
Highlands
Highland Landing
Fairview
Morgan Lake
Mirror Lake
Hudson River
Vassar Bros Hospital
Marist College
Mt Carmel
Morse Sch
Warring Sch
Franklin Sch
Violet Ave Sch
Dutchess County Community College
The Children's Home
Sewage Disposal
Water Works
Oil and Gas
Oil & Gas
Bridge
CONRAIL
Cornell
North Base
Coes
Penn
Edgewood
Old Salt Grade
Cemetery
Underhill
Pendell
Mansion Square Park
Wheaton Park
Courthouse
Reservoir
Playground
Radio Tower (WEOK)
ULSTER CO
DUTCHESS CO
METROPOLITAN TRANSPORTATION AUTHORITY
BM 14 Boat Basin
BM 246
BM 280
BM 220
BM 190
BM 82
BM 42

Nearest Surface Water – Area 6

Migration route

Poughkeepsie Water Intake

Area 4

Lloyd Water Intake

POUGHKEEPSIE

Highlands

Fairview

Arlington

Highland Landing

Oil and Gas

Oil and Gasoline

Oil & Gas

Wiltwyck

Dutchess County Community College

Violet Ave Sch

The Children's Home

Fulton Street

Imwood Lake

Playground

Water Works

Warm Comfort

Penn

St Francis Hospital

Morgan Lake

Reservoir

College

Vassar Brothers Hospital

Vassar Temple

Vassar Lake

Morse Sch

Mansion Square Park

Courthouse

Wilbur Park

Dorgan Plaza

Mt Carmel Sch

Franklin Sch

Conrail Bridge

Cornell North Base

South Base

Mid-Hudson Bridge

Toll

Eastman Park

Library

St Mary's Sch

Hawthorne Sch

Armory

Fire Sta

Post Office

Jail

Radio Tower (WEOK)

Old Salt Point Road

Cemetery

Underhill Road

York

Pendell

Raymond Ave Sch

High Sch

Calvary Cemetery

Manchester Road

Conrail

Oakes

Yellow

Krieger Sch

Bancroft

Ramada

South

Raymond

Route 9

Route 44

Route 55

Route 82

Route 376

Route 9G

Route 9W

Route 44-55

Route 82

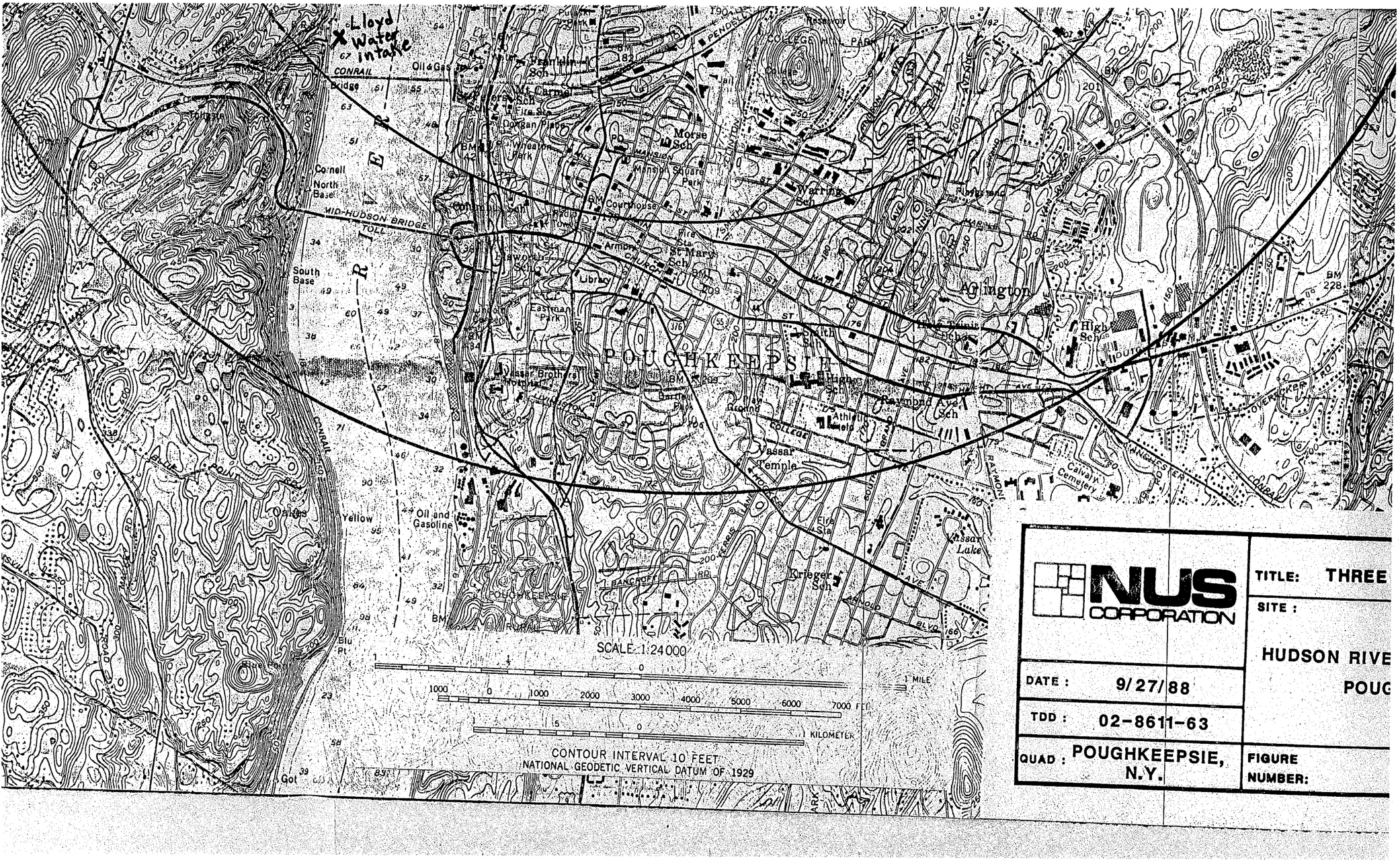
Route 376

Route 9G

Route 9W

NUS

TITLE: THREE



NUS CORPORATION	TITLE: THREE
	SITE : HUDSON RIVE POUG
DATE : 9/27/88	
TDD : 02-8611-63	
QUAD : POUGHKEEPSIE, N.Y.	FIGURE NUMBER: