ND 2900 D1721

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

E.I. DUPONT, SITE NUMBER 915019
CITY OF BUFFALO, ERIE COUNTY

January 1990

Prepared for:

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of Environmental Conservation
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1. EXECUTIVE SUMMARY

1.1 SITE BACKGROUND

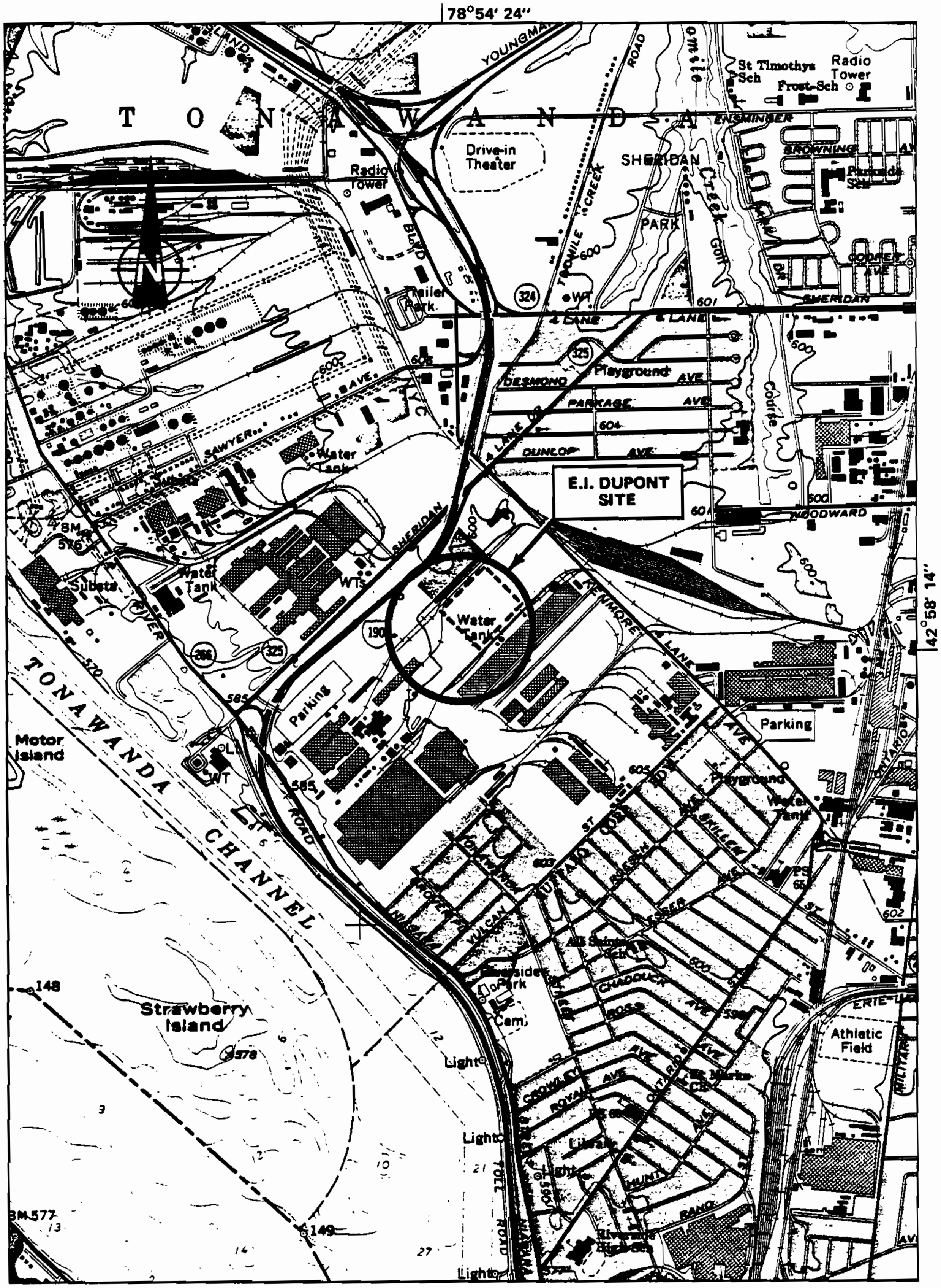
The E.I. DuPont Company (E.I. DuPont) site is located off Kenmore Avenue near Sheridan Drive in the Town of Tonawanda, Erie County, New York. This site is approximately 30 to 40 acres in area and is located in a highly industrialized section of Tonawanda (see Figure 1-1).

During a period from 1921 to 1978 DuPont reportedly disposed of 80,000 tons of cellulosic viscose, cellophane, rayon, and sponges. Also, DuPont disposed of 5,000 tons of dry Corian wastes (polymethylmethacrylate and aluminum oxide), 1,500 tons of wet Corian wastes, 1,500 tons of methyl methacrylate/methylene chloride/inert filler, 100 tons of polyvinyl alcohol film, 1,500 tons of Vexas netting, 1,000 tons of Tedlar (polyvinyl fluoride) with dimethylacetamide, 750 tons of polyvinyl fluoride film, 76 tons of nylon shutters, water based paint, lab chemicals, and 1 ton of foundry sand from an automobile manufacturing plant.

This waste was disposed of in six, 15- to 20-feet-deep pits comprising 6 to 8 acres of total area, and is covered with foundry sand over a large portion of the site. Groundwater samples have been taken

by DuPont, the United States Geological Survey (USGS), and NUS Corporation for the United States Environmental Protection Agency (USEPA). Results of these analyses indicate a contravention of groundwater standards for several parameters.

The site is now used for surficial disposal of demolition debris. A 10- to 12-acre area which is used for a parking lot has been sold to General Motors Corporation. Refer to Figure 1-2 for a generalized map of the E.I. Dupont site.



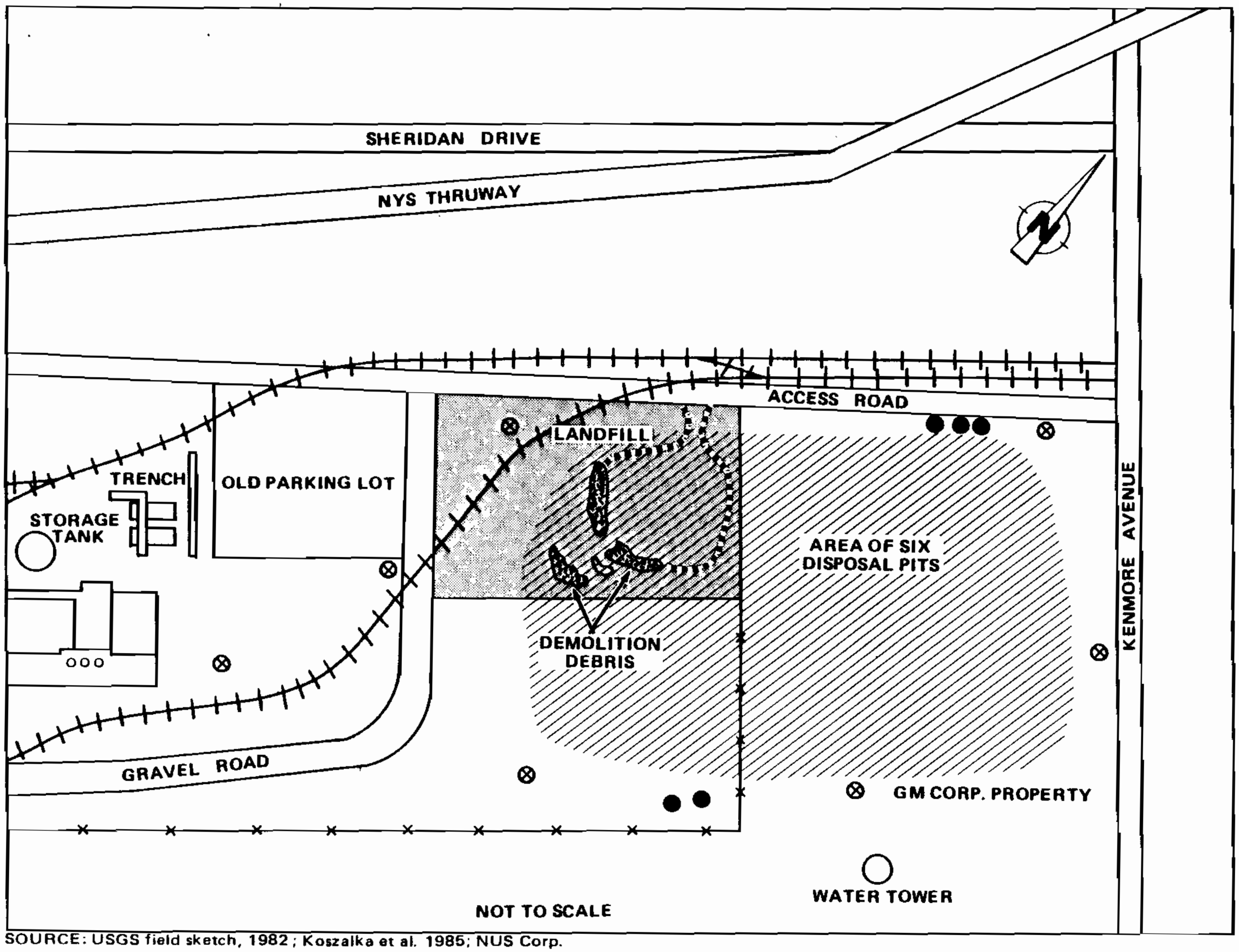
SOURCE: USGS 7.5 Minute Series (Topographic) Quadrangle: Buffalo NW, NY–ONT, 1965.

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

Figure 1–1 LOCATION MAP



SOURCE: USGS field sketch, 1982; Koszalka et al. 1985; NUS Corp.

KEY:

● EPA Monitoring Well ⊗ Property Owners Monitoring Well

Figure 1–2 SITE MAP - E. I. DUPONT

1.2 PHASE I EFFORTS

On September 24, 1987, Ecology and Environment, Inc. (E & E) conducted a site inspection in support of this investigation. Prior to the inspection, available federal, state, county, and municipal files were reviewed. The site inspection consisted of a visual survey of the property that included:

- Overall site conditions;
- Description of vegetation and a survey for stressed vegetation;
- Presence of structures on the site;
- Distance to nearest residence;
- Location of nearest agricultural land;
- Location of nearest surface water and wells, and type of use;
- Visual delineation of waste disposal areas;
- Air quality survey using an HNu photoionizer; and
- Photodocumentation of the site.

All observations were recorded in a field logbook and reported in the USEPA Site Inspection Report form.

1.3 ASSESSMENT

The E.I. DuPont site is a vacant lot in an industrial setting containing landfilled formica-type materials, solidified foam, and plastic/nylon. This waste has been covered with foundry sand, but some has migrated through the cover material. According to the Erie County Department of Environment and Planning (ECDEP), groundwater from on-site wells exceeded New York State groundwater standards for sulfate, chloride, soluble arsenic, soluble barium and soluble lead.

This site is currently used for surficial disposal of demolition debris and is heavily foliated with vegetation in most areas, although there are barren sections of the site.

1.4 HRS SCORE

A preliminary application of the Hazard Ranking System (HRS) has been made to quantify the risk associated with this site. As the Phase I investigation is limited in scope, not all the information needed to fully evaluate the site is available. An HRS score was completed on the basis of the available data. Absence of necessary data may result in an unrealistically low HRS score.

Under the HRS, three numerical scores are computed to express the site's relative risk or damage to the population and the environment. The three scores are:

- o S_M reflects the potential for harm to humans or the environment from migration of a hazardous substance away from the facility by routes involving groundwater, surface water, or air. It is a composite of separate scores for each of the three routes (S_{GW} = groundwater route score, S_{SW} = surface water route score, and S_A = air route score).
- o S_{FE} reflects the potential for harm from substances that can explode or cause fires.
- o S_{DC} reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

The preliminary HRS score was:

S_M = 24.99 (S_{GW} = 4.32 S_{SW} = 43.01; S_A = 0)
S_{FE} = Not scored
S_{DC} = 0

2. PURPOSE

This Phase I investigation was conducted under contract to the NYSDEC Superfund Program. The purpose of the investigation was to provide a preliminary evaluation of the potential hazardous waste present at the site, to estimate the potential pollutant migration pathways leading off site, and to determine the natural resources or extent of the human population that might be affected by the pollutants. This initial investigation consisted of conducting a detailed file review of available information and a site inspection. The evaluation includes preparation of a narrative site description, initial characterization of the hazardous substances on site, and calculation of a preliminary HRS score. This assessment will be used to determine what additional actions, if any, should be conducted at the site.

3. SCOPE OF WORK

The Phase I effort involved the following tasks:

- A review of available information from state, county, municipal, and private files;
- Interviews with individuals knowledgeable of the site; and
- Physical inspection of the site that included review of USGS 7.5-minute topographic maps. No samples were collected, although air monitoring was performed using an HNu photoionizing organic vapor detector.

Photographs were taken during the site inspection and are included in Appendix A. Table 3-1 lists sources contacted for the Phase I investigation. References are included in Section 7.

Table 3-1

SOURCES CONTACTED FOR THE NYSDEC PHASE I
INVESTIGATION AT THE E.I. DUPONT SITE

Agencies Contacted

U.S. Environmental Protection Agency
Region II Office
26 Federal Plaza, Room 900
New York, New York 10278
Contact: Ben Conetta
Telephone No.: (212) 264-8677
Date: 8/3/87
Information Gathered: Site inspection report.

New York State Department of Environmental Conservation
Solid and Hazardous Waste Division and Permitting Division
600 Delaware Avenue
Buffalo, New York 14202
Contact: Lawrence Clare
Telephone No.: (716) 847-4585
Date: 4/29/87
Information Gathered: File search for E.I. DuPont.

New York State Department of Environmental Conservation, Region 9
Division of Water, Fish, and Wildlife
128 South Street
Olean, New York 14760
Contact: Joe Evans
Telephone No.: (716) 372-0645
Date: 9/15/87
Information Gathered: Stream classification and fisheries information.

New York State Department of Environmental Conservation, Region 9
Division of Water, Fish, and Wildlife
600 Delaware Avenue
Buffalo, New York 14202
Contact: Rebecca Anderson, James Batchellor, Jim Farquar
Telephone No.: (716) 847-4550
Date: 6/13/87, 8/26/87
Information Gathered: Floodplains, significant habitats, fisheries resources, plant species of concern, wetlands in vicinity of E.I. DuPont.

Erie County Department of Environmental Planning
95 Franklin Street
Buffalo, New York 14202
Contact: Kermit Studley
Telephone No.: (716) 846-6370
Date: 6/6/87
Information Gathered: File search for E.I. DuPont

United States Department of Agriculture (USDA)
Soil Conservation Service
21 South Grove Road
East Aurora, New York 14731
Contact: John Whitney
Telephone No.: (716) 699-2326
Date: 8/25/87
Information Gathered: Agricultural district lands and distance to productive prime agricultural lands.

City of Buffalo, City Hall
Real Property Assessor
65 Niagara Street
Buffalo, New York 14202
Contact: Tax Assistant
Telephone No.: (716) 851-5733
Date: 6/16/87
Information Gathered: Property ownership for E.I. DuPont

Table 3-1 (Cont.)

State of New York Department of Health
Corning Tower
The Governor Nelson A. Rockefeller
Empire State Plaza
Albany, New York 12237
Contact: Lani Rafferty
Telephone No.: (518) 458-6376
Date: 4/5-6/89
Information Gathered: File search for site history, correspondence, background information.

New York State Department of Health
Regional Toxic Program Office
584 Delaware Avenue
Buffalo, New York 14202
Contact: Linda Rusin, Cameron O'Connor
Telephone No.: (716) 847-4365
Date: 5-5-87, 6-4-87 and 4-13-89
Information Gathered: Contact with NYSDOH on May 5, 1987, indicated that files were being transferred from Albany to Buffalo so the files were not accessible. Further correspondence in June 1987 indicated that the office was newly established and file information was extremely limited; therefore, the county health departments were visited in lieu of NYSDOH. NYSDOH files were searched on April 13, 1989.

4. SITE ASSESSMENT

4.1 SITE HISTORY

The E.I. DuPont Company, located on River Road in Tonawanda, New York, is an active facility which operated a landfill from 1921 to 1978 (NYSDEC 1986). Landfilling is currently inactive; however, surficial disposal of demolition debris is presently taking place on the landfill (E & E 1987). The following products have been manufactured at the plant since 1921 (O'Neill 1983):

● Rayon	1921-1955
● Cellophane	1924-1968
● Cel-O-Seal Caps and Bands	1931-1964
● Cellulose Sponge	1936-1951
● Cordura Yarn	1941-1955
● Polyethylene Film	1951-1961
● Vexar Netting	Since 1959
● Tedlar Polyvinyl Fluoride Film	Since 1955
● Corian Sheet and Shape	Since 1968

These products are used to manufacture simulated marble sheets, sinks, and monolithic sink/countertop units. The following waste products were generated and disposed of in six 15- to 20-foot-deep pits at this site over an area of 30 to 40 acres (ECDEP 1982 and O'Neill 1983):

o	Cellulosic viscose, cellophane, rayon, and sponges	80,000 tons
o	Dry Corian wastes	5,000 tons
o	Wet Corian wastes	1,500 tons
o	Methyl methacrylate, methylene chloride, inert filler	1,500 tons
o	Polyvinyl alcohol film	100 tons
o	Vexar netting	1,500 tons
o	Tedlar with dimethylacetamide	1,000 tons
o	Tedlar polyvinyl fluoride film	750 tons
o	Nylon shutters and water-based paint	75 tons
o	Laboratory chemicals	1 ton

Foundry sand was used as a cover material for a large portion of the site. A 10- to 12-acre parcel of the landfill area has been sold to General Motors and is now utilized as a parking lot. Aerial photographs indicated that the area originally had a brushland/open meadow type of ground cover. Much of the area was freshwater wetland. Prior to industrialization of the area, all surface drainage in the study area was to the northwest via tributaries of Two Mile Creek. Following development, there was a distinct alteration of drainage (ECDEP 1982).

E.I. DuPont filed an application for permit to dispose of non-offensive and non-putrescible material with the Erie County Department of Health (ECDOH) on May 19, 1964; an application for approval to operate a new refuse disposal area with the New York State Department of Health (NYSDOH) on February 28, 1973; and an application for approval to construct a solid waste management facility with NYSDEC on May 8, 1975.

NYSDEC inspected the site in April 1964 and found that industrial wastes consisting of garbage, papers, cellophane, polyethelene, Tedlar and Vexar (co-products), and foundry waste were disposed of on these grounds. The garbage and cellophane was burned in a cage. The remaining waste was dumped into a pit and buried with a bulldozer. NYSDEC also inspected the site in 1975 and found exposed refuse and improper spreading, and collected groundwater samples in 1981-1982 and 1985-1986. ECDEP inspected the site in 1979, 1980, and 1981; Recra collected groundwater samples in 1979; Empire soils performed soil permeability tests in 1980; the USGS sampled groundwater in 1982; and NUS Corporation performed a preliminary assessment in 1983 and a site inspection in 1984 for USEPA. Results of groundwater analyses and permeability tests are discussed in Section 4.4 of this report.

4.2 SITE TOPOGRAPHY

The E.I. DuPont site is located in the Erie-Ontario lowland physiographic province, which is an area of low relief (LaSala 1968). It is approximately 30 to 40 acres in area, bounded in the southwest by River Road, and in the northeast by Kenmore Avenue near Sheridan Drive in the Town of Tonawanda, Erie County, New York. Surface elevation at the site is 600 feet above mean sea level. The Niagara River (Tonawanda Channel) is located approximately 0.75 mile from the waste area to the southwest. The surrounding industrial area is generally flat lying with less than 1% slope. Residential areas occur less than 1,500 feet to the north and southwest of the site.

The landfill area lies in an area classified as Zone C based upon Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA 1982). Zone C represents areas of minimal flooding.

4.2.1 Soils

The soils at the E.I. DuPont site are described as urban land, indicating very few undisturbed areas of original soil. Where development has not occurred, approximately 40 feet of glacio-lacustrine clay is expected. This silty clay subsoil is relatively impermeable and may impede downward migration of any contaminants that may be present on site. The pH of this soil is 6.5 and permeability approximately 0.63 to 2.0 inches per hour (Owens et al. 1985). Depth to the

Camillus shale bedrock is approximately 60 to 80 feet below ground surface (O'Neill 1983).

Areas of prime agricultural land that have been in production since 1982 are more than 2 miles from the site (Whitney 1987).

4.2.2 Wetlands

Wetlands are classified by NYSDEC into four ranked groups based on the relative value and the degree of benefits supplied by the wetland. A Class I wetland is considered the most valuable wetland type while a Class IV wetland lacks the characteristics justifying a higher classification (e.g., habitat for endangered species, proximity to reservoirs, etc.); however, a Class IV wetland still qualifies as a regulated wetland.

Two state-designated wetlands are located near the E.I. DuPont site. The Sawyer Avenue wetland is approximately 0.6 mile northeast of the site. It encompasses 30 acres and is a Class II wetland. The East River wetland is located 1.5 miles to the west, and is 9 acres in size. This wetland is located in Beaver Island State Park on the Niagara River-Grand Island shoreline. It is classified as a Class I wetland (NYSDEC 1987a). Although the wetland does not qualify as a protected wetland under the 12.4-acre size criteria, it is an area that has been reported by NYSDEC as outstanding wildlife habitat for breeding, nesting, feeding, and cover. The wetland is reported to have some value for fish spawning and provides an excellent recreation area for hiking, bird watching, and photography. It is also considered to be a significant coastal fish and wildlife habitat area as part of the Strawberry Island-Motor Island Shallows (NYSDEC 1987a).

There are six federally designated wetlands within a 1-mile radius of the landfill. These wetlands are small (less than 9 acres) and are classified as palustrine, emergent, narrow-leaved persistent, with a temporary to seasonal water regime, and excavated palustrine, open water/unknown bottom, with an intermittently flooded/temporary water regime.

4.2.3 Surface Waters

The E.I. DuPont site is located 0.75 mile northeast of the Niagara River (Tonawanda Channel). The entire river is classified as Class A water and is a natural reproduction area for many fish. Class A waters are best used as a source of water supply for drinking, culinary or food processing purposes, and any other uses (State of New York, Official Codes, Rules, and Regulations 1985.) Although the Niagara River is not stocked, salmon and trout stocked in Lake Erie may migrate into the river channel (Evans 1987).

The Niagara River is approximately 37 miles long with an average flow of 5,700 cubic meters per second. The Tonawanda Channel is 15 miles long and carries 43% of the flow around Grand Island. The river is used as a source of drinking water, recreation, transportation, and is a water source for industrial uses as well as a receptor for effluent. Point and nonpoint discharges have had a significant adverse impact on the river's quality (Niagara River Toxics Committee 1984).

The Erie County Water Authority, VanDeWater Intake is approximately 1 mile west of the site. The Tonawanda Water District No. 1 Intake, about 1.5 miles southwest of the site, services 91,269 people. The Grand Island Water District No. 2 Intake is located approximately 3 miles west of the site and services 9,390 people (NYSDOH 1982).

4.2.4 Land Use

The primary use in the vicinity of the site is commercial and industrial. The nearest residential area is 0.2 mile northeast and 0.6 mile south of the landfill area (USGS 1965). The total population within a 1-mile radius of the site is approximately 9,395, and approximately 110,843 within a 3-mile radius (General Sciences Corporation 1986). There are no historical sites listed in the National Register within view of the site (Murtagh 1976).

4.2.5 Critical and Sensitive Habitats

NYSDEC has classified Strawberry Island, a 20-acre island located 1.3 miles southwest of the site in the middle of the Niagara River, as a critical and sensitive wildlife habitat area. The island is reported to be a significant waterfowl feeding and nesting area as well as an important game fish spawning habitat. The island has been degraded over the years due to gravel removal. Although the activity has stopped, there is a potential for erosion to continue to degrade the island (NYSDEC 1987a).

4.3 SITE HYDROLOGY

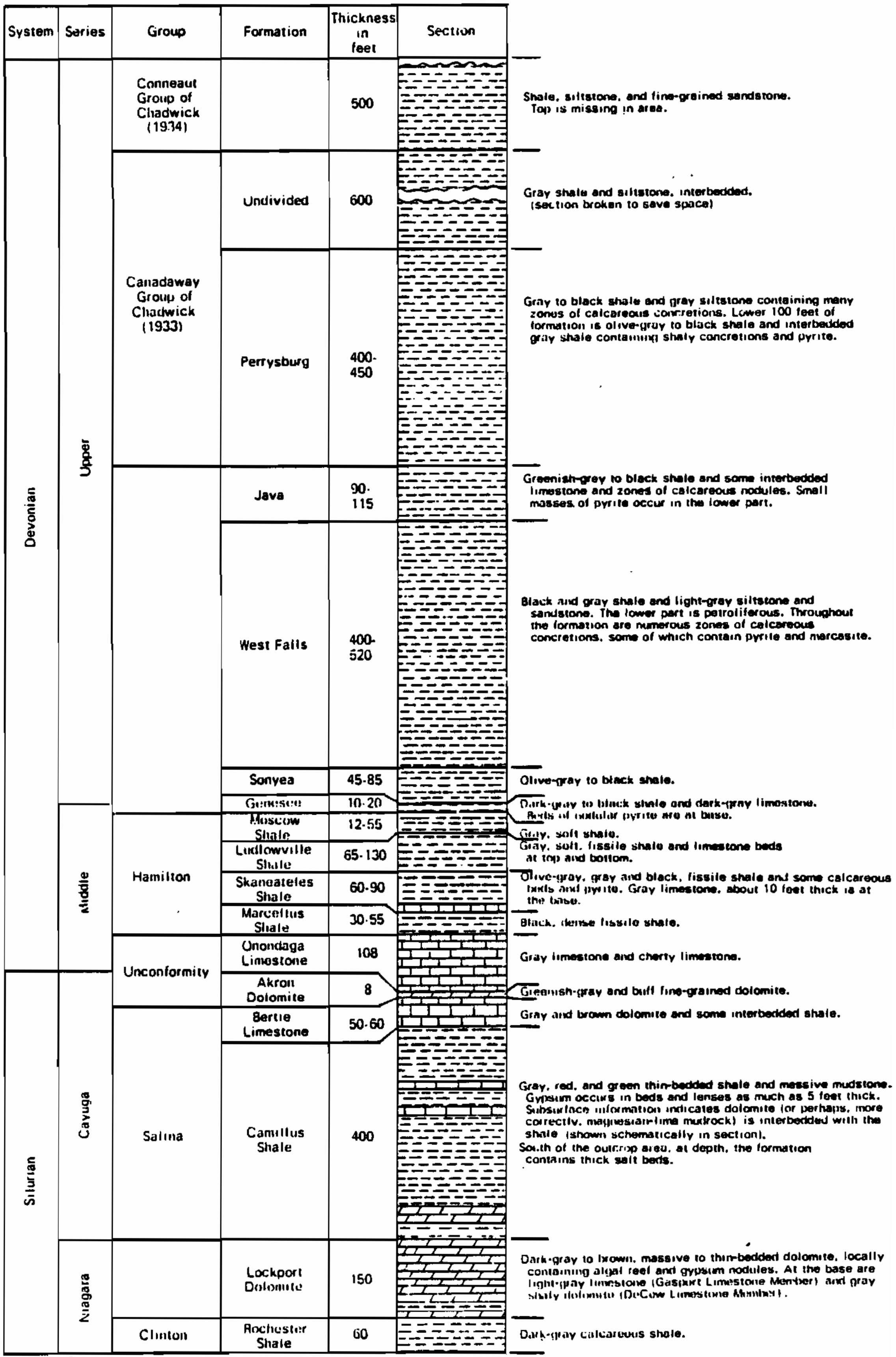
4.3.1 Regional Geology and Hydrogeology

The E.I. DuPont site lies within the Erie-Niagara basin and the Erie-Ontario lowland physiographic province. The overburden in Erie County consists mainly of glacial till, an unconsolidated poorly sorted mix of clay, silt, and/or sand. It forms a thin mantle over the bedrock and exhibits low permeability. The region between the Onondaga Escarpment to the north and the hilly areas to the south also received lacustrine clay and silt deposits during late Pleistocene time from the larger ancestral Great Lakes. These deposits exhibit very low permeabilities. As the ancestral lakes retreated, sandy beach sediments were also deposited in this region. These deposits exhibit relatively high permeabilities (Buehler and Tesmer 1963).

The bedrock in the region is exclusively sedimentary. The shale, limestone, and dolomite units dip gently southward approximately 40 feet per mile. Although the bedrock dips southward, the land surface is flat or actually increases in elevation to the south. Therefore, the further south the location, the younger the underlying bedrock (LaSala 1968).

Up to 32 distinct bedrock members have been identified in Erie County (see Figure 4-1). The oldest unit, Silurian in age, underlying the northern part of the county is the Camillus Shale. This member, which is 30 to 1000 feet thick, contains significant reserves of groundwater in cavities formed by the dissolution of gypsum (LaSala 1968).

Several limestone members also of Silurian age overlie the Camillus Shale. The Bertie limestone, approximately 50 feet thick, overlies the Camillus Shale and is in turn overlain by the Akron Dolomite, which is about 8 feet thick. Little record of latest Silurian or Early Devonian history is preserved in Western New York. However, the Middle and Late Devonian record is well preserved beginning with the Onondaga Limestone unconformably overlying the Akron Dolomite. The unit comprises three distinct members that cumulatively are approximately 140 feet thick (Buehler 1966).



System	Series	Group	Formation	Thickness in feet	Section	
Devonian	Upper	Conneaut Group of Chadwick (1934)		500		Shale, siltstone, and fine-grained sandstone. Top is missing in area.
		Canadaway Group of Chadwick (1933)	Undivided	600		Gray shale and siltstone, interbedded. (section broken to save space)
			Perrysburg	400-450		Gray to black shale and gray siltstone containing many zones of calcareous concretions. Lower 100 feet of formation is olive-gray to black shale and interbedded gray shale containing shaly concretions and pyrite.
			Java	90-115		Greenish-grey to black shale and some interbedded limestone and zones of calcareous nodules. Small masses of pyrite occur in the lower part.
			West Falls	400-520		Black and gray shale and light-gray siltstone and sandstone. The lower part is petroliferous. Throughout the formation are numerous zones of calcareous concretions, some of which contain pyrite and marcasite.
			Sonyea	45-85		Olive-gray to black shale.
			Genesee	10-20		Dark-gray to black shale and dark-gray limestone. Beds of nodular pyrite are at base.
	Middle	Hamilton	Moscow Shale	12-55		Gray, soft shale.
			Ludlowville Shale	65-130		Gray, soft, fissile shale and limestone beds at top and bottom.
			Skaneateles Shale	60-90		Olive-gray, gray and black, fissile shale and some calcareous beds and pyrite. Gray limestone, about 10 feet thick is at the base.
			Marcellus Shale	30-55		Black, dense fissile shale.
		Unconformity	Onondaga Limestone	108		Gray limestone and cherty limestone.
Silurian	Cayuga		Akron Dolomite	8		Greenish-gray and buff fine-grained dolomite.
		Salina	Bertie Limestone	50-60		Gray and brown dolomite and some interbedded shale.
			Camillus Shale	400		Gray, red, and green thin-bedded shale and massive mudstone. Gypsum occurs in beds and lenses as much as 5 feet thick. Subsurface information indicates dolomite (or perhaps, more correctly, magnesian-lime mudrock) is interbedded with the shale (shown schematically in section). South of the outcrop area, at depth, the formation contains thick salt beds.
	Niagara		Lockport Dolomite	150		Dark-gray to brown, massive to thin-bedded dolomite, locally containing algal reef and gypsum nodules. At the base are light-gray limestone (Gasport Limestone Member) and gray shaly dolomite (DeCew Limestone Member).
		Clinton	Rochester Shale	60		Dark-gray calcareous shale.

SOURCE: LaSala 1968

Figure 4—1 BEDROCK UNITS OF THE ERIE-NIAGARA BASIN

The Marcellus Shale member overlies the limestone units. This dense, black, fissile shale is approximately 30 to 55 feet thick. This shale, unlike the Camillus Shale, is impermeable. It confines the limestone and Camillus Shale aquifers below (LaSala 1968).

The Skaneateles Formation overlies the Marcellus Shale. This 60- to 90-foot thick formation is represented by the Stafford Limestone and Levanna Shale. The black, fissile shale is expected to be impermeable and will therefore confine groundwater found in the lower limestone units (Buehler 1966).

Overlying the Skaneateles is the Ludlowville formation represented by the Centerfield Limestone, Ledyard Shale, Wanakah Shale, and Tichenor Limestone members. The shale members contain numerous limestone beds. The Ludlowville Formation is followed by the Moscow Formation represented by the Kashong shale and Windom shale. The Moscow Formation is followed by 2,500 feet of upper Devonian rocks in southwestern New York State consisting of the Genesee, Sonyea, West Falls, Java, Canadaway, Chodakoin, and Cattaraugus formations. These consist almost exclusively of shale members. The Canadaway formation is by far the thickest (up to 1,000 feet) and underlies the southern third of Erie County (LaSala 1968).

Significant amounts of groundwater occur only in the overburden and in the lower bedrock units. The Camillus shale contains numerous cavities formed by the dissolution of gypsum and is thus a very productive aquifer. The Onondaga, Akron, and Bertie Dolomite and limestones contain water in bedding joints widened by dissolution. Vertical fractures in the limestone provide hydraulic connections among the many bedding planes (LaSala 1968).

Very little groundwater is found in the formations above the limestone unit. These formations, principally shale, are impermeable. Some water transmission occurs in small fractures in the bedrock, but no wells of significant yield are found in these units. Groundwater in these regions is obtained mainly from glacial overburden deposits (LaSala 1968).

4.3.2 Site Hydrogeology

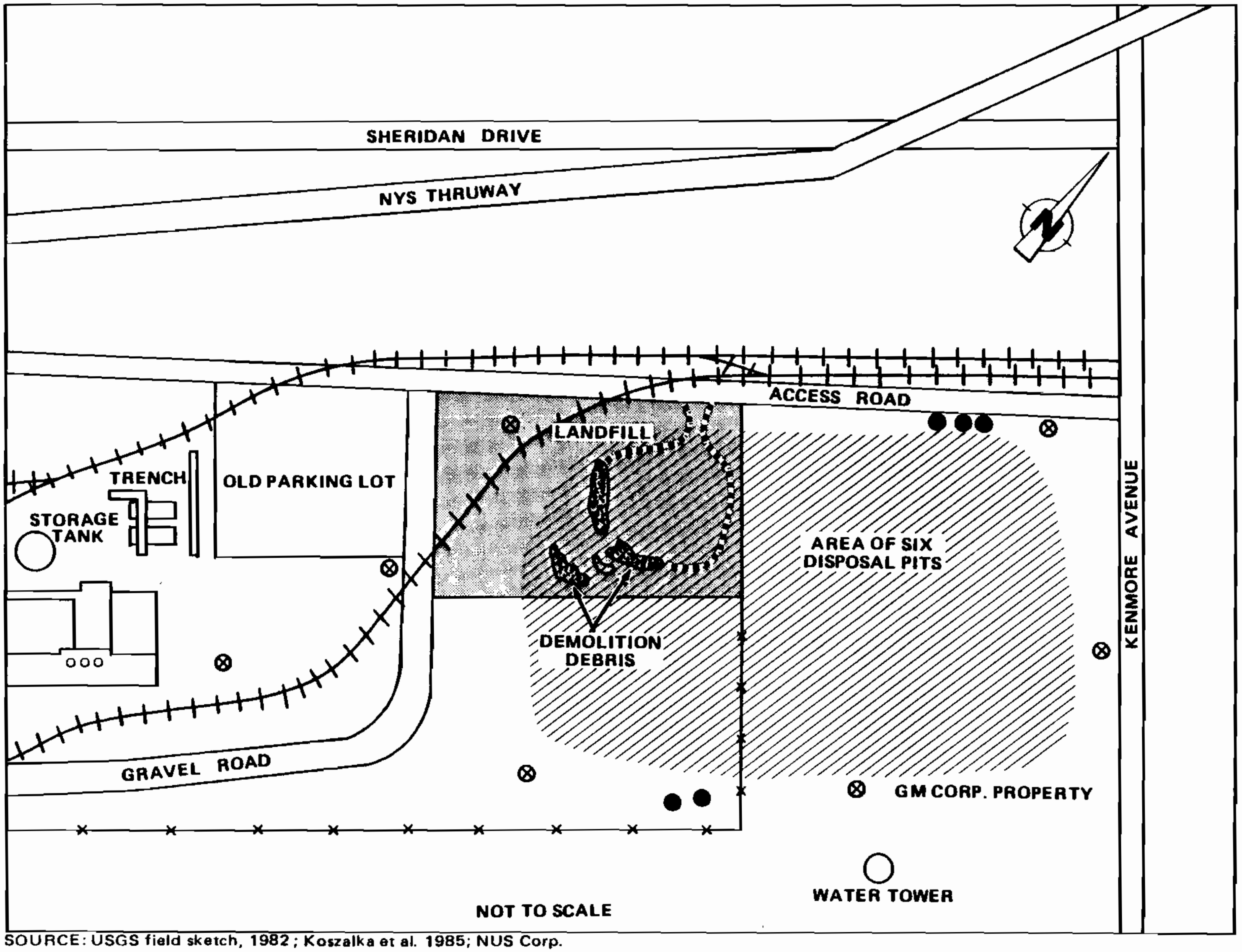
The subsurface geology and hydrologic conditions existing at the site have been identified through boring logs and permeability tests performed on soil borings. Locations of borings are found in Figure 4-2. Review by ECDEP of boring data taken at sites along River Road, at Dunlop Tire and Rubber, at Ashland Petroleum, at E.I. DuPont Company, and at the Niagara landfill indicates that bedrock is found 40 to 90 feet below the ground surface (ECDEP 1982). Bedrock is represented by the Camillus Shale, which is approximately 400 feet thick. The Camillus Shale is an important source of gypsum (Buehler and Tesmer 1963). The bedrock is generally overlain by thick deposits of silty clay material. Permeability tests run by Empire Soils in 1980 on three undisturbed clay samples indicate relatively low permeability rates ranging from 1.08 x 10^{-8} to 1.60 x 10^{-8} cm/second (Blas 1980).

Water levels in six of seven monitoring wells installed by the site owner (see Figure 4-2) average 6.5 feet below ground surface. In Well 3, the water level was more than 20 feet below ground surface (Koszalka et al. 1985). Data provided by the Dunlop Tire and Rubber Company shows that a bedrock aquifer exists at a depth of approximately 35 to 40 feet. This aquifer was tapped as a water supply by the firm during the 1940s. The undeveloped land north of Sheridan Drive and west of Two Mile Creek Road contains wetland areas indicative of a year-round water table at or near the surface (ECDEP 1982).

There are no municipal wells within a 3-mile radius of the site (New York State Department of Health 1982). The entire area is serviced by the Niagara River and there are no known private water wells in use (ECDEP 1982).

4.3.3 Hydraulic Connections

Drainage in the vicinity of the site can be described as serving two distinct land areas. The area northeast of the site is served by a tributary of Two Mile Creek. The area west and south of the site has no distinctive drainage patterns. Drainage in this area is believed to be directly to the Niagara River via ditches or runoff (ECDEP 1982).



SOURCE: USGS field sketch, 1982; Koszalka et al. 1985; NUS Corp.

KEY:
● EPA Monitoring Well ⊗ Property Owners Monitoring Well

Figure 4–2 LOCATION OF MONITORING WELLS AT DUPONT COMPANY, TONAWANDA, NEW YORK

Relatively impermeable soils in the area should minimize downward movement of contaminants to the bedrock or groundwater aquifer. The pH of the soil will reduce the rate of re-entry of contaminant metals as this occurs more rapidly in acidic soils (ECDEP 1982).

4.4 SITE CONTAMINATION

Groundwater at the site has been sampled several times by E.I. DuPont, USGS, NYSDEC, ECDEP, and USEPA. Results of these sampling efforts are found in Appendix B of this report. In general, the following chemical parameters exceeded USEPA drinking water standards in August 1982: sulfate, chloride, dissolved barium, dissolved lead, and dissolved mercury. There were no organic priority pollutants detected (Koszalka _et al_. 1985). The analytical results from the NYSDEC 1985-1986 compliance sampling indicated no USEPA priority pollutants at or above cutoff criteria (NYSDEC 1987b). Samples collected in 1980 by Recra indicated concentrations of sulfate, chloride, soluble arsenic, soluble selenium, soluble mercury, soluble barium, and soluble lead in excess of New York State drinking water standards. Samples collected in 1984 by the USEPA indicated concentrations of arsenic, chromium, cobalt, lead, and nickel in excess of drinking water standards. Soils tested from the site detected the chemical compounds listed in Table 4-1 (see Appendix B for analytical data).

It is not known if the metals found in the groundwater below the site and the PAHs and phthalates found in the soil are due to the landfill.

DuPont reportedly disposed of only organic wastes at the landfill, except for foundry sand and the alumina present in waste Corian. Thus it is unknown if the landfill is a source of heavy metals contamination. The landfill is surrounded by many other industrial facilities which may have been the source of the contamination found.

Two groundwater samples taken by NUS in 1984 reportedly showed higher metals concentration in the downgradient well compared to the upgradient well (NUS 1984). There is, however, no supporting evidence indicating which well is downgradient (flow direction can not be accurately determined with only two wells). If groundwater flow is toward the Niagara River (ECDEP 1982), neither is downgradient as they

Table 4-1

PRIORITY POLLUTANT CHEMICALS IN SOILS AT
E.I. DUPONT SITE, TONAWANDA, NEW YORK

- Fluoranthene
- Naphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Chrysene
- Phenathrene
- Pyrene
- Dibenzofuran
- 2-Methylnaphthalene
- Methylene chloride
- Acetone
- Indeno(1,2,3-cd)pyrene
- Benzo(ghi)perylene
- Di-n-butyl phthalate
- Bis(2-ethylhexyl)phthalate
- Acenaphthylene
- Benzyl butyl phthalate
- 2-Chloronaphthalene
- Carbon disulfide
- Benzene
- 1,1-Dichloroethene
- Toluene
- Endrin
- V-BHC (lindane)

Source: Koszalka *et al*. 1985.

are equidistant from the river. Additionally, these samples were taken from the deep bedrock aquifer, which is presumably hydraulically isolated from the landfill by nearly impermeable lacustrine clays.

Likewise, the waste materials in the landfill would not likely contain the PAHs found in the soil. These contaminants, common in inhabited or industrial areas, may represent background concentrations.

5. PRELIMINARY APPLICATION OF HAZARD RANKING SYSTEM

5.1 NARRATIVE SUMMARY

The E.I. DuPont site is a 30- to 40-acre landfill located in a highly industrialized area in the Town of Tonawanda, Erie County, New York (see Figure 5-1). E.I. DuPont manufactures simulated marble sheets, sinks, and monolithic sink/countertop units. The landfill is owned and was operated by E.I. DuPont DeNemours Company from 1928 to 1978. A 10- to 12-acre parcel of the landfill area has been sold to General Motors and is now used as a parking lot.

E.I. DuPont disposed of the following wastes in six pits 15 to 20 feet deep:

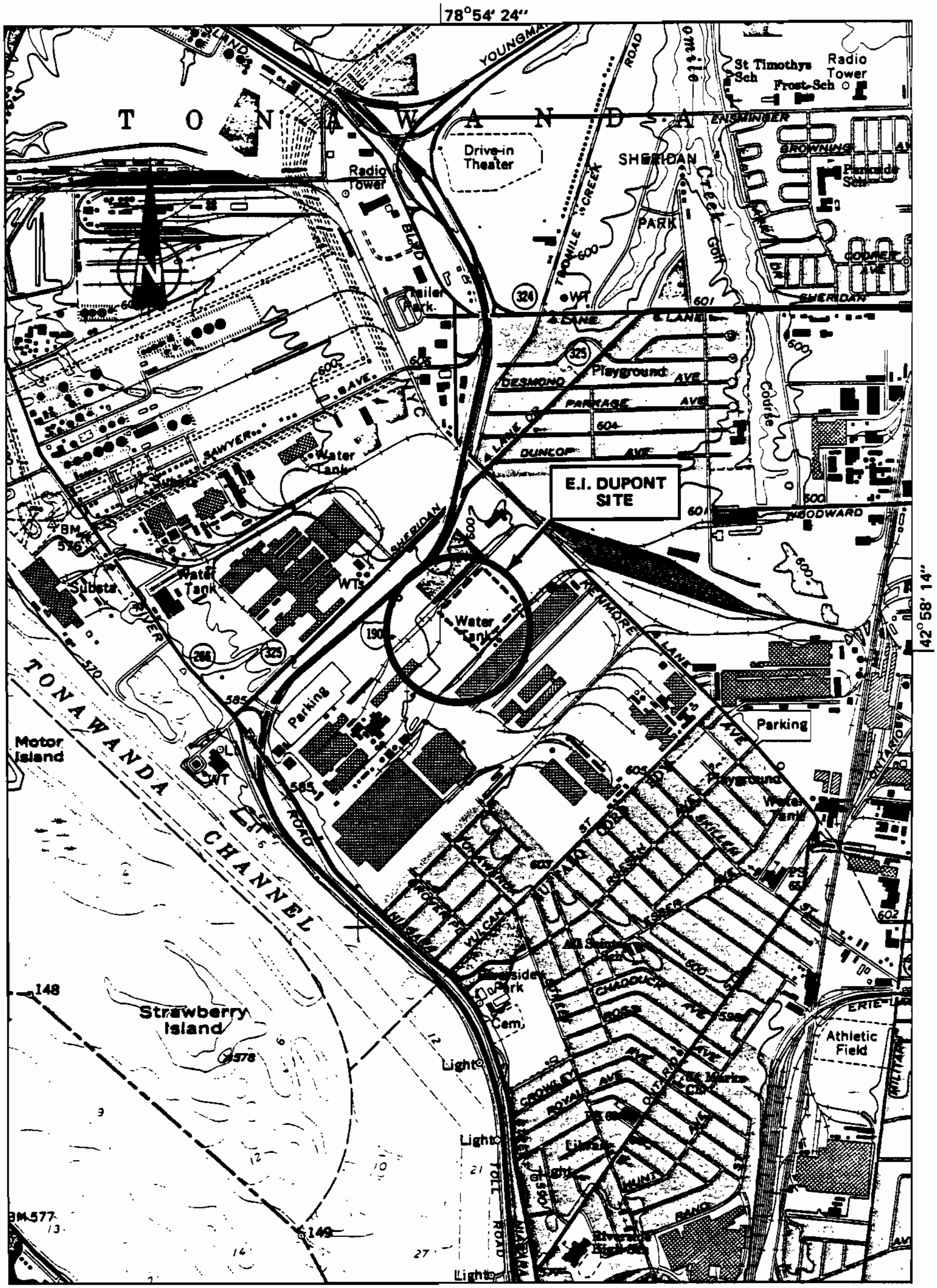
o Cellulosic viscose, cellophane, rayon, and sponges	80,000 tons
o Dry Corian wastes	5,000 tons
o Wet Corian wastes (in drums)	1,500 tons
o Methyl methacrylate, methylene chloride, inert filler	1,500 tons
o Polyvinyl alcohol film	100 tons
o Vexar netting	1,500 tons
o Tedlar with dimethylacetamide	1,000 tons
o Tedlar polyvinyl fluoride film	750 tons

Nylon Shutters and Water Based Paint	75 tons
Laboratory Chemicals	1 ton

According to tests conducted by E.I. DuPont, USGS, USEPA, and ECDEP, the groundwater is contaminated with sulfate and chloride as well as soluble barium, arsenic, lead, mercury, selenium, chromium, cobalt, and nickel. The soil was found to contain detectable levels of many polynuclear aromatic hydrocarbons (PAHs) and phthalates, as well as some pesticides and aromatic compounds.

The site is located in the Erie-Ontario lowland physiographic province which is an area of low relief. The surface elevation of the site is approximately 600 feet above mean sea level. The surrounding industrial area is generally flat-lying with less than 1% slope. The Niagara River (Tonawanda Channel) is located approximately 0.75 mile from the waste area to the southwest. The site is approximately 0.6 mile southwest of a 30-acre state wetland (Sawyer Avenue Wetland), 1.5 miles east of a 9-acre state wetland (East River Wetland), and 1.3 miles northeast of a 20-acre island designated as a sensitive habitat (Strawberry Island). Approximately 110,843 people live within a 3-mile radius of the landfill. The primary water source for the area is the Niagara River, with water intakes located 1 mile west, 1.5 miles southwest, and 3 miles west of the site.

No known legal action has been taken against the owners of the E.I. DuPont landfill site.



SOURCE: USGS 7.5 Minute Series (Topographic) Quadrangle: Buffalo NW, NY–ONT, 1965.

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

Figure 5–1 LOCATION MAP

FIGURE 1

HRS COVER SHEET

Facility Name: E.I. DuPont Company

Location: Sheridan Drive and River Road, Tonawanda, New York

EPA Region: II

Person(s) in Charge of Facility: Dr. Leonard Amborski, CIH

Sheridan Drive, Station B

Buffalo, New York 14207

Name of Reviewer: Gene Florentino Date: 8/9/87

General Description of the Facility:

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

The E.I. DuPont Company is a 90-acre facility in Tonawanda, New York of which 30 to 40 acres were used as a waste disposal area. The area contains 6 pits, 15 to 20 feet deep, comprising 6 to 8 acres of total area and contains the following wastes: cellulosic viscose, cellophane rayon and sponges (80,000 tons); Dry Corian wastes (5,000 tons): Wet Corian wastes (1,500 tons in drums); methyl methacrylate/methylene chloride/inert filler (1,500 tons in drums); polyvinyl alcohol film (100 tons); vexar netting (1,500 tons); Tedlar with dimethylacetamide (1,000 tons); Tedlar polyvinyl fluoride film (750 tons); nylon shutters and water based paint (75 tons); and laboratory chemicals (1 ton). The contamination route of major concern is shallow groundwater migration to the Niagara River.

Scores: $S_M = 24.99$ ($S_{gw} = 4.32$ $S_{sw} = 43.01$ $S_a = 0$)

S_{FE} = Not Scored.

$S_{DC} = 0$

D1721

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	[✓ 0] 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line $\boxed{4}$. If observed release is given a score of 0, proceed to line $\boxed{2}$.					
$\boxed{2}$ Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 [✓ 3]	2	6	6	
Net Precipitation	0 1 [✓ 2] 3	1	2	3	
Permeability of the Unsaturated Zone	[✓ 0] 1 2 3	1	0	3	
Physical State	0 1 2 [✓ 3]	1	3	3	
Total Route Characteristics Score			11	15	
$\boxed{3}$ Containment	0 1 2 [✓ 3]	1	3	3	3.3
$\boxed{4}$ Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 [✓ 18]	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 [✓ 7] 8	1	7	8	
Total Waste Characteristics Score			25	26	
$\boxed{5}$ Targets					3.5
Ground Water Use	0 [✓ 1] 2 3	3	3	9	
Distance to Nearest Well/Population Served	[✓ 0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			2475	57,330	
$\boxed{7}$ Divide line $\boxed{6}$ by 57,330 and multiply by 100		S_{gw} =	4.32		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	[✓ 0] 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	[✓ 0] 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 [✓ 2] 3	1	2	3	
Distance to Nearest Surface Water	0 1 [✓ 2] 3	2	4	6	
Physical State	0 1 2 [✓ 3]	1	3	3	
	Total Route Characteristics Score		9	15	
3 Containment	0 1 2 [✓ 3]	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 [✓ 18]	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 [✓ 7] 8	1	7	8	
	Total Waste Characteristics Score		25	26	
5 Targets					4.5
Surface Water Use	0 1 2 [✓ 3]	3	9	9	
Distance to a Sensitive Environment	0 [✓ 1] 2 3	2	2	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 [✓ 30] 32 35 40	1	30	40	
	Total Targets Score		41	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			27675	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	43.01		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	[✓ 0] 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line $\boxed{1}$ is 0, the S_a = 0. Enter on line $\boxed{5}$. If line $\boxed{1}$ is 45, then proceed to line $\boxed{2}$.					
$\boxed{2}$ Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
$\boxed{3}$ Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$			0	35,100	
$\boxed{5}$ Divide line $\boxed{4}$ by 35,100 and multiply by 100		S_a =	0		

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	4.32	18.66
Surface Water Route Score (S_{sw})	43.01	1849.86
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$	▨	1868.52
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$	▨	43.23
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$	▨	24.99

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Containment	1 3	1		3	7.1
$\boxed{2}$ Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
$\boxed{3}$ Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
	Total Targets Score			24	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$				1,440	

$\boxed{5}$ Divide line $\boxed{4}$ by 1,440 and multiply by 100 S_{FE} = Not scored

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Incident	[✓ 0] 45	1	0	45	8.1
If line $\boxed{1}$ is 45, proceed to line $\boxed{4}$ If line $\boxed{1}$ is 0, proceed to line $\boxed{2}$					
$\boxed{2}$ Accessibility	[✓ 0] 1 2 3	1	0	3	8.2
$\boxed{3}$ Containment	0 [✓ 15]	1	15	15	8.3
$\boxed{4}$ Waste Characteristics Toxicity	0 1 2 [✓ 3]	5	15	15	8.4
$\boxed{5}$ Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 [✓ 4] 5	4	16	20	
Distance to a Critical Habitat	[✓ 0] 1 2 3.	4	0	12	
Total Targets Score			16	32	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			0	21,600	
$\boxed{7}$ Divide line $\boxed{6}$ by 21,600 and multiply by 100	S_{DC} =		0		

FIGURE 12
DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

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

Facility Name: E.I. DuPont Company

Location: River Road, Tonawanda, New York

Date Scored: October 9, 1987

Person Scoring: Gene Florentino

Primary Source(s) of Information (e.g., EPA region, state, FIT, etc.):

USEPA Region II, New York, New York: Preliminary Assessment 5/17/83; Site Inspection Report 12/14/84

ECDEP, Buffalo, New York: Hazardous Waste Inactive Site Survey Phase I Report 2/82

NYSDEC, Region 9, Buffalo, New York: File Information

E & E, Inc., Buffalo, New York: Site Inspection 9/24/87

Factors Not Scored Due to Insufficient Information:

Comments or Qualifications:

Fire and explosion not scored as site has not been declared a fire hazard by a fire marshal.

GROUNDWATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (3 maximum):

Barium (others detected: arsenic, chromium, cobalt, nickel, selenium, sulfates,
Mercury chlorides).
Lead Ref. Nos. 1, 2, 3

Rationale for attributing the contaminants to the facility:

Except for small quantities of paint and foundry sand, only organic wastes were reportedly disposed of at this site. Thus contaminants are not positively attributable to this site. Ref. No. 3 states a release was observed, but the wells cited as source of observation have not been established as being up and down gradient of the site.
Ref. Nos. 1, 2, 3

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Shallow unconsolidated deposits
Ref. No. 1

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

6.5 feet
Ref. No. 1

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

15-20 feet
Ref. No. 2

Net Precipitation

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

34 inches
Ref. No. 9

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

27 inches
Ref. No. 9

Net precipitation (subtract the above figures):

7 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Lacustrine clay
Ref. No. 14

Permeability associated with soil type:

10^{-8} cm/sec
Ref. No. 1

Physical State

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

Solid/unconsolidated/wet
Liquid
Ref. Nos. 1, 3, 5, 6, 17

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None employed - wastes placed directly in excavated pits
Ref. No. 2

Method with highest score:

Landfill, no liner
Ref. No. 9

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Polymethylmethacrylate, methyl methacrylate, methylene chloride aluminum oxide, polyethylene, polypropylene, polyvinyl fluoride, PAHs including benzopyrene
Ref. Nos. 2, 3, 17

Compound with highest score:

Benzopyrene
Ref. No. 9

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):

1,500 tons of methyl methacrylate/methylene chloride waste.
Ref. No. 17

Basis of estimating and/or computing waste quantity:

Methyl methacrylate and methylene chloride are toxic hazardous wastes. Cellulosic-viscose, rayon, cellophane, corian (polymethylmethacrylate and aluminum oxide), Vexar (polyethylene polypropylene), Tedlar (polyvinyl fluoride), nylon, and water based paints are not hazardous chemicals. Laboratory chemicals and foundry sand may be hazardous. PAHs at less than 1 ppm are expected background concentrations in inhabited areas.
Ref. Nos. 3, 5, 6, 17

* * *

5. TARGETS

Groundwater Use

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

Industrial use, other sources available
Ref. No. 3

Distance to Nearest Well

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

Seven monitoring wells present on site
Ref. No. 1

Distance to above well or building:

Present on site
Ref. No. 1

Population Served by Groundwater 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 only known wells, according to references, are monitoring wells which have no users.):

0
Ref. Nos. 3, 7

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):

NA

Total population served by groundwater within a 3-mile radius:

0
Ref. Nos. 2, 3, 7

SURFACE WATER ROUTE

1. OBSERVED RELEASE

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

No samples taken, none reported

Rationale for attributing the contaminants to the facility:

N/A

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0-3%
Ref. No. 8

Name/description of nearest downslope surface water:

Niagara River
Ref. No. 8

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

0.75%
Ref. No. 8

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

No
Ref. No. 8

Is the facility completely surrounded by areas of higher elevation?

No
Ref. No. 8

1-Year 24-Hour Rainfall in Inches

2.1
Ref. No. 9

Distance to Nearest Downslope Surface Water

4,000 ft.
Ref. No. 8

Physical State of Waste

Solids/unconsolidated/wet
Liquids
Ref. Nos. 1, 3, 5, 6

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill covered with foundry sands
No diversion system present
Ref. Nos. 2, 8, 10

Method with highest score:

Landfill not covered and no diversion system
Ref. No. 9

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Polymethylmethacrylate, methyl methacrylate, methylene chloride, aluminum oxide, polyethylene, polypropylene, polyvinyl fluoride, PAHs including benzopyrene
Ref. Nos. 2, 3, 17

Compound with highest score:

Benzopyrene
Ref. No. 9

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):

1,500 tons of methyl methacrylate/methylene chloride waste.
Ref. No. 17

Basis of estimating and/or computing waste quantity:

Methyl methacrylate and methylene chloride are toxic hazardous wastes. Cellulosic-viscose, rayon, cellophane, corian (polymethylmethacrylate and aluminum oxide), Vexar (polyethylene polypropylene), Tedlar (polyvinyl fluoride), nylon, and water based paints are not hazardous chemicals. Laboratory chemicals and foundry sand may be hazardous. PAHs at less than 1 ppm are expected background concentrations in inhabited areas.
Ref. Nos. 3, 5, 6, 17

* * *

5. TARGETS

Surface Water Use

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

Niagara River is used for drinking water, recreation, fishing
Ref. Nos. 7, 11

Is there tidal influence?

No

Distance to a Sensitive Environment

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

NA
Ref. No. 8

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

0.6 mile northeast of the landfill
Ref. Nos. 8, 12

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

>1 mile
Ref. Nos. 8, 9, 12

Population Served by Surface Water

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

Erie County Water Authority - Van DeWater Intake: 1 mile west of landfill
Population served - 150,000
Ref. No. 16

Tonawanda Water District No. 1 Intake: 1.5 miles southwest of landfill
Population served - 91,269
Ref. No. 7

Grand Island Water District No. 2 Intake: 3 miles west of the landfill
Pop. served 9,390
Ref. No. 7

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

NA

Total population served:

250,659

Name/description of nearest of above water bodies:

Niagara River

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

Erie County Water Authority - Van Dewater Intake: 1 mile
Tonawanda Water District No. 1 Intake: 1.5 miles
Grand Island Water District No. 2 Intake: 3 miles
Ref. No. 7

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

None detected
Ref. Nos. 3, 10

Date and location of detection of contaminants:

N/A

Methods used to detect the contaminants:

HNu photoionizer
Ref. No. 10

Rationale for attributing the contaminants to the site:

N/A

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

1,500 tons of methyl methacrylate/methylene chloride waste.
Ref. No. 17

Basis of estimating and/or computing waste quantity:

Methyl methacrylate and methylene chloride are toxic hazardous wastes. Cellulosic-viscose, rayon, cellophane, corian (polymethylmethacrylate and aluminum oxide), Vexar (polyethylene polypropylene), Tedlar (polyvinyl fluoride), nylon, and water based paints are not hazardous chemicals. Laboratory chemicals and foundry sand may be hazardous. PAHs at less than 1 ppm are expected background concentrations in inhabited areas.
Ref. Nos. 3, 5, 6, 17

* * *

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

9,395
Ref. No. 13

Distance to a Sensitive Environment

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

N/A
Ref. No. 8

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

0.6 mile northeast of the landfill
Ref. Nos. 8, 12

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

Greater than 1 mile
Ref. Nos. 8, 9, 12

Land Use

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

Adjacent on southeast
Ref. Nos. 8 and 10

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

N/A
Ref. No. 8

Distance to residential area, if 2 miles or less:

0.2 mile
Ref. No. 10

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

N/A
Ref. No. 14

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

N/A
Ref. No. 14

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

N/A
Ref. No. 15

FIRE AND EXPLOSION

1. CONTAINMENT

Section not scored. Site has not been declared a fire hazard by a fire marshal.

Hazardous substances present:

None detected
Ref. Nos. 3 and 10

Type of containment, if applicable

N/A

* * *

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

1,500 tons of methyl methacrylate/methylene chloride waste.
Ref. No. 17

Basis of estimating and/or computing waste quantity:

Methyl methacrylate and methylene chloride are toxic hazardous wastes. Cellulosic-viscose, rayon, cellophane, corian (polymethylmethacrylate and aluminum oxide), Vexar (polyethylene polypropylene), Tedlar (polyvinyl fluoride), nylon, and water based paints are not hazardous chemicals. Laboratory chemicals and foundry sand may be hazardous. PAHs at less than 1 ppm are expected background concentrations in inhabited areas.
Ref. Nos. 3, 5, 6, 17

* * *

3. TARGETS

Distance to Nearest Population

200 ft (Chevrolet plant)
Ref. No. 8

Distance to Nearest Building

200 ft (Chevrolet plant)
Ref. No. 8

Distance to a Sensitive Environment

Distance to wetlands:

0.6 mile
Ref. No. 12

Distance to critical habitat:

N/A
Ref. No. 12

Land Use

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

Adjacent to southeast
Ref. Nos. 8 and 13

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

N/A
Ref. No. 12

Distance to residential area, if 2 miles or less:

0.2 mile
Ref. No. 8

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

N/A
Ref. No 14

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

N/A
Ref. No. 14

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

N/A
Ref. No. 15

Population Within 2-Mile Radius

36,608
Ref. No. 13

Buildings Within 2-Mile Radius

18,664
Ref. No. 13

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No incidents reported
Ref. Nos. 2, 3, 10, 12

* * *

2. ACCESSIBILITY

Describe type of barrier(s):

24 hour guarded gate
Ref. No. 10

* * *

3. CONTAINMENT

Type of containment, if applicable:

Landfill not adequately covered
Ref. No. 10

* * *

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Polymethylmethacrylate, methyl methacrylate, methylene chloride, aluminum oxide, polyethylene, polypropylene, polyvinyl fluoride, PAHs including benzopyrene
Ref. Nos. 2, 3, 17

Compound with highest score:

Benzopyrene
Ref. No. 9

* * *

5. TARGETS

Population within one-mile radius

9,395
Ref. No. 13

Distance to critical habitat (of endangered species)

1.3 miles
Ref. No. 12

REFERENCES

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

Reference Number	Description of the Reference
1	Koszalka, E.J., J.E. Paschal, Jr., T.S. Miller, and P.B. Duran, 1985, Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste-Disposal Sites, prepared for the United States Environmental Protection Agency by the United States Geological Survey, Chicago, Illinois. Document location: E & E, Buffalo, NY.
2	Erie County Department of Environment and Planning, 1982, Hazardous Waste Inactive Site Survey Phase I Report, Division of Environmental Control Solid Waste Section, Buffalo, New York. Document location: ECDEP, Buffalo, NY.
3	Ryder, C., December 14, 1984, personal communication, Project Manager, NUS Corporation, Edison, New Jersey, Final Draft, Site Inspection Report and Hazardous Ranking System Model, E.I. DuPont, Tonawanda, New York, prepared for the United States Environmental Protection Agency, Region II, Edison, New Jersey. Document location: E & E, Buffalo, NY.
4	Sax, N.I., 1982, Dangerous Properties of Industrial Materials, Van Nostrand Reinhold Company, New York, New York. Document location: E & E, Buffalo, NY.
5	O'Neill, M., May 17, 1983, personal communication, NUS Corporation, Edison, New Jersey, Potential Hazardous Waste Site Preliminary Assessment, prepared for the United States Environmental Protection Agency, Region II, Edison, New Jersey. Document location: E & E, Buffalo, NY.
6	New York State Department of Environmental Conservation, 1986, Inactive Hazardous Waste Disposal Sites in New York State, Volume 9, Division of Solid and Hazardous Waste, Albany, New York. Document location: E & E, Buffalo, NY.
7	New York State Department of Health, 1982, New York State Atlas of Community Water System Sources 1982, Division of Environmental Protection, Bureau of Public Water Supply Protection, Albany, New York. Document location: E & E, Buffalo, NY.
8	United States Geological Survey, 1965, 7.5 Minute Series (Topographic), Buffalo, NW, NY - Ont. Quadrangle, Erie County, New York. Document location: E & E, Buffalo, NY.
9	United States Environmental Protection Agency, 1984, Uncontrolled Hazardous Waste Site Ranking System; A Users Manual, National Oil and Hazardous Substances Contingency Plan, Appendix A (40 CFR 300) (47 FR 31219), July 16, 1982. Document location: E & E, Buffalo, NY.

Reference Number	Description of the Reference
10	Ecology and Environment, Inc., September 24, 1987, Site Inspection Notebook, Buffalo, New York. Document location: E & E, Buffalo, NY.
11	Evans, J., August 27, 1987, personal communication, New York State Department of Environmental Conservation, Division of Fish and Wildlife, Olean, New York. Document location: E & E, Buffalo, NY.
12	New York State Department of Environmental Conservation, 1987, State and Federal Regulated Wetland Maps and Critical Habitats Maps. Document location: E & E, Buffalo, NY.
13	General Sciences Corporation, 1986, Graphical Exposure Modeling System (GEMs), Volume 3, Graphics and Geodata Handling, prepared for USEPA Office of Pesticides and Toxic Substances Exposure Evaluation Division. Document location: E & E, Buffalo, NY.
14	Owens, D.W., W.L. Pittman, J.P. Wulforst, and W.E. Hanna, 1986, Soil Survey of Erie County, New York, United States Department of Agriculture, Soil Conservation Service, Ithaca, New York. Document location: E & E, Buffalo, NY.
15	Murtagh, W.J., 1976, The National Register of Historic Places, USDI National Park Service, Washington, D.C., with updates from the Federal Register in 1979, 1980, 1981 and 1982. Document location: E & E, Buffalo, NY.
16	Wruck, R., 1987, Erie County Water Authority, Van Dewater Station, personal interview concerning location of station, water intakes and population served. Document location: E & E, Buffalo, NY.
17	New York State Department of Environmental Conservation, 1985, RTK for E.I. DuPont site, Division of Hazardous Waste Remediation, Bureau of Hazardous Site Control, Albany, New York. Document location: E & E, Buffalo, NY.

D1721

REFERENCE NO. 1

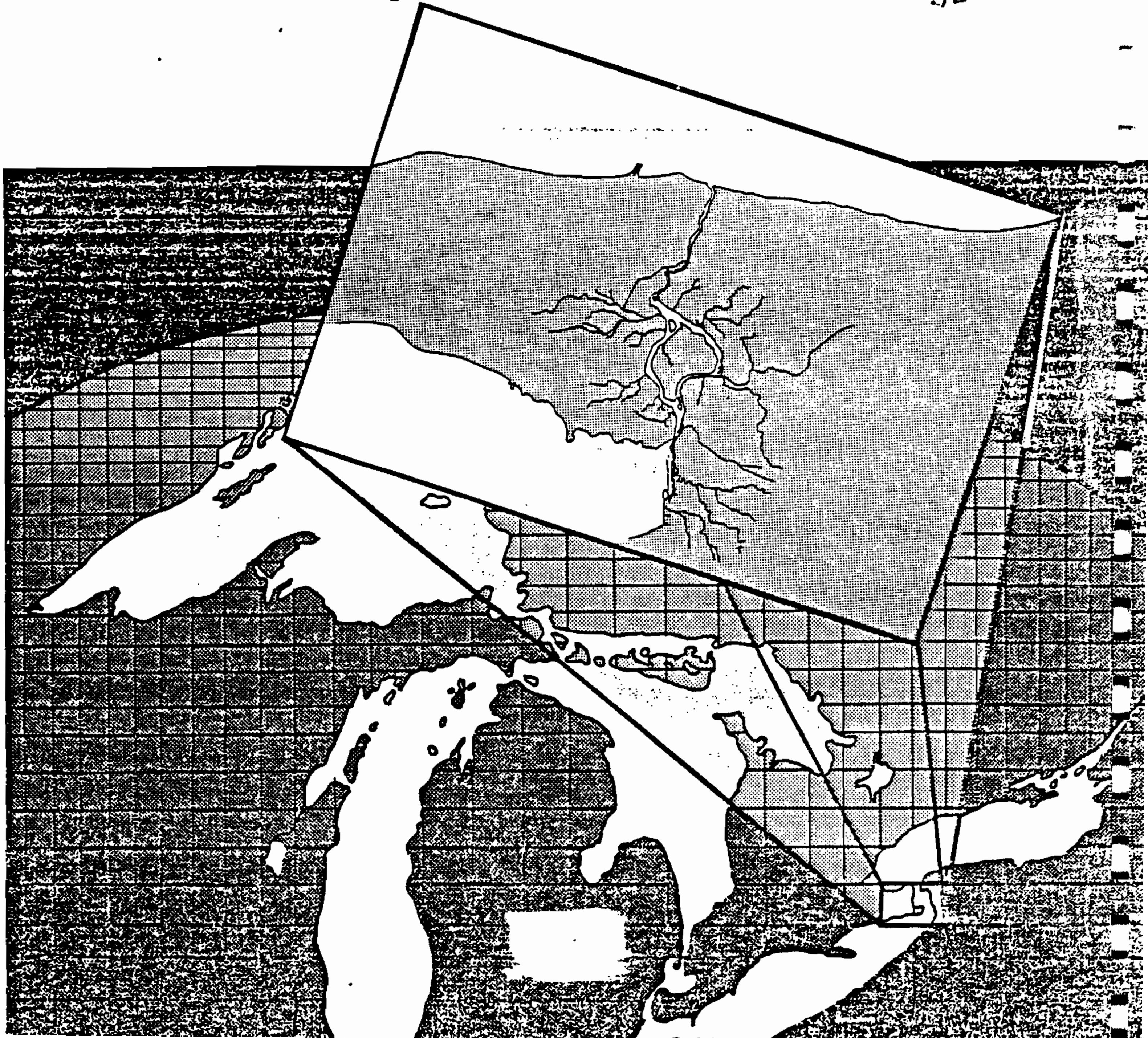
United States
Environmental Protection
Agency

Great Lakes National
Program Office
536 South Clark Street
Chicago, Illinois 60605

EPA-905/4-85-001
March 1985

EPA

Preliminary Evaluation Of Chemical Migration To Groundwater and The Niagara River from Selected Waste-Disposal Sites



"Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste-Disposal Sites"

By

Edward J. Koszalka, James E. Paschal, Jr.,

Todd S. Miller and Philip B. Duran

Prepared by the U.S. Geological Survey

in cooperation with the

New York State Department of Environmental Conservation

for the

U.S. ENVIRONMENTAL PROTECTION AGENCY

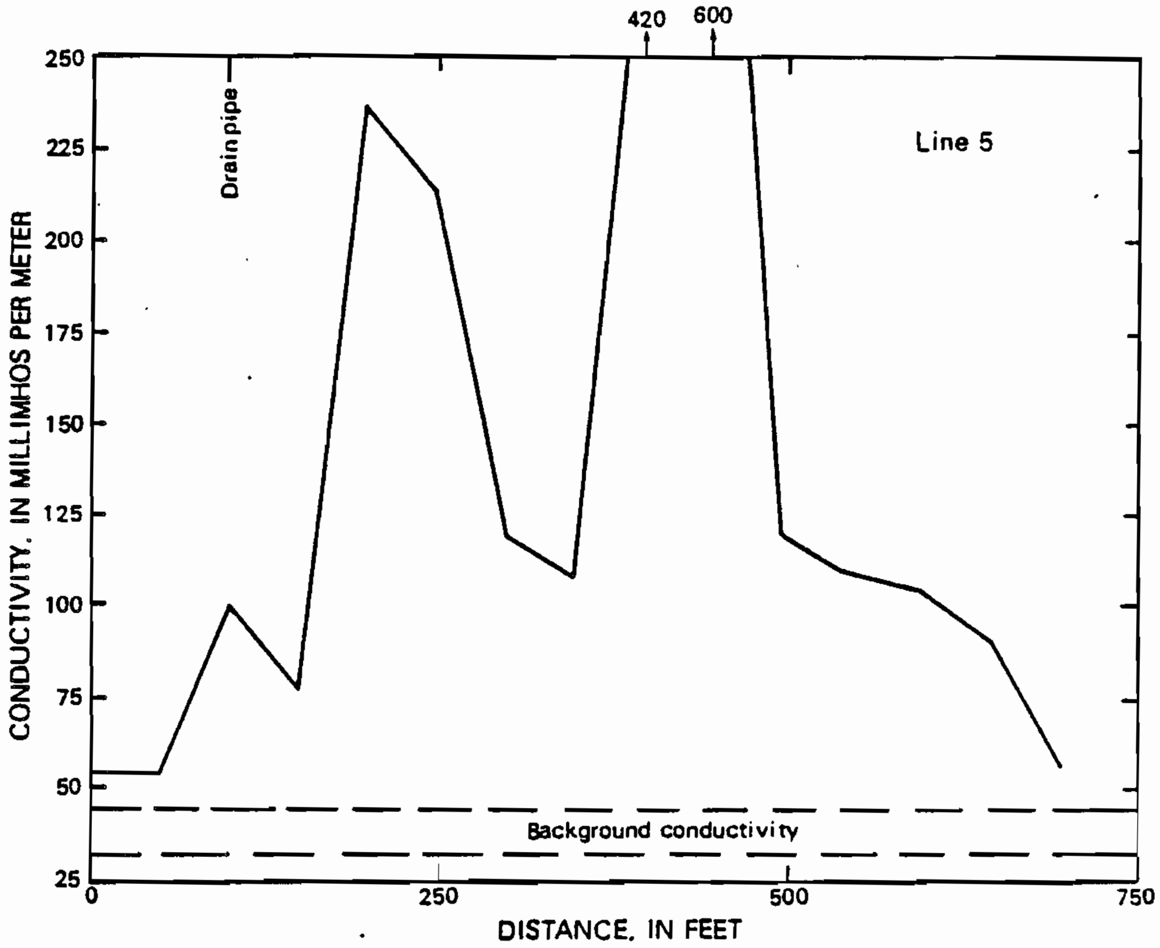


Figure B-19 (continued). Results of electromagnetic-conductivity survey at Dunlop Tire and Rubber Company, sites 125, 126, and 127, Tonawanda, line 5.

128. DUPONT COMPANY (USGS reconnaissance) NYSDEC 915019

General information and chemical-migration potential.--The Dupont Company site, in the town of Tonawanda, consists of six excavated pits that were filled with various materials during 1921-78. The types and quantity of buried material are as follows:

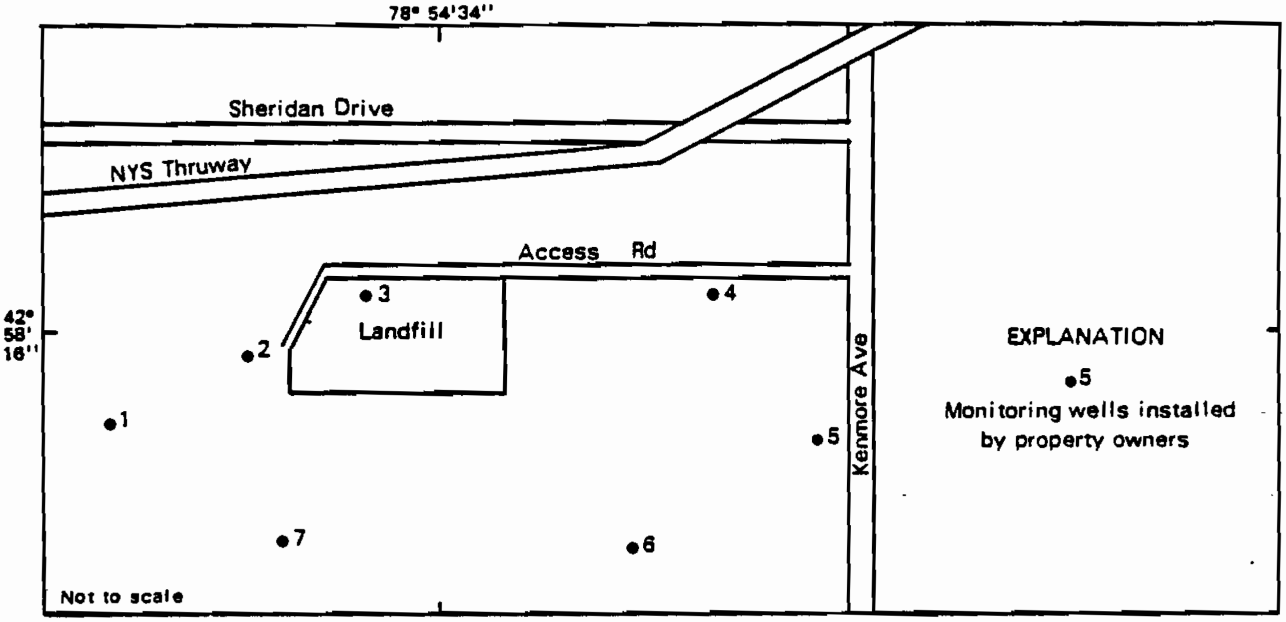
cellulosic-ulicose, rayon, cellophane, and sponges	80,000 tons
dry "Corian" waste	5,000 tons
polyvinyl alcohol film	100 tons
wet "Corian" waste	1,500 tons
"Vexar" netting	1,500 tons
dry "Tedlar" polyvinyl fluoride film	750 tons
"Tedlar" with dimethylacetamide	1,000 tons
nylon shutters and water-based paints	75 tons
miscellaneous laboratory chemicals and foundry sand from an automobile manufacturing plant	1 ton

Data collected in August 1982 indicate a limited potential for contaminant migration. No definite organic leachate plume is evident, but additional data would be needed to confirm its absence. If such a plume exists, its downward movement through the underlying clay would probably be slow. The potential for contaminant migration is indeterminable.

Geologic information.--The site consists of approximately 40 ft of glaciolacustrine clay overlying bedrock of Camillus Shale. The site owner drilled seven monitoring wells (fig. B-20), but no geologic logs are available.

Hydrologic information.--Water levels in six of the seven monitoring wells average 6.5 ft below land surface; in well 3, the water level was more than 20 ft below land surface.

Permeability tests were run on three samples of undisturbed clay. Results indicate relatively low permeability ranging from 1.08 x 10^{-8} to 1.60 x 10^{-8} cm/s.



Base from USGS field sketch, 1982

Figure B-20. Location of monitoring wells at Dupont Company, site 128, Tonawanda.

Chemical information.--Chemical analyses of water samples from monitoring wells by the site owner indicate that concentrations of sulfate, chloride, dissolved barium, dissolved lead, and dissolved mercury exceed the USEPA criterion for drinking water.

In August 1982, the U.S. Geological Survey sampled the seven wells for organic compounds; results are given in table B-21. Although no organic priority pollutants were detected, 30 nonpriority pollutants, 7 possibly naturally occurring compounds, and 1 possible artifact were detected.

Table B-21.—Analyses of ground-water samples from Dupont Company, site 128, Tonawanda, N.Y., August 18, 1982.
[Locations shown in fig. B-20. Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.]

	Sample number and depth below land surface (ft)				
	1 (5.3)	2 (4.1)	3 (21.0)	(duplicate)	4 (5.3)
pH	7.0	7.2	7.3		6.8
Specific conductance (µmho/cm)	4,900	6,700	1,000		3,125
Temperature (°C)	15.0	17.5	12.0		16.0
Organic compounds					
Nonpriority pollutants					
3,3-dimethylbutanoic acid[1]	--	--	--	(--)	7.5
1,3-dimethylbenzene[1]	--	--	--	(--)	LT
1,4-dimethylbenzene[1]	--	--	--	(--)	LT
1,1,2-trimethylcyclohexane[1]	--	--	--	(--)	15
1,2,3-trimethylcyclohexane[1]	--	--	--	(--)	6.6
2,2-dimethylcyclohexanone[1]	--	--	--	(--)	LT
2,3-dimethylcyclohexanone[1]	--	--	--	(--)	LT
3,4-dimethyl-2-hexanone[1]	--	--	--	(--)	18
3,4,5-trimethyl-2-cyclopenten-1-one[1]	--	--	--	(--)	LT
3-methyl-(Z)-2-hexene[1]	--	--	--	(--)	LT
3-methyl-(E)-1,3,5-hexatriene[1]	--	--	--	(--)	LT
2,3,4-Trimethyl-2-cyclopenten-1-one[1]	--	--	--	(--)	120
Benzothiazole[1]	--	--	--	(--)	LT
1,1,2-trimethylcyclopropane[1]	--	--	--	(--)	11
2-[2-(2-methoxyethoxy)ethoxy] ethanol[1]	--	--	--	(--)	9.6
4-butoxybutanoic acid[1]	--	--	--	(--)	LT
2-methylbenzene sulfonamide[1]	--	--	--	(--)	11
3-ethyl-2-methyl-1,3-hexadiene[1]	--	--	--	(--)	8.1
Compounds potentially of natural origin					
3-hexanone[1]	--	--	--	(--)	LT
2-hexanone[1]	--	--	--	(--)	LT
3-methyl-cyclopentanone[1]	--	--	--	(--)	LT
Possible artifact					
4-methyl-3-hepten-2-one[1]	--	--	--	(--)	LT

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

Table B-21.--Analyses of ground-water samples from Dupont Company, site 128, Tonawanda, N.Y., August 18, 1982 (continued)
[Locations shown in fig. B-20. Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.]

	Sample number and depth below land surface (ft)		
	5 (6.0)	6 (5.4)	7 (3.9)
pH	6.8	6.9	7.0
Specific conductance (µmho/cm)	1,680	700	6,600
Temperature (°C)	18.0	6.0	16.5
Organic compounds			
Nonpriority pollutants			
Bis-2,2'[methylenebis(oxy)] butane[1]	5	--	--
Phenol,2-methoxy,acetate[1]	LT	--	--
1-1(1,1'-dimethylethoxy)-4-methoxybenzene[1]	14	--	--
2,6-dimethyl-4-heptanone[1]	--	6	--
1-(1,1'-dimethlethyl)-4-methylbenzene[1]	--	5	--
2,6,10,15-tetramethylheptadecane[1]	--	7	--
2-methylbenzenamine[1]	--	--	185
Trans-4-chlorocyclohexanol[1]	--	--	21
1,3,3-trimethylbicyclo-[2.2.1]heptan-2-one[1]	--	--	12
1,7,7-trimethylbicyclo-[2.2.1] heptan-2-one[1]	--	--	7
1,3-Dihydro-2H-imidazo-[4,5-b]pyridin-2-one[1]	--	--	LT
Compounds potentially of natural origin			
Octacosane[1]	--	8	--
Hexacosane[1]	--	8	--
Tridecane[1]	--	LT	--
Hydrocarbon[1]	-	LT	--
5,7-dimethylundecane[1]	--	7	--

REFERENCE NO. 2

FILE

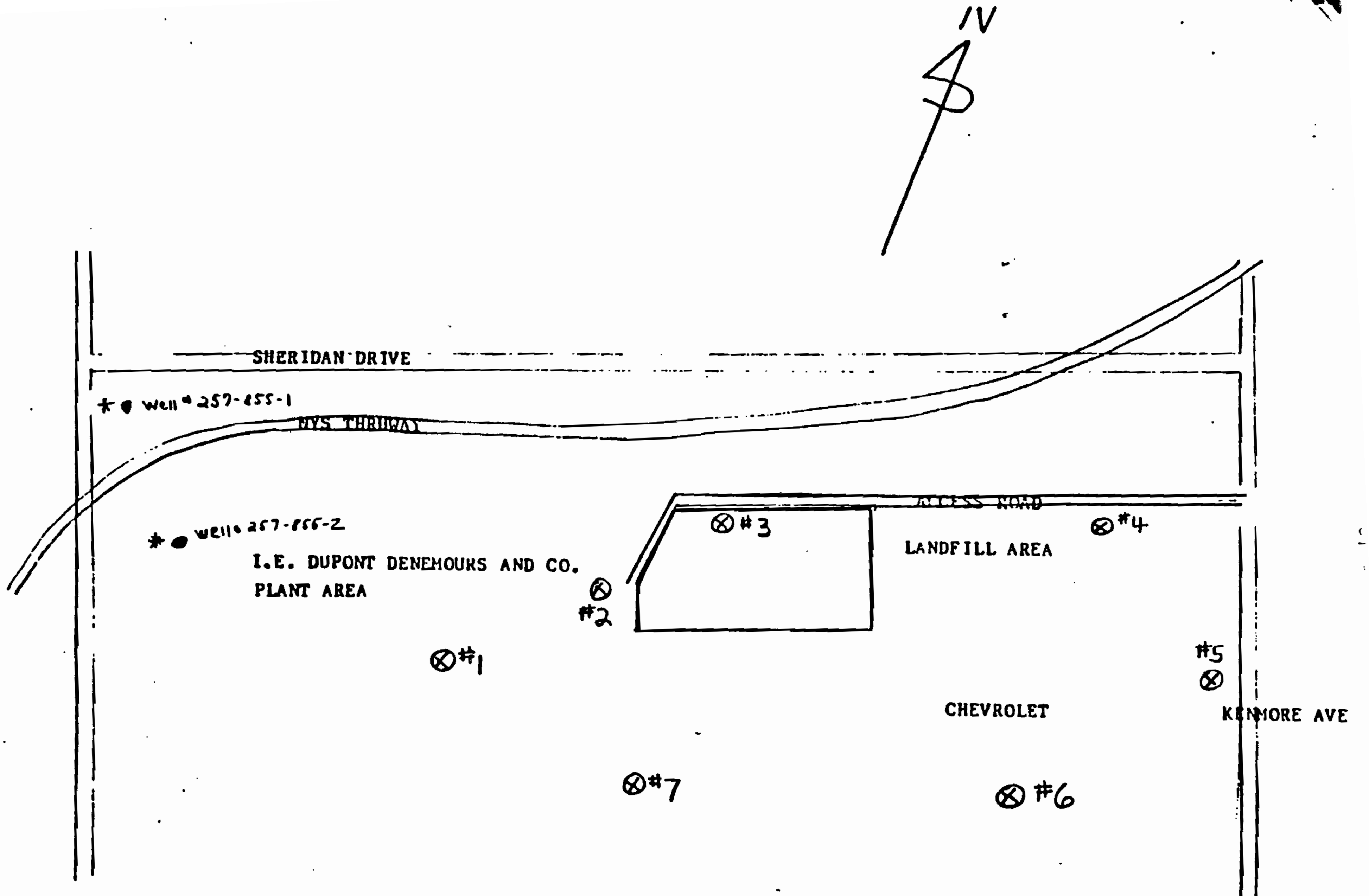
I.E. DUPONT DeNEMOURS COMPANY #915019

Review of the available photographs could not provide any additional information regarding the activities which occurred at the site or regarding the surrounding drainage. The firm has placed monitoring wells around the site at locations depicted in Exhibit 9. Analytical results of samples taken from these wells show elevated concentrations for a number of parameters.

Dupont reported that they disposed of waste "Corion", "Tedlar", "Vexar", rayon, cellophane and polyvinylalcohol film in 15-20 foot deep pits at this site over an area of 30-40 acres. Foundry sand was used as a cover material for a large portion of the site. A 10-12 acre parcel of the landfill area has since been sold to General Motors and is now utilized as a parking lot. The natural clay into which the waste was placed has a permeability of 1.2 to 2.2 x 10-8 cm/sec. The impermeable nature of this subsoil should preclude extensive leaching into groundwater from the disposal pits, however, sampling results to date suggest otherwise.

Dupont's analytical results indicated that New York State Groundwater Standards were being violated for Sulfate, Chloride, Soluable Arsenic, Sol. Selenium, Sol. Mercury, Sol.,Barium, and Sol. Lead. It should be noted that groundwater supplies are not used for domestic purposes in the study area.

We recommend that an in-depth investigation be conducted to identify the extent of pollutant migration from this site. Groundwater quality monitoring should be continued and expanded to include analysis for phenol because of the extensive amount of foundry sand apparently used as cover material.



⊗ APPROX. LOCATION OF MONITORING WELLS

FROM "GROUND WATER RESOURCES OF THE ERIE-NIAGARA BASIN" by U.S.G.S. AND N.Y.S. CONSERVATION DEPARTMEN
DIVISION OF WATER RESOURCES

EXHIBIT # 9
I.E. DuPont DeNemours Co.
NYSDEC Site Code # 915019
Area 30-[illegible] acres

HAZARD ANALYSIS

Site: #915019

Owner:

Dupont DeNemours and Company, Inc.
River Road
Tonawanda, New York
Station B, Drawer L
Buffalo, New York

Surrounding Land Use: Heavy industrial, nearest residential approximately 3/4 mile to the East, ¼ mile to the South, ¼ mile to the North, and greater than two (2) miles to the West.

Anticipated Effect of Disposal Site On:

Groundwater Drinking Supplies: Groundwater standards are exceeded but area served by surface source public water supply.

Surrounding Area: None - site is inactive and no adjacent residential uses.

Airborne Transport of Pollutants: None - site is graded and covered.

Need for Immediate Action: None

Groundwater: Sampling results indicate contamination of groundwater.

Need for Future Action: in depth investigation to identify extent of pollution migration from site.

Responsible Agency: DEC, follow-up investigation.
DuPont, continued monitoring from company wells.

In addition to the specific sites listed, 1973 boring logs associated with sewer construction along River Road from the foot of Aqua Lane to the northern end of the Roblin property indicated this area west of River Road received extensive cinder and slag fill. The depth of fill ranged from 1.5 to 12 feet. From thenature of the fill the simplest assumption would be that the cinders originated at the Huntley Power Station and slag from the former Wickwire Steel plant.

SOILS, BEDROCK AND GROUNDWATER

The General Soil Map and Interpretations for Erie County prepared by the USDA Soil Conservation Service provided little information regarding surficial soils. Generally the entire area under investigation, with the exception of a small portion classified as "glacial bed," was identified as "urban land" in the 1979 Report. The urban land classification indicates that very few undisturbed areas of original soil remain and intensive development has occurred.

Review of the boring data taken at sites along the River Road, at Dunlop Tire and Rubber, at Ashland Petroleum, at I.E. DuPont Co., and at the Niagara Landfill indicate that shale or limestone bedrock is found 60 to 90 feet below the ground surface. The bedrock is generally overlain by thick deposits of silty clay material. The URS Engineers have indicated that the silty clay subsoil has a pH value greater than 6.5.

These relatively impermeable soils should minimize the downward movement of contaminants to the bedrock or groundwater aquifer. The pH of the soil will reduce the rate of re-entry of contaminant metals as this occurs more rapidly in acidic soils.

Reliable depth to water table information was not available. Borings taken along River Road showed the water level varying between 3.5 and 16 feet below the surface. Given the data available, a true water table could not be determined. Data provided by the Dunlop Tire and Rubber Co. shows that a bedrock aquifer exists at a depth of approximately 35 to 40 feet. This aquifer was tapped as a water supply by the firm during the 1940's. The undeveloped land north of Sheridan Drive and west of Two Mile Creek Road contains wetland areas indicative of a year round water table at or near the surface. The engineering report prepared by Wehren Engineering Corporation for the Seaway Industrial Park Sanitary Landfill indicates that the permeability of the native subsoil would severely restrict the migration of pollutants from a fill into the groundwaters. Discussions with USGS personnel and Dr. Parker Calkin of SUNY/B Geology Dept. suggested a possible flow of groundwater from Niagara River into the bedrock water table. They also suggested limited vertical migration because of tight soil and that any leachate would probably break out to the surface.

AERIAL PHOTOGRAPHY

Aerial photographs of the areas under investigation were available for the years 1927, 1951, 1960, 1962 and 1972. The aerial photographs were especially useful in identifying surface drainage. Baseline characteristics were established in the 1927 photos. The photographs indicated that the area originally had a brushland/open meadow type of groundcover. Much of the area was freshwater wetland indicative of poorly drained soils. Prior to industrialization of the area all surface drainage in the study area was to the northwest via tributaries of Two Mile Creek. Following development, there was a distinct alteration of drainage. Drainage north of the I-190 approach to the Grand Island

Bridges continued to flow towards Two Mile Creek. South of the bridge approach, however, the drainage patterns have been directed to the Niagara River via manmade water courses. A continuous altering of these water courses was evident as development continued.

The present drainage can be described as serving two distinct land areas. That area north of the bridge approach continues to be served by a tributary of Two Mile Creek. Development in this section has eliminated a number of natural tributary streams which have been largely replaced with a series of ditches and/or outfalls leading to the tributary of Two The area south of the bridge approach has no distinctive drainage p Drainage in this area is believed to be directly to the Niagara River via ditches or runoff. Mostof the land east of the River Road which is presently undeveloped contains wetland areas.

Sfc wa

The Exhibits # 2, 3 and 4 are interpretations of 1960, 62 and 72 photographs. These show that most of the significant landfilling operations were located west of the River Road. It is believed that most of the area west of the River Road was low lying wetland considered "ideal" as a landfilling site during that time period.

Land use surrounding the area under investigation is primarily industrial. There is, however, a sizable concentration of homes in the midst of this highly industrialized zone. Outside of hiis residential area, the nearest home would be approximately 1/4 mile from a site of concern (915003-c to Dunlop Avenue). The entire area is served by a public water supply (T. of Tonawanda Niagara River as source) and to our knowledge there are no private drinking water wells in use.

priva wel

USGS

FILE → INDUSTRI
(DUPON

Station Name: Dupont of Tonawanda
Station Number: 128
Register Number: 915019

Sample Number

	①	②	D ③	S
Date collected	081882	081882	081882	081882
Depth (ft)	5.3	4.1	21.0	5.3
Sample Type[1]	gw	gw	gw	gw
pH	7.0	7.2	7.3	6.8
Conductivity (uMHOS)	4900	6700	1000	3125
Temperature (°C)	15.0	17.5	12.0	16.0
Inorganic Compounds[2]				
Antimony	-	-	-;-	-
Arsenic	-	-	-;-	-
Cadmium	-	-	-;-	-
Chromium	-	-	-;-	-
Copper	-	-	-;-	-
Iron	-	-	-;-	-
Lead	-	-	-;-	-
Mercury	-	-	-;-	-
Nickel	-	-	-;-	-
Selenium	-	-	-;-	-
Zinc	-	-	-;-	-
Flouride	-	-	-;-	-
Sulfide	-	-	-;-	-
Cyanide	-	-	-;-	-
Organic Compounds[2]				
NP 4-hydroxy-4-methyl-2-pentanone[7]	<1	-	-;-	<1
NP 3-hexanone[4]	-	-	-;-	2.8
NP 2-hexanone[4]	-	-	-;-	3.0
NP 3-methyl-cyclopentanone[4]	-	-	-;-	1.0

Non priority pollutant

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[1] Sample type: gw =ground water, sw =surface water, and s=substrate.
[2] Concentrations: ug/L for water and ug/Kg for substrate.
[3] Cu(D): analysis done by direct aspiration because of high iron concentration.
[4] Identity determined by library match; no standard available. Concentration results are semiquantitative and are based on the response factor of the internal standard.
[5] Identity based on less than library match; identification seemed reasonable. As for footnote 4, concentration results are semiquantitative.
[6] Volatile found in GC/ms extractions. Concentration results probably less than actual.
[7] Artifact.
[8] Estimated value less than detection limit.

Station Name: Dupont of Tonawanda (continued)
Station Number: 128
Register Number: 915019

		Sample Number			
		1	2	3	
	Organic Compounds[2] (cont'd)				
NP	3,3-dimethyl butanoic acid[5]	-	-	-;-	7.5
NP	1,3-dimethyl benzene [5]	-	-	-;-	<1
NP	1,4-dimethyl benzene [5]	-	-	-;-	<1
NP	4-methyl-3-hepten-2-one[5]	-	-	-;-	1.0
NP	1,1,2-trimethyl cyclohexane[4]	-	-	-;-	15
NP	1,2,3-trimethyl cyclohexane[5]	-	-	-;-	6.6
NP	2,2-dimethyl cyclohexanone[4]	-	-	-;-	3.9
NP	2,3-dimethylcyclohexanone[4]	-	-	-;-	1.3
NP	3,4-dimethyl-2-hexanone [5]	-	-	-;-	18
NP	3,4,5-trimethyl-2-cyclopenten-1-one [4]	-	-	-;-	4.0
mp	3-methyl-,(Z)-2-hexene[5]	-	-	-;-	3.6
mp	3-methyl-,(E)-1,3,5-hexatriene [5]	-	-	-;-	2.8
mp	2,3,4-Trimethyl-2-cyclopenten-1-one[4]	-	-	-;-	120
mp	Benzothiazole [5]	-	-	-;-	1.6
mp	1,1,2-trimethyl cyclopropane[5]	-	-	-;-	11
mp	2-[2-(2-methoxyethoxy)ethoxy] ethanol [5]	-	-	-;-	9.6
mp	4-butoxy butanoic acid [5]	-	-	-;-	1.0
mp	2-methyl-benzene sulfonamide[4]	-	-	-;-	11
mp	3-ethyl-2-methyl-1,3-hexadiene [5]	-	-	-;-	8.1

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[1] Sample type: gw =ground water, sw =surface water, and s=substrate.
[2] Concentrations: ug/L for water and ug/Kg for substrate.
[3] Cu(D): analysis done by direct aspiration because of high iron concentration.
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[6] Volatile found in GC/ms extractions. Concentration results probably less than actual.
[7] Artifact.
[8] Estimated value less than detection limit.

Station Name: Dupont of Tonawanda (continued)
Station Number: 128
Register Number: 915019

	Sample Number			
	4	5	6	7
Date collected	081882	081882	081882	081882
Depth (ft)	6.0		5.4	3.9
Sample Type[1]	gw		gw	gw
pH	6.8		6.9	7.0
Conductivity (uMHOS)	1680		7700	6600
Temperature (°C)	18.0		16.0	16.5
Inorganic Compounds[2]				
Antimony	-	-	-	-
Arsenic	-	-	-	-
Cadmium	-	-	-	-
Chromium	-	-	-	-
Copper	-	-	-	-
Iron	-	-	-	-
Lead	-	-	-	-
Mercury	-	-	-	-
Nickel	-	-	-	-
Selenium	-	-	-	-
Zinc	-	-	-	-
Flouride	-	-	-	-
Sulfide	-	-	-	-
Cyanide	-	-	-	-
Organic Compounds[2]				
2,2'[methylenebis(oxy)] bis-butane[5]	5		-	-
Phenol,2-methoxy,acetate[5]	4		-	-
1-(1,1'-dimethylethoxy)-4-methoxy benzene[5]	14		-	-
2,6-dimethyl-4-heptanone[5]	-		6	-
1-(1,1'-dimethylethyl)-4-methylbenzene[5]	-		5	-
5,7-dimethylundecane[5]	-		7	-
Octacosane[5]	-		8	-
2,6,10,15-tetramethylheptadecane[5]	-		7	-

[1] Sample type: gw =ground water, sw =surface water, and s=substrate.

[2] Concentrations: ug/L for water and ug/Kg for substrate.

[3] Cu(D): analysis done by direct aspiration because of high iron concentration.

[4] Identity determined by library match; no standard available. Concentration results are semiquantitative and are based on the response factor of the internal standard.

[5] Identity based on less than library match; identification seemed reasonable. As for footnote 4, concentration results are semiquantitative.

[6] Volatile found in GC/ms extractions. Concentration results probably less than actual.

[7] Artifact.

[8] Estimated value less than detection limit.

Station Name: Dupont of Tonawanda (continued)
Station Number: 128
Register Number: 915019

	Sample Number 4	5	6	7
Organic Compounds[2] (continued)				
mp Hexacosane [5]	-		8	-
np Tridecane [5]	-		4	-
mp Hydrocarbon [5]	-		4	-
mp 2-methylbenzenamine[5]	-		-	185
mp Trans-4-chlorocyclo-hexanol [5]	-		-	21
mp 1,3,3-trimethylbicyclo-[2.2.1] heptan-2-one[5]	-		-	12
mp 1,7,7-trimethylbicyclo [2.2.1] heptan-2-one[5]	-		-	7
mp 1,3-Dihydro-2H-imidazo [4,5-b] pyridin-2-one[5]	-		-	2

mp = LAB IN BOSTON

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[1] Sample type: gw =ground water, sw =surface water, and s=substrate.
[2] Concentrations: ug/L for water and ug/Kg for substrate.
[3] Cu(D): analysis done by direct aspiration because of high iron concentration.
[4] Identity determined by library match; no standard available. Concentration results are semiquantitative and are based on the response factor of the internal standard.
[5] Identity based on less than library match; identification seemed reasonable. As for footnote 4, concentration results are semiquantitative.
[6] Volatile found in GC/ms extractions. Concentration results probably less than actual.
[7] Artifact.
[8] Estimated value less than detection limit.

May 30, 1980

Dr. Leonard E. Amborski, CIH
E. I. du Pont de Nemours & Co., Inc.
Yerkes Plant
Station B, Drawer L
Buffalo, NY 14207

Re: Analytical Results

Dear Dr. Amborski:

Please find enclosed Recra Research, Inc.'s results of the analyses of water samples received at our laboratories on April 16 and April 17, 1980.

At the time of sampling, a request was made for additional analyses to be performed at a specific sampling station. Unfortunately, volatile vials were not available for proper collection of the sample. Arrangements have been made to collect additional sample; however, those results will not be included in this data report.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

James A Ploscyca/RJW

James A. Ploscyca
Laboratory Manager

RVF/JAP/skb
Enclosure

I.D.#356
360

RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
recycled paper
ecology and environment

ANALYTICAL RESULTS

E. I. DU PONT DE NEMOURS & COMPANY, INC.

Report Date: 5/30/80
Sample Date: 4/16/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)				
		1D 4/16/80	2D 4/16/80	3D 4/16/80	4D 4/16/80	5D 4/16/80
pH	Standard Units	11.35	12.26	8.08	10.68	8.80
Conductance	µmhos/cm^2	3,490	5,360	3,200	3,010	2,940
Total Organic Carbon	mg/l	13	11	16	25	490
Chemical Oxygen Demand	mg/l	64.7	77.0	85.2	85.2	1,550
Biochemical Oxygen Demand (5 day)	mg/l	<10	<10	15	23	250
Total Filterable Residue (103°C)	mg/l	2,400	1,900	3,000	2,200	2,100
Sulfate	mg/l	1,800	730	2,000	1,800	1,200
Chloride	mg/l	92.8	83.4	73.0	200	160
Total Kjeldahl Nitrogen	mg N/l	3.8	2.7	2.6	79	39
Ammonia	mg N/l	2.1	0.75	1.2	7.1	7.6
Nitrate	mg N/l	1.0	0.52	0.45	3.1	0.93
Soluble Arsenic	µg/l	<2	<2	<2	<2	<2
Soluble Selenium	µg/l	<1	<1	<1	<1	<1
Soluble Silver	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
Soluble Cadmium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Soluble Mercury	µg/l	<1	<1	<1	<1	<1
Soluble Chromium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Soluble Barium	mg/l	0.8	1.0	1.0	0.8	0.5
Soluble Lead	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02
Halogenated Organic Scan (Coulson's)	µg/l as Chlorine; Lindane Standard	<1	<1	2.9	<1	2.6

COMMENTS: Comments pertain to data on one or all pages of this report. Samples were collected by Recra personnel on 4/16/80 and 4/17/80. Values reported as "less than" indicate the working detection limit for the particular sample or parameter.

FOR RECRA RESEARCH, INC. ____________

DATE 6/13/80

ANALYTICAL RESULTS

E. I. DU PONT DE NEMOURS & COMPANY, INC.

Report Date: 5/30/80
Sample Date: 4/16/80 - 4/17/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)				
		6D 4/16/80	7D 4/16/80	1S 4/17/80	2S 4/17/80	3S 4/17/80
pH	Standard Units	9.75	9.65	7.36	7.30	7.41
Conductance	μmhos/cm^2	3,590	3,180	3,200	4,990	1,980
Total Organic Carbon	mg/l	110	22	90	28	27
Chemical Oxygen Demand	mg/l	290	85.2	320	220	150
Biochemical Oxygen Demand (5 day)	mg/l	7.6	16	18	16	16
Total Filterable Residue (103°C)	mg/l	3,200	2,100	1,800	4,100	1,200
Sulfate	mg/l	2,200	1,500	290	1,100	210
Chloride	mg/l	190	64	549	888	11.5
Total Kjeldahl Nitrogen	mg N/l	300	7.1	6.9	4.6	4.5
Ammonia	mg N/l	77	6.1	5.2	4.2	4.0
Nitrate	mg N/l	1.5	0.58	0.62	0.62	0.15
Soluble Arsenic	μg/l	<2	<2	<2	<2	5.0 X
Soluble Selenium	μg/l	<1	<1	<1	<1	<1
Soluble Silver	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
Soluble Cadmium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Soluble Mercury	μg/l	<1	<1	<1	<1	<1
Soluble Chromium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Soluble Barium	mg/l	1.2	0.9	0.7	1.0	0.6
Soluble Lead	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02
Halogenated Organic Scan (Coulson's)	μg/l as Chlorine; Lindane Standard	2.2	<1	1.8	<1	<1

COMMENTS: Sampling point 6S could not be sampled since it was dry. All analyses were performed according to U.S. Environmental Protection Agency methodologies where applicable.

FOR RECRA RESEARCH, INC. R. V.

DATE 6/3/80

ANALYTICAL RESULTS

E. I. DU PONT DE NEMOURS & COMPANY, INC.

2I relocated, drilled during the [illegible] well [illegible] landfill #5

Report Date: 5/30/80
Sample Date: 4/17/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) 4S 4/17/80	5S 4/17/80	7S 4/17/80	2I 4/17/80	3I 4/17/80
pH	Standard Units	7.89	7.14	7.20	7.19	7.67
Conductance	µmhos/cm^2	1,980	3,000	2,190	13,600	1,350
Total Organic Carbon	mg/l	23	53	47	350	14
Chemical Oxygen Demand	mg/l	150	230	195	1,560	89.7
Biochemical Oxygen Demand (5 day)	mg/l	15	41	22	300	15
Total Filterable Residue (103°C)	mg/l	1,300	2,600	1,300	4,400	850
Sulfate	mg/l	460	1,300	290	150	230
Chloride	mg/l	34.6	192	111	16.9	18.5
Total Kjeldahl Nitrogen	mg N/l	0.65	4.0	2.4	480	1.3
Ammonia	mg N/l	0.29	3.6	1.4	1,500	0.18
Nitrate	mg N/l	0.12	0.29	0.76	0.64	0.30
Soluble Arsenic	µg/l	<2	<2	4.5	6.3	<2
Soluble Selenium	µg/l	<1	<1	<1	<1	<1
Soluble Silver	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
Soluble Cadmium	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
Soluble Mercury	µg/l	<1	<1	<1	3.1	<1
Soluble Chromium	mg/l	<0.003	<0.003	0.012	0.020	<0.003
Soluble Barium	mg/l	0.5	0.5	0.8	0.8	0.5
Soluble Lead	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02
Halogenated Organic Scan (Coulson's)	µg/l as Chlorine; Lindane Standard	<1	1.6	<1	<1	<1

COMMENTS: Halogenated Organic Scan (Coulson's) analyses were performed using a halogen specific - Coulson's electrolytic conductivity detector. Results of these scans are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated upon the chlorine content and response factor of Lindane, but do not imply either the presence or absence of Lindane itself. Halogenated organic scan results do not include volatile organic constituents. The discrepancy between Total Kjeldahl Nitrogen (TKN) and Ammonia results for Sample 2I is believed to be due to positive interferences in the ammonia determination. Such interferences could be caused by the presence of volatile amines. Although TKN results are believed to be more reliable than the ammonia results, both values are reported for informational purposes. Both analyses were reported with similar results.

FOR RECRA RESEARCH, INC. ____________

DATE 6/3/80

SUBSURFACE EXPLORATION

SOIL
AND
CONCRETE
TESTING

EMPIRE SOILS INVESTIGATIONS, INC.

GROTON • BUFFALO • ROCHESTER • SYRACUSE • ALBANY

BUFFALO AREA OFFICE:
S-3858 SHELDON ROAD / P. O. BOX 229, ORCHARD PARK, NEW YORK 14127
AREA CODE 716 649-8110

January 8, 1980

E.I. DuPont DeNemours & Co.
Yerkes Plant, Station B - Drawer L
Buffalo, New York 14207

Gentlemen:

The following report is an accumulation of the data accumulated from permeability tests performed on undisturbed samples from Borings B-3D, B-4D amd B-7D with reference to the DuPont Ground Water Contamination Study.

The actual undisturbed shelby tube samples were retrieved during the site investigation portion of our work, performed in August of 1979. All samples were extracted from the tubes and subjected to visual classification, natural water content, unit weight and permeability. The permeability tests were all performed at two individual differential heads of 5 and 10 PSI respectively. All test results are indicated on the attached data sheets.

If you have any further questions or if we can assist you in any way, do not hesitate to contact us at any time.

Very truly yours,

EMPIRE SOILS INVESTIGATIONS, INC.

Stanley J. Blas Jr.

Stanley J. Blas, Jr.
Soils and Materials Engineer
Director of Testing Services

SJB/gel

CONSTANT HEAD PERMEABILITY TEST
WITH BACKPRESSURE SATURATION

PROJECT: GROUND WATER CONTAMINATION STUDY, DUPONT
SAMPLE: BORING 8-3D, Sample 16, 30.0' to 32.0'

Sample Data:

Height: 6.83 cm
Diameter: 7.11 cm
Dry Unit Weight: 107.1 pcf
Moisture Content before Test: 21.6 %
Moisture Content after Test: 21.2 %
Back Pressure: 50 & 45 psi
Cell Confining Pressure: 77 psi

Test Data:

Differential Head, psi: 5 / 10
Coefficient of Permeability cm/sec.: 1.56×10^{-8} / 1.60×10^{-8} /

Note: TRACE AMOUNT OF FINE GRAVEL OR COARSE SAND EMBEDDED IN THE SOIL CAUSED SCORING OF SPECIMEN SURFACE. TO PREVENT SEEPAGE THROUGH SCORES PERMEABILITY TEST WAS PERFORMED IN THE TRIAXIAL CELL.

CONSTANT HEAD PERMEABILITY TEST
WITH BACKPRESSURE SATURATION

PROJECT: GROUND WATER CONTAMINATION STUDY, DUPONT
SAMPLE: BORING B-4D, SAMPLE 16, 30.0' to 32.0'

Sample Data:

Height:	14.61 cm
Diameter:	7.30 cm
Dry Unit Weight:	105.6 pcf
Moisture Content before Test:	21.7 %
Moisture Content after Test:	21.2 %
Back Pressure:	50 & 45 psi
Cell Confining Pressure:	77 psi

Test Data:

Differential Head, psi	5	10
Coefficient of Permeability cm/sec.:	1.59×10^{-8}	1.54×10^{-8}

Note: TRACE AMOUNT OF FINE GRAVEL OR COARSE SAND EMBEDDED IN THE SOIL CAUSED SCORING OF SPECIMEN SURFACE. FOR THIS REASON PERMEABILITY TEST HAD TO BE PERFORMED IN A TRIAXIAL CELL.

CONSTANT HEAD PERMEABILITY TEST
WITH BACKPRESSURE SATURATION

PROJECT: GROUND WATER CONTAMINATION STUDY, DUPONT
SAMPLE: BORING B-4D, SAMPLE 16, 30.0' to 32.0'

Sample Data:

Height: 14.61 cm
Diameter: 7.30 cm
Dry Unit Weight: 105.6 pcf
Moisture Content before Test: 21.7 %
Moisture Content after Test: 21.2 %
Back Pressure: 50 & 45 psi
Cell Confining Pressure: 77 psi

Test Data:

Differential Head, psi	5	10
Coefficient of Permeability cm/sec.:	1.59×10^{-8}	1.54×10^{-8}

Note: TRACE AMOUNT OF FINE GRAVEL OR COARSE SAND EMBEDDED IN THE SOIL CAUSED SCORING OF SPECIMEN SURFACE. FOR THIS REASON PERMEABILITY TEST HAD TO BE PERFORMED IN A TRIAXIAL CELL.

CONSTANT HEAD PERMEABILITY TEST
WITH BACKPRESSURE SATURATION

PROJECT: GROUND WATER CONTAMINATION STUDY, DUPONT
SAMPLE: BORING B-70, Sample 16, 30.0' to 32.0'.

Sample Data:

Height: 10.37 cm
Diameter: 7.30 cm
Dry Unit Weight: 90.1 pcf
Moisture Content before Test: 32.3 %
Moisture Content after Test: 32.6 %
Back Pressure: 50 & 45 psi
Cell Confining Pressure: 77 psi

Test Data:

Differential Head, psi	5	10
Coefficient of Permeability cm/sec.:	1.16×10^{-8}	1.08×10^{-8}

Note: TRACE AMOUNT OF FINE GRAVEL OR COARSE SAND EMBEDDED IN THE SOIL CAUSED SCORING OF SPECIMEN SURFACE. TO PREVENT SEEPAGE THROUGH SCORES PERMEABILITY TEST WAS PERFORMED IN THE TRIAXIAL CELL.

CONSTANT HEAD PERMEABILITY TEST
WITH BACKPRESSURE SATURATION

PROJECT: GROUND WATER CONTAMINATION STUDY, DUPONT
SAMPLE: BORING B-70, Sample 16, 30.0' to 32.0'.

Sample Data:

Height:	10.37 cm
Diameter:	7.30 cm
Dry Unit Weight:	90.1 pcf
Moisture Content before Test:	32.3 %
Moisture Content after Test:	32.6 %
Back Pressure:	50 & 45 psi
Cell Confining Pressure:	77 psi

Test Data:

Differential Head, psi	5	10
Coefficient of Permeability cm/sec.:	1.16×10^{-8}	1.08×10^{-8}

Note: TRACE AMOUNT OF FINE GRAVEL OR COARSE SAND EMBEDDED IN THE SOIL CAUSED SCORING OF SPECIMEN SURFACE. TO PREVENT SEEPAGE THROUGH SCORES PERMEABILITY TEST WAS PERFORMED IN THE TRIAXIAL CELL.

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

TO Peter Buechi DATE March 16, 1984
FROM Ronald D. Koczaja
SUBJECT Transmittal of Comments Regarding Federal Superfund Investigation Reports.

Attached are comments on the following N.U.S. Reports:

1. City of Lackawanna
2. Tonawanda Coke Corporation
3. E.I. DuPont Company

We are also returning the N.U.S. Reports we have reviewed.

RONALD D. KOCZAJA
Asst. Env. Quality Engineer
Division of Environmental Control

RDK:rb

Attachments

Federal Superfund Site Investigation
E.I. DuPont - Town of Tonawanda
EPA ID #D002103513

The NUS Corporation investigated the site for the EPA. They visited the site on May 5, 1983. Erie County DEP was not contacted by NUS for input during their investigation.

The report is comprised of numerous EPA form sheets and a listing of wastes and quantity estimates for the site. NUS rated this site as a low priority for followup action. Followup recommendation consisted of assessing the site's impact based on the firm's monitoring well data. Data from sampling analysis was available at the time of the report's preparation but apparently was not evaluated by NUS. This report was basically a partial listing or summary of available information. It appears that NUS did not attempt to evaluate the impact of the site.

As discussed in our (DEP) profile report, a number of metals were found to exceed New York State groundwater standards in a sampling of monitoring well analytical results. The excesses reported were slightly above the standards and do not indicate a significant impact. Groundwater is not used as a source of drinking water in the area. The Niagara River, supplying potable water in the area, does not reflect an impact resulting from this site.

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

FROM Ronald D. Koczaja **DATE** March 12, 1979

TO FILE

SUBJECT Inspection of Abandoned On-Sote Solid Waste Disposal Area

DuPont Incorporated
River Road
Tonawanda, New York

876-4420

The writer met with Dr. Amborski of Dupont to inspect the plant's on-site disposal area. Dupont last used plant grounds for waste disposal approximately one year ago. A total of 6-8 acres were used over an eight year span. Waste solid Corian (Aluminum oxide filled methyl methacrylate), Vexar (polyethylene, polypropylene), and Tedlar (poly vinyl fluoride) was deposited on-site.

Dr. Amborski reported the soil on site is approximately 40 feet of clay over rock. Pits approximately 15-20 feet deep were dug to receive the waste. There was no intermediate cover used during the period of site use. Once filled the pits were covered with soil and graded. The inspection found that pieces of Corian had worked its way to the surface over the entire area and were visible. Grading of the abandoned site appeared adequate as very little ponding was evident and the site blended into the surrounding contours. The vegetation that surrounds the area on three sides has not yet reclaimed the site. The site is shielded from view of motorists on the Thruway by a patch of woods and industrial lands are located along the other three sides. Dupont currently disposes of its solid waste at the Newco facility in Niagara Falls. Their waste is hauled by Niagara Sanitation.

The solubilities of these polymerized materials are such that leachate should not be a problem. Vegetation should establish itself this coming summer providing both cover and erosion control. As this is an industrial area, the presence of some of the disposed material on the surface is acceptable in the writer's opinion.

RDK/jk

cc: Mr. Campbell
Mr. Voell
Mr. McMahon, NYSDEC

I. E. DuPont DeNemours and Company - #915019 - Values reported samples taken from the monitoring wells on July 17, 1979, October 2, 1979 and April 16 and 17, 1980(ECDEP 1982)

Sample Date: 7/17/79

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION EAST TEDLAR 1:15 PM	 WEST TEDLAR 4:15PM
pH	Standard Units	6.54	6.09
Conductance	umhos/cm	2,500	2,540
Ammonia	mg N/l	0.55	0.50
Chloride	mg/l	67.3	66.9
Total Organic Carbon	mg/l	2.2	3.9
Sulfate	mg/l	1,390	1,380
Soluble Aluminum	mg/l	0.4	0.2
Soluble Arsenic	ug/l	6.0	1.6
Soluble Chromium	mg/l	0.003	0.003
Soluble Copper	mg/l	0.003	0.003
Soluble Iron	mg/l	0.05	0.20
Soluble Lead	mg/l	0.04	0.03
Soluble Mercury	ug/l	0.9	0.9
Total Halogenated Organics	ug/l as Chlorine; Lindane Standard	0.37	0.84
Total Organic Scan	ug/l as Carbon Lindane Standard	400	56
Total Volatile Chlorinated	ug/l as Chlorine; Carbon Tetrachloride Standard	43.2	

Sample 10/2/79 (ECDEP 1952)

SAMPLE IDENTIFICATION

PARAMETER	UNITS OF MEASURE	1-S	1-D	2-S	2-D
pH	Standard Units	7.63	8.09	7.59	10.49
Conductance	umhos/cm, 25°C	3,350	2,920	5,550	2,740
Chloride	mg/l	785	63.7	985	73.7
Biochemical Oxygen Demand - 5 day	mg/l	2.0	2.0	2.0	3.1
Chemical Oxygen Demand	mg/l	170	24	84	22
Total Kjeldahl Nitrogen	mg N/l	-	9.0	-	6.6
Ammonia	mg N/l	-	1.2	-	0.67
Nitrate	mg N/l	1.38	0.38	1.76	0.20
Total Dissolved Solids (103°C)	mg/l	2,170	2,730	4,860	2,540
Sulfate	mg/l	613	1,730	1,230	1,560
Soluble Arsenic	ug/l	5.0	2.0	2.0	2.0
Soluble Selenium	ug/l	3.9	0.91	1.9	0.7
Soluble Silver	mg/l	0.005	0.005	0.005	0.005
Soluble Cadmium	mg/l	0.003	0.003	0.003	0.003
Soluble Mercury	ug/l	3.0	0.7	0.7	0.7
Soluble Chromium	mg/l	0.016	0.010	0.002	0.006
Soluble Barium	mg/l	1.2	1.0	0.8	0.6
Soluble Lead	mg/l	0.03	0.03	0.03	0.03
Chlorinated Organic Scan	ug/l as Chlorine Lindane Standard	1.0	1.0	1.0	1.0

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION 3-I	3-D	4-S	4-D
pH	Standard Units	6.88	8.03	6.92	10.30
Conductance	umhos/cm, 25°C	1,510	3,370	2,280	4.040
Chloride	mg/l	16.2	970	78.5	328
Biochemical Oxygen Demand - 5 day	mg/l	2.5	44	3.4	22
Chemical Oxygen Demand	mg/l	50	137	60	107
Total Kjeldahl Nitrogen	mg N/l	2.5	3.3	2.2	6.2
Ammonia	mg N/l	1.0	2.2	1.3	3.8
Nitrate	mg N/l	0.46	0.34	0.38	0.54
Total Dissolved Solids (103°C)	mg/l	1,040	3,450	1,600	3,480
Sulfate	mg/l	258	1,960	580	1,950
Soluble Arsenic	ug/l	2.0	2.0	2.3	2.0
Soluble Selenium	ug/l	0.7	1.0	0.7	0.7
Soluble Silver	mg/l	0.005	0.005	0.005	0.005
Soluble Cadmium	mg/l	0.003	0.003	0.003	0.003
Soluble Mercury	ug/l	0.7	0.7	0.7	0.7
Soluble Chromium	mg/l	0.002	0.004	0.014	0.022
Soluble Barium	mg/l	1.0	0.8	0.8	1.0
Soluble Lead	mg/l	0.03	0.03	0.03	0.03
Chlorinated Organic Scan	ug/l as Chlorine Lindane Standard	1.0	1.0	1.0	1.0

Sample Date: 10/2/79

(ECDEP 1982)

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATIO
		7-D
pH	Standard Units	10.09
Conductance	umhos/cm, 25° C	2,810
Chloride	mg/l	87.4
Biochemical Oxygen Demand - 5 day	mg/l	50
Chemical Oxygen Demand	mg/l	107
Total Kjeldahl Nitrogen	mg N/l	8.8
Ammonia	mg N/l	2.2
Nitrate	mg N/l	0.51
Total Dissolved Solids (103° C)	mg/l	2,380
Sulfate	mg/l	1,540
Soluble Arsenic	ug/l	2.0
Soluble Selenium	ug/l	0.7
Soluble Silver	mg/l	0.005
Soluble Cadmium	mg/l	0.003
Soluble Mercury	ug/l	0.7
Soluble Chromium	mg/l	0.016
Soluble Barium	mg/l	1.2
Soluble Lead	mg/l	0.03
Chlorinated Organic Scan	ug/l as Chlorine, Lindane Standard	1.0

Sample Date: 4/16/80

(EC DEP 1982)

		SAMPLE IDENTIFICATION (DATE)				
PARAMETER	UNITS OF MEASURE	1D 4/16/80	2D 4/16/80	3D 4/16/80	4D 4/16/80	5D 4/16
pH	Standard Units	11.35	12.60	8.08	10.68	8.80
Conductance	umhos/cm^2	3,490	5,360	3,200	3,010	2,94
Total Organic Carbon	mg/l	13	11	16	25	490
Chemical Oxygen Demand	mg/l	64.7	77.0	85.2	85.2	1,55
Biochemical Oxygen Demand (5 day)	mg/l	10	10	15	23	250
Total Filterable Residue (103°C)	mg/l	2,400	1,900	3,000	2,200	2,10
Sulfate	mg/l	1,800	730	2,000	1,800	1,20
Chloride	mg/l	92.8	83.4	73.0	200	160
Total Kjeldahl Nitrogen	mg N/l	3.8	2.7	2.6	79	39
Ammonia	mg N/l	2.1	0.75	1.2	7.1	7.6
Nitrate	mg N/l	1.0	0.52	0.45	3.1	0.93
Soluble Arsenic	ug/l	2	2	2	2	2
Soluble Selenium	ug/l	1	1	1	1	1
Soluble Silver	mg/l	0.005	0.005	0.005	0.005	0.00
Soluble Cadmium	mg/l	0.003	0.003	0.003	0.003	0.00
Soluble Mercury	ug/l	1	1	1	1	1
Soluble Chromium	mg/l	0.003	0.003	0.003	0.003	0.00
Soluble Barium	mg/l	0.8	1.0	1.0	0.8	0.5
Soluble Lead	mg/l	0.02	0.02	0.02	0.02	0.02
Halogenated Organic Scan (Coulson's)	ug/l as Chlorine; Lindane Standard	1	1	2.9	1	2.6

Sample Date: 4/16/80 - 4/17/80

		SAMPLE IDENTIFICATION (DATE)				
PARAMETER	UNITS OF MEASURE	6D 4/16/80	7D 4/16/80	1S 4/17/80	2S 4/17/80	3S 4/17
pH	Standard Units	9.75	9.65	7.36	7.30	7.4
Conductance	umhos/cm^2	3,590	3,180	3,200	4,990	1,98
Total Organic Carbon	mg/l	110	22	90	28	27
Chemical Oxygen Demand	mg/l	290	85.2	320	220	150
Biochemical Oxygen Demand (5 day)	mg/l	7.6	16	18	16	16
Total Filterable Residue (103°C)	mg/l	3,200	2,100	1,800	4,100	1,2
Sulfate	mg/l	2,200	1,500	290	1,100	210
Chloride	mg/l	190	64	549	888	11.
Total Kjeldahl Nitrogen	mg N/l	300	7.1	6.9	4.6	4.5
Ammonia	mg N/l	77	6.1	5.2	4.2	4.0
Nitrate	mg N/l	1.5	0.58	0.62	0.62	0.1
Soluble Arsenic	ug/l	2	2	2	2	5.0
Soluble Selenium	ug/l	1	1	1	1	1
Soluble Silver	mg/l	0.005	0.005	0.005	0.005	0.0
Soluble Cadmium	mg/l	0.003	0.003	0.003	0.003	0.0
Soluble Mercury	ug/l	1	1	1	1	1
Soluble Chromium	mg/l	0.003	0.003	0.003	0.003	0.
Soluble Barium	mg/l	1.2	0.9	0.7	1.0	0.
Soluble Lead	mg/l	0.02	0.02	0.02	0.02	0.
Halogenated Organic Scan (Coulson's)	ug/l as Chlorine; Lindane Standard	2.2	1	1.8	1	1

Sample Date: 4/17/80

(ECDEP 1982)

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE) 4S 4/17/80	5S 4/17/80	7S 4/17/80	21 4/17/80	3 4/17
pH	Standard Units	7.89	7.14	7.20	7.19	7. 7
Conductance	umhos/cm^2	1,980	3,000	2,190	13,600	1, 5
Total Organic Carbon	mg/l	23	53	47	350	14
Chemical Oxygen Demand	mg/l	150	230	195	1,560	89 7
Biochemical Oxygen Demand (5 day)	mg/l	15	41	22	300	15
Total Filterable Residue (103°C)	mg/l	1,300	2,600	1,300	4,400	85
Sulfate	mg/l	460	1,300	290	150	230
Chloride	mg/l	34.6	192	111	16.9	18.5
Total Kjeldahl Nitrogen	mg N/l	0.65	4.0	2.4	480	1.
Ammonia	mg N/l	0.29	3.6	1.4	1,500	0.18
Nitrate	mg N/l	0.12	0.29	0.76	0.64	0.30
Soluble Arsenic	ug/l	2	2	4.5	6.3	2
Soluble Selenium	ug/l	1	1	1	1	1
Soluble Silver	mg/l	0.005	0.005	0.005	0.005	0.00
Soluble Cadmium	mg/l	0.003	0.003	0.003	0.003	0 0
Soluble Mercury	ug/l	1	1	1	3.1	1
Soluble Chromium	mg/l	0.003	0.003	0.012	0.020	0.00
Soluble Barium	mg/l	0.5	0.5	0.8	0.8	0 5
Soluble Lead	mg/l	0.02	0.02	0.02	0.02	0 2
Halogenated Organic Scan (Coulson's)	ug/l as Chlorine; Lindane Standard	1	1.6	1	1	

REFERENCE NO. 3

NUS
CORPORATION
A Halliburton Company

REF.
USEPA
Region II
26 Fed Plaza
NY, NY 10278
Ben Conetta

[redacted]

E.I. Dupont

PROJECT FOR PERFORMANCE OF REMEDIAL RESPONSE ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCE FACILITIES—ZONE 1

NUS CORPORATION
SUPERFUND DIVISION

FINAL DRAFT
SITE INSPECTION REPORT
AND HAZARDOUS RANKING SYSTEM MODEL
E.I. DUPONT
TONAWANDA, NEW YORK

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8403-32A
CONTRACT NO. 68-01-6699
02-8303-124A

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

DECEMBER 14, 1984

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY

Charlotte Ryden

CHARLOTTE RYDEN
PROJECT MANAGER

REVIEWED/APPROVED BY

Terry Ritter

TERRY A. RITTER
REGIONAL PROJECT MANAGER

NUS
CORPORATION

RARITAN PLAZA III
FIELDCREST AVENUE
EDISON, NEW JERSEY 08837
(201) 225-6160

December 14, 1984
C-584-12-84-40

Mr. Mark Haulenbeek
U.S. EPA, Region II
Edison, New Jersey 08837

Dear Mark:

Enclosed are the final Site Inspection Report (EPA Form 2070-13) and the MITRE Hazardous Ranking System (HRS) documents for E.I. Dupont, Tonawanda, New York. The site inspection was authorized under TDD #02-8303-124A.

Analytical data from the laboratories was received November 29, 1984. This updated version replaces the incomplete reports submitted September 30, 1984.

Very truly yours,

Charlotte Ryden

Charlotte Ryden

Approved:

CR/jm

Enclosures

NUS CORPORATION
A Halliburton Company

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
EXECUTIVE SUMMARY

EI. Dupont
Site Name

NYD002103513
EPA Site ID Number

Buffalo, New York
Address

02-8303-124A
TDD Number

SITE DESCRIPTION

EI. Dupont is an active facility which operated a landfill from 1921 to 1978. Various nylon wastes, cellulosic wastes, and polyvinyl fluorides were deposited in 6 pits, 15-20 feet deep, covering about six to eight acres of property. Natural clay is present beneath the pits. When the pits were full, they were covered with soil and graded.
On 7/10/84, FIT collected 2 groundwater and 4 soil samples to be analyzed for priority pollutants..

HAZARD RANKING SCORE: 16.77

Prepared by: C. Ryden
of NUS Corporation

Date: 12/10/84

SECTION 2

ENVIRONMENTAL PROTECTION AGENCY FORM 2070-13

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
E.I. Dupont De Nemours	Sheridan Drive Station B

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Buffalo	NY	14207	Erie	029	36

09 COORDINATES
LATITUDE 42° 57' 50". N
LONGITUDE 78° 55' 03" W

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

III. INSPECTION INFORMATION

01 DATE OF INSPECTION
7 / 10 / 84
MONTH DAY YEAR

02 SITE STATUS
☐ ACTIVE
☒ INACTIVE

03 YEARS OF OPERATION
1921 | 1978 ___ UNKNOWN
BEGINNING YEAR ENDING YEAR

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☒ 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.
Charlotte Ryden	Civil Engineer	NUS Corp.	(201) 225-6160
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Jerry Cirilli	Geologist	NUS Corp.	(201) 225-6160
Colleen Ranney	Toxicologist	NUS Corp.	(201) 225-6160
Joseph Logan	Chemical Engineer	NUS Corp.	(201) 225-6160
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Leonard E. Amborski	Industrial Hygienist	Sheridan Drive Buffalo, NY	(716) 876-4420
Craig Walker		Sheridan Drive Buffalo, NY	(716) 876-4420
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)
☒ PERMISSION
☐ WARRANT

18 TIME OF INSPECTION
0930-1600

19 WEATHER CONDITIONS
75°F, overcast, breezy

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NO.
Mark Haulenbeek	US EPA, Region II, Edison, NJ			(201) 321-6685
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Charlotte Ryden	NUS Corp.	FIT II	(201) 225-6160	8 / 22 / 84 MONTH DAY YEAR

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

TONS 90,000
CUBIC YARDS unknown
NO. OF DRUMS unknown

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	9,200	Tons	
OLW	OILY WASTE			
SOL	SOLVENTS	0.5	Tons	
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	0.5	Tons	
IOC	INORGANIC CHEMICALS	80,000	Tons	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SLU	Dry "Corian" Waste	unknown	landfill	unknown	unknown
SLU	Wet "Corian" Waste	unknown	landfill - drums	unknown	unknown
SLU	Polyvinyl Alcohol Film	unknown	landfill	unknown	unknown
SLU	"Vexar" Netting	unknown	landfill	unknown	unknown
SLU	"Tedlar" w/Dimethylacetamide	" "	landfill	unknown	unknown
SLU	Polyvinyl Flouride Film	9002-89-5	landfill	unknown	unknown
SLU	Paint Sludges	unknown	landfill	unknown	unknown
SOL	Methylene Chloride	75-09-2	55 gallon drums	unknown	unknown
SOL	Laboratory Chemicals	unknown	landfill	unknown	unknown
OCC	Laboratory Chemicals	unknown	landfill	unknown	unknown
OCC	d Limonene	138-86-3	55 gallon drums	unknown	unknown
OCC	Methyl Methacrylate	unknown	55 gallon drums	unknown	unknown
IOC	Cellulosic Viscose	unknown	landfill	unknown	unknown
IOC	Cellophane Rayon	unknown	landfill	unknown	unknown

V. FEEDSTOCKS (See Appendix for CAS Numbers) none

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

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

NUS FIT II Site Inspections 5/5/83 and 7/10/84
Interview with Dr. L.E. Amborski, DuPont Environmental Control 5/5/83.
NY DEC Interagency Task Force Report dated 1979.

EPA

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

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D002103513

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☒ OBSERVED (DATE: 8/82, 7/10/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential of contaminant migration is minor as indicated by data collected 8/82. No definite organic leachate plume was evident. No organic priority pollutants were found. Concentration of lead, mercury, barium, sulfate and chloride were found in excess of US EPA criterion for drinking water. Priority pollutant sampling conducted 7/10/84 showed the release of arsenic, chromium, cobalt, lead, and nickel to groundwater.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 110,000
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed. Potential exists due to toxic nature of materials deposited and close proximity of the Niagara River.

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

None observed. No potential exists.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 1000
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

d-limonene and Methyl Methacrylate, two wastes which are currently generated by the facility, both have high flash points and therefore, pose a potential for explosive conditions. These wastes remain on site in 55 gallon drums for a period of time prior to removal from site.

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

No potential exists.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 6-8 (Acres)
02 ☒ OBSERVED (DATE: 7/10/84) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Soil samples showed arsenic present in an amount greater than what would naturally occur in soil. Organic compounds detected included several polycyclic aromatic hydrocarbons (PAH).

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 110,000
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The surrounding communities draw their water supply from the Niagara River. Groundwater flow for this site is west, toward the river.

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ± 350
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Due to the toxic nature of dimethylacetamine, methylene chloride and the high flash points, as well as, the toxicity of d-limonene and methyl methacrylate, the potential for worker exposure/injury exists.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED:
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The potential for drinking water contamination exists therefore, the potential for population exposure also exists.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed. The area where material was deposited has been reclaimed and subsequently planted. Dry corian waste and other building demolition debris have surfaced throughout, limiting growth in these areas.

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

Potential exists for contaminants to enter surface waters.

01 ☒ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential for food chain contamination exists if the contaminated groundwater makes contact witn surface water. The Niagara River is 4000 ft. due west of the site. Marine ecosystem could be affected.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
(Spills, Runoff, Standing liquids, Leaking drums)
03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

None observed, no potential exists.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed, no potential exists.

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

None observed, no potential exists.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential exists, site is entirely fenced and guarded by 24 hr. security system.

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

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: 110,000

IV. COMMENTS

This is an active facility which operated a Landfill on site from 1921 to 1978. Various nylon wastes, cellulosic wastes, and polyvinyl fluorides were deposited in 6 pits 15-20 ft. deep, which encompass six to eight acres in the rear of the property. Part of the disposal area is now a parking lot owned by Chevrolet. (continued on attached page)

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

US Geological Survey: August 1982
NUS FIT II Site Inspection 5-5-83
Interview with Dr. L. E. Amborski, CIH, DuPont's Envrionmental Control 5-5-83
NY DEC Interagency Task Force Report dated March, 1979

IV Comments (continued)

The rest of the former disposal area is reclaimed. A small portion, approximately one acre, has recently been used to deposit demolition debris.

From 1921, the following products were/are manufactured at the plant:

Rayon	1921-1955
Cellophane	1924-1968
Cel-O-Seal Caps & Bands	1931-1964
Cellulose Sponge	1936-1951
Cordura Yarn	1941-1955
Polyethylene Film	1951-1961
Vexar Netting	Since 1959
Tedlar Polyvinyl Flouride Film	Since 1955
Corian Sheet and Shape	Since 1968

The following wastes were generated by DuPont and disposed of in six pits on site:

Cellulosic Viscose, Cellophane Rayon and Sponges	80,000 tons
"Dry" Corian Wastes	5,000 tons
"Wet" Corian Wastes (in drums)	1,500 tons
Polyvinyl Alcohol film	100 tons
"Vexar" Netting	1,500 tons
"Tedlar" with Dimethylacetamide	1,000 tons
"Tedlar" Polyvinyl Flouride Film	750 tons
Nylon Shutters and Water based Paint	75 tons
Laboratory Chemicals	1 ton

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

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 NY	0001601	3-3-78	3-31-81	
☐ B. UIC				
☒ C. AIR Facility #	0563-1 thru 13	Unknown	Unknown	Air Emission
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☒ H. LOCAL (Specify) Town	#173	Unknown	Unknown	Discharge waste to treatmen
☐ I. OTHER (Specify)				plant of Tonawanda
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	88,300	Tons
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

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

05 OTHER

☒ A. BUILDINGS ON SITE

5 production plants

06 AREA OF SITE

90 (Acres)

6-8 acres used for disposal area

07 COMMENTS

Six to eight acres in the rear of the DuPont Facility were utilized for a disposal area from 1921 to 1978. Material was deposited in six pits, 15-20 ft. deep. The facility currently generates the following hazardous wastes: d-limonene 12 drums/yr; Methylene Chloride 4-5 drums/year; and Methyl Methacrylate 1 drum/yr. These wastes are manifested, transported and disposed off-site by authorized haulers.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

No known synthetic liners of disposal pits, but natural clay underlies pits; relatively low permeability (1 x 10^{-8} cm/s).

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Site is entirely fenced and facility has 24 hour security system.

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

NUS FIT II Site Inspections 5-5-83, 7/10/84
Interview with Dr. L.E. Amborski CIH, DuPont's Environmental Control, 5-5-83.
NY DEC Interagency Task Force Report of March 1979.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

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

02 PERMEABILITY OF BEDROCK (Check one)

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

03 DEPTH TO BEDROCK 40 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE Unknown (ft)

05 SOIL pH Unknown

06 NET PRECIPITATION 17.5 (in)

07 ONE YEAR 24 HOUR RAINFALL 3.0 (in)

08 SLOPE

SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
0- 3 %	SW	1.2 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE A. ________ (mi)

OTHER B. >3.0 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

no endangered species within 3 miles (mi)

ENDANGERED SPECIES: ________

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AG LAND
A. adjacent (mi)	B. 1 (mi)	C. >3.0 (mi)	D. > 3.0 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The underlying bedrock is predominantly shale with low water holding capacity. The overburden is clay with glacial till interspersed. Slopes are gentle in nature, 0-8%. The Niagara River is 0.75 miles from the site.

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

NUS FIT II Site Inspections 5-5-83, 7/10/84
Interview with Dr. L.E. Ambrski CIH, DuPont Environmental Control 5-5-83
Soil Survey of Erie County, NY
USGS Topographic Map 7.5' series

EPA

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

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D002103513

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☒
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 0.75 (mi)
B. ______ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL Unknown (mi)

04 DEPTH TO GROUNDWATER 15-40 (ft)

05 DIRECTION OF GROUNDWATER FLOW W

06 DEPTH TO AQUIFER OF CONCERN N/A (ft)

07 POTENTIAL YIELD OF AQUIFER N/A (gpd)

08 SOLE SOURCE AQUIFER ☐ YES ☒ NO

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

There are seven sets of monitoring wells on site. Each set has a deep well of approximately 90 feet and a shallow well of 2-6 feet. There are also two more intermediate wells on site, approximately 20 feet deep. All of the wells were sampled in July and October of 1979 by the U.S.G.S. in conjunction with the NY DEC. The shallow wells were sampled by U.S.G.S. 8/82.

10 RECHARGE AREA
☐ YES
☒ NO
COMMENTS

11 DISCHARGE AREA
☒ YES
☐ NO
COMMENTS Groundwater flows toward the Niagara River.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Niagara River	☐	0.75 (mi)
Lake Ontario	☐	20 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE A. 6884 NO. OF PERSONS
TWO (2) MILES OF SITE B. 30515 NO. OF PERSONS
THREE (3) MILES OF SITE C. 78900 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 12482

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.16 (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 site is located in a heavy industrial area. A Chevrolet Plant is adjacent to the SE, and the N.Y. State Thruway is adjacent to the NW. Within 1 mile of the site, aredensely populated residential developments. The Niagara river is within 1 mile to the West of the site.

EPA FORM 2070-13 (7-81)

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO Organics	Inorganics	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	2	Environ Research Group	Chemtech	9/10/84
SURFACE WATER				
WASTE				
AIR				
RUNOFF				
SPILL				
SOIL	4	Science Applications, Inc.	Chemtech	9/10/84
VEGETATION				
OTHER				

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air Quality	HNu photoionization detector, no readings above background.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS Corporation, FIT II, Edison, NJ
(Name of organization or individual)

03 MAPS
☒ YES
☐ NO

04 LOCATION OF MAPS
Site Location Map, Site Map, and Sample Location Map attached

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Field Notebook filed under TDD# 02-8303-124A
Photographs

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

NUS Site Inspection 7/10/84

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. CURRENT OWNER(S) / PARENT COMPANY *(If applicable)*

01 NAME E.I. DuPont deNemours		02 D+B NUMBER 00-131-5704	08 NAME (same)		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 1007 Market St.		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY Wilmington	06 STATE DEL	07 ZIP CODE 19898	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
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
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 analyses, reports)*

NUS FIT II Site Inspections: 5/5/83 and 7/10/84.

EPA

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

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D002103513

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: E.I. DuPont deNemours
02 D+B NUMBER: 00-131-5704
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 1007 Market St.
04 SIC CODE:
05 CITY: Wilmington
06 STATE: DEL
07 ZIP CODE: 19898
08 YEARS OF OPERATION: 64 years
09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME: Not Applicable
11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):
13 SIC CODE:
14 CITY:
15 STATE:
16 ZIP CODE:

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

01 NAME:
02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):
04 SIC CODE:
05 CITY:
06 STATE:
07 ZIP CODE:
08 YEARS OF OPERATION:
09 NAME OF OWNER DURING THIS PERIOD:

01 NAME:
02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):
04 SIC CODE:
05 CITY:
06 STATE:
07 ZIP CODE:
08 YEARS OF OPERATION:
09 NAME OF OWNER DURING THIS PERIOD:

01 NAME:
02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):
04 SIC CODE:
05 CITY:
06 STATE:
07 ZIP CODE:
08 YEARS OF OPERATION:
09 NAME OF OWNER DURING THIS PERIOD:

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

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

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

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

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

NUS FIT II Site Inspections 5/5/83 and 7/10/84.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

II. ON-SITE GENERATOR

01 NAME E.I. DuPont deNemours		02 D+B NUMBER 00-131-5704
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1007 Market St.		04 SIC CODE
05 CITY Wilmington	06 STATE DEL	07 ZIP CODE 19898

III. OFF-SITE GENERATOR(S)

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

IV. TRANSPORTER(S)

01 NAME Cecos International		02 D+B NUMBER	01 NAME Robert Ross Incin. Serv.		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 2321 Kenmore Ave.		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.) 394 Giles Rd.		04 SIC CODE
05 CITY Buffalo	06 STATE NY	07 ZIP CODE 14207	05 CITY Grafton	06 STATE OH	07 ZIP CODE 44044
01 NAME Rollins Environmental Serv.		02 D+B NUMBER	01 NAME Booth Oil		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) PO Box 221		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.) Katherine St.		04 SIC CODE
05 CITY Bridgeport	06 STATE NJ	07 ZIP CODE 08014	05 CITY Buffalo	06 STATE NY	07 ZIP CODE 14207

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

NUS FIT II Site Inspections 5-5-83, 7/10/84
Interview with Dr. L.E. Amborski CIH, du Pont Environmental Control, 5-5-83
Hazardous Waste Disposal Plan Under RCRA by Dr. L. E. Amborski CIH,
DuPont May 28, 1981

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: D002103513

II PAST RESPONSE ACTIVITIES (Continued)

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

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

No reported history.

01 ☐ 2. POPULATION RELOCATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
No reported history.

01 ☐ 3. OTHER REMEDIAL ACTIVITIES 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
None

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

NUS FIT II Site Inspection 5/5/83
Interview with Dr. L.E. Amborski CIH, DuPont Environmetnal Control 5/5/83.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: D002103513

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

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

None

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

NUS FIT II Site Inspections 5-5-83, 7/10/84
Interview with Dr. L.E. Amborski, Du Pont Environmental control 5/5/83
US EPA Region II, Environmental Services Division Files.

EPA FORM 2070-13 (7-81)

SECTION 3

MAPS AND PHOTOGRAPHS

APPENDIX A

MAPS AND PHOTOS

MAPS AND PHOTOS

Figure A-1 provides a Site Location Map.

Figure A-2 provides a Site Map.

Figure A-3 provides a Sample Location Map.

Exhibit A-1 provides photographs of the site.

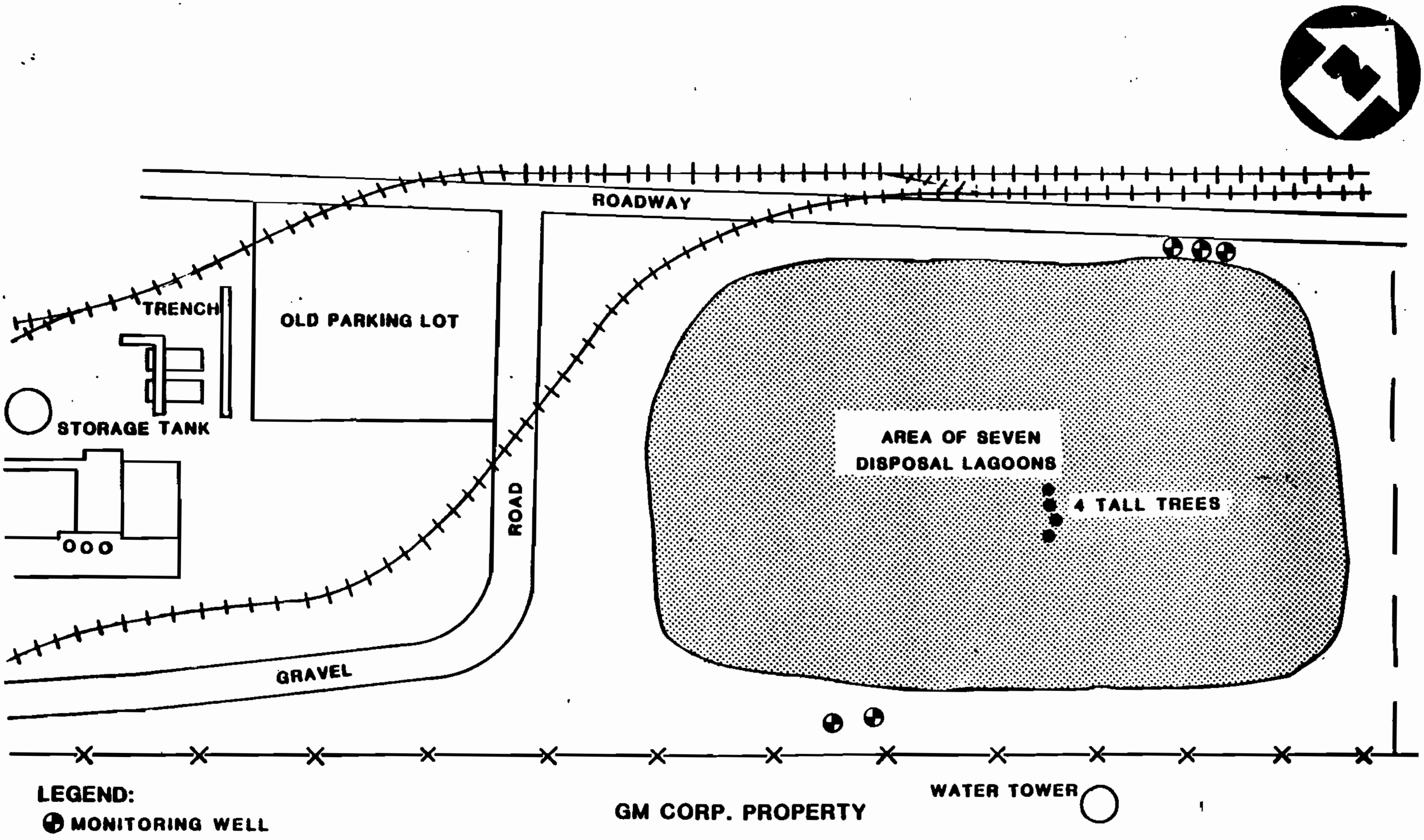

FIGURE A-2

NUS CORPORATION
A Halliburton Company

SITE LOCATION MAP

E.I. DUPONT, TONAWANDA, N.Y.

(NOT TO SCALE)

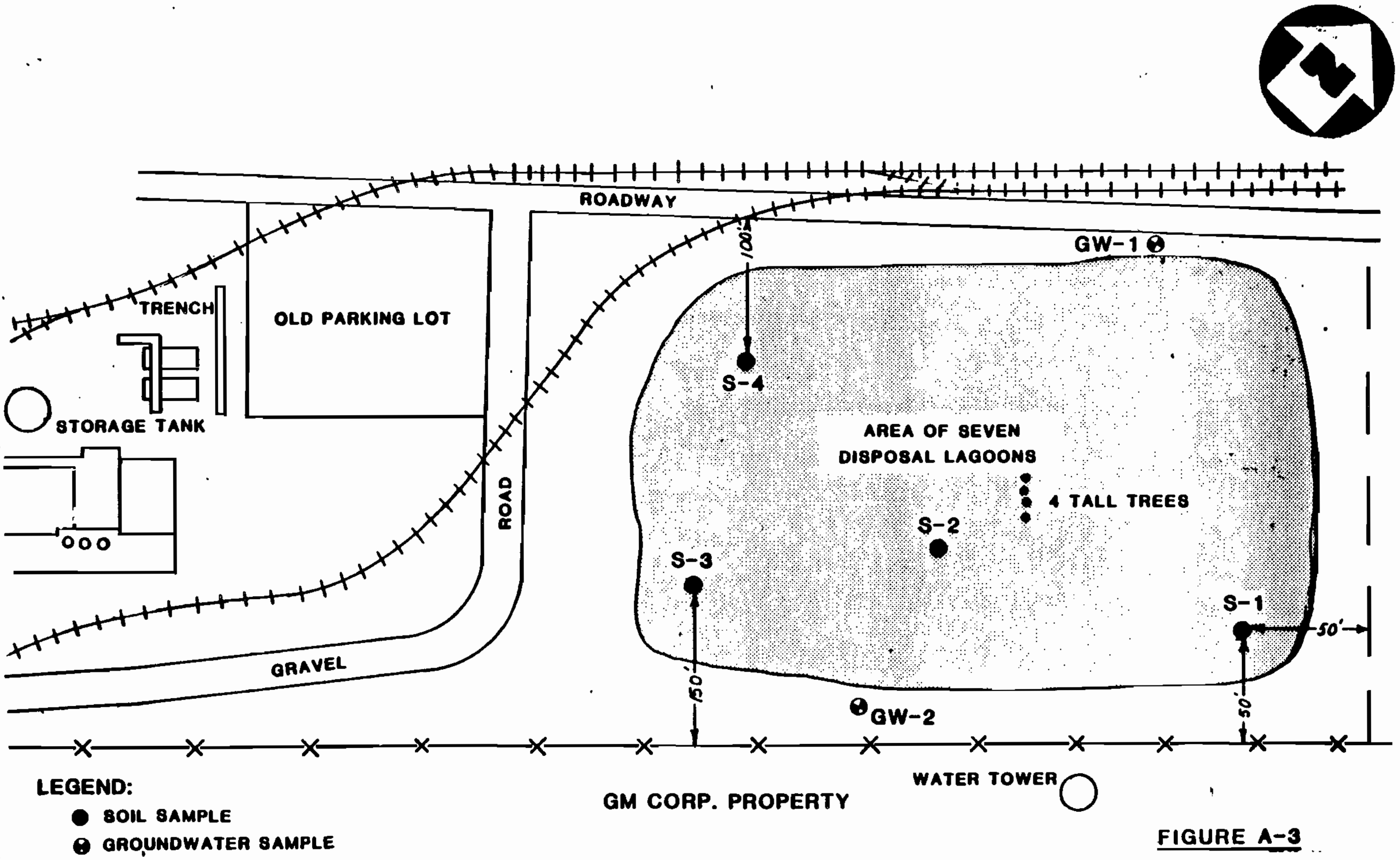

FIGURE A-3

SAMPLE LOCATION MAP
E.I. DUPONT, TONAWANDA, N.Y.
(NOT TO SCALE)

NUS CORPORATION
A Halliburton Company

SECTION 7

PRESS RELEASE SUMMARY–MITRE HAZARDOUS RANKING SYSTEM

Summary Statement
E.I. Dupont
Tonawanda, New York

E.I. Dupont is located in Erie County, in northwestern New York. The plant is just north of Buffalo, about a quarter mile east of the Niagara River. E.I. Dupont dug seven pits, 15'-20' deep, on six-eight acres of their property. The pits were filled with polymerized solid wastes they generated, covered and graded. The area is heavily industrialized.

The main concern is for contamination of surface water near the site. Although the waste solubilities are such that leachate should not be a problem, the disposal site is located near drinking water intakes on the Niagara River.

SECTION 8

ATTACHMENTS- CITED DOCUMENTS

Erie Cty. Dept of Environment + Planning
Sept 1981
"Selected Erie County Inactive Disposal Site Profile"

~~Two other on sites areas were also used by the firm. One site,~~ Active ~~which is still in use, receives rubble and refuse. The other one received industrial wastes including: oils, greases, sludges, fly ash and other compounds. These sites were first used in 1923.~~

E.I.~~E~~. DuPont DeNemours and Co. # 915019

Review of the available photographs could not provide any additional information regarding the activities which occurred at the site or regarding the surrounding drainage. The firm has placed monitoring wells around the site. Analytical results of samples taken from these wells show elevated concentrations for a number of parameters. Appendix II contains the data available for review.

DuPont reported that they disposed of waste "Corion", "Tedlar", "Vexar", rayon, cellophane and polyvinyalcohol film at this site which covered 30-40 acres. Foundry sand was used as a cover material over a large portion of the site. A 10-12 acre portion of the landfill area has since been sold to General Motors and is now a parking lot. The natural clay into which the waste was placed has a permeability of 1.2 to 2.2 x 10-8 cm/sec. The impermeable nature of this subsoil should preclude any leaching into groundwater from the disposal pits.

We recommend that the DuPont results be reviewed further and a hazard potential for the site be determined.? Following an impact assessment remedial actions may be necessary.

I.N.S. Equipment # 915031

A landfilling operation reported carried out by the I.N.S. Equipment Co. was located north of the former Wickwire Steel plant between the

I.E. DuPont DeNemours and Company - #915019

- Ranged of values reported by the firm for samples taken from the monitoring wells on July 17, 1979, October 2, 1975 and April 16 and 17, 1980.

PARAMETER	UNIT OF MEASURE	RANGE
pH	Standard Units	6.09-12.26
Conductance	umhos/cm^2	1350-13600
Total Organic Carbon	mg/l	
Chemical Oxygen Demand	mg/l	22-1560
Biochemical Oxygen Demand (5-Day)	mg/l	L.T. 2-300
Total Filterable Residue (103°C)	mg/l	850-4400
Sulfate	mg/l	150-2200
Chloride	mg/l	11.5-880
Total Kjeldahl Nitrogen	mg N/l	0.65-480
Ammonia	mg N/l	0.18-1500
Nitrate	mg N/l	0.12-3.1
Soluble Arsenic	mg/l	L.T. 2 - 6.3 ≈ 6300 µg/l
Soluble Selenium	mg/l	L.T. 0.7 - 3.9
Soluable Silver	mg/l	L.T. 0.005
Soluble Cadmium	mg/l	L.T. 0.003
Soluble Mercury	mg/l	L.T. 0.7 - 3.1
Soluble Chromium	mg/l	L.T. 0.003 - 0.046
Soluble Barium	mg/l	L.T. 0.003 - 1.2
Soluble Lead	mg/l	L.T. 0.02 - 0.04
Halogenated Organic Scan (Coulson's)	ug/l as Chlorine; Lindane Standard	L T. 1 - 2.9
Total Organic Scan	ug/l as Chlorine; Lindane Standard	56 - 400

NUS CORPORATION **TELECON NOTE**

CONTROL NO:

DATE: 12/6/84

TIME: 11:45 a.m

DISTRIBUTION:

BETWEEN: Ama TAYEBI

OF: NYDEC

PHONE: (716)847-4585

AND: C. RYDEN (NUS)

DISCUSSION:

DIRECTION OF GROUND WATER FLOW AT EI DUPONT IS WEST TOWARD NIAGARA RIVER. INDUSTRIAL WELLS IN AREA. HE WILL CALL BACK IF ANY INFO ON THE WELLS CAN BE FOUND.

ACTION ITEMS:

NUS 087 REVISED 0681

EL DUPONT, NEW YORK

SAMPLE ANALYSIS IDENTIFICATION

Sample	Organic Sample #	Inorganic Sample #
S-1	B2429	MB0316
S-2	B2430	MB0317
S-3	B2431	MB0318
S-4	B2432	MB0319
Soil Blank	B2433	MB0320
GW-1	B2434	MB0321
GW-2	B2435	MB0322
GW-3 (Blank)	B2436	MB0323

VIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
x 818, Alexandria, Virginia 22313 - 703/557-2490

S-1

Sample Number
B2429

ORGANICS ANALYSIS DATA SHEET

tory Name: SAI/JRB
mple ID No: 85-208Q
Matrix: SOIL
elease Authorized By:

Case No: 2998
QC Report No: 2998-2-003
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-23-84 · 9:39
PERCENT MOISTURE: 12.9
CONC. [✓ DILUTION] FACTOR: 2

See Resul [illegible]

CAS #		ug/l or [✓ ug/kg] (circle one)
88-06-2	2,4,6- trichlorophenol	600u
59-50-7	p-chloro-m-cresol	860u
95-57-8	2- chlorophenol	330u
120-83-2	2,4-dichlorophenol	600u
105-67-9	2,4-dimethylphenol	930u
88-75-5	2- nitrophenol	1730u
100-02-7	4-nitrophenol	2660u
51-28-5	2,4-dinitrophenol	2660u
534-52-1	4,6-dinitro-2-methylphenol	1600u
87-86-5	pentachlorophenol	1530u
108-95-2	phenol	460u
65-85-0	benzoic acid	3920u
95-48-7	2-methylphenol	260u
108-39-4	4-methylphenol	1000u
95-95-4	2,4,5-trichlorophenol	600u
83-32-9	acenaphthene	60u
92-87-5	benzidine	3600u
120-82-1	1,2,4-trichlorobenzene	200u
118-74-1	hexachlorobenzene	260u
67-72-1	hexachloroethane	530u
111-44-4	bis(2-chloroethyl)ether	400u
91-58-7	2-chloronaphthalene	400u
95-50-1	1,2-dichlorobenzene	130u
541-73-1	1,3-dichlorobenzene	400u
106-46-7	1,4-dichlorobenzene	130u
91-94-1	3,3'-dichlorobenzidine	660u
121-14-2	2,4-dinitrotoluene	400u
606-20-2	2,6-dinitrotoluene	200u
✓ 122-66-7	1,2-diphenylhydrazine	330u
206-44-0	fluoranthene	439
7005-72-3	4-chlorophenyl phenyl ether	130u
101-55-3	4-bromophenyl phenyl ether	130u
39638-32-9	bis (2-chloroisopropyl) ether	1000u
111-91-1	bis (2-chloroethoxy) methane	400u

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(52B)	87-68-3	hexachlorobutadiene	330u
(53B)	77-47-4	hexachlorocyclopentadiene	460u
(54B)	78-59-1	isophorone	460u
(55B) ✓	91-20-3	naphthalene	282
(56B)	98-95-3	nitrobenzene	730u
(61B)	62-75-9	N-nitrosodimethylamine	930u
(62B)	86-30-6	N-nitrosodiphenylamine	60u
(63B)	621-64-7	N-nitrosodipropylamine	1130u
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	530u
(67B)	85-68-7	benzyl butyl phthalate	930u
(68B)	84-74-2	di-n-butyl phthalate	130u
(69B)	117-84-0	di-n-octyl phthalate	530u
(70B)	84-66-2	diethyl phthalate	130u
(71B)	131-11-3	dimethyl phthalate	60u
(72B) ✓	56-55-3	benzo(a)anthracene	339
(73B) ✓	50-32-8	benzo(a)pyrene	355
(74B) ✓	205-99-2	benzo(b)fluoranthene	370
(75B) ✓	207-08-9	benzo(k)fluoranthene	~~370~~
(76B) ✓	218-01-9	chrysene	426
(77B)	208-96-8	acenaphthylene	130u
(78B)	120-12-7	anthracene	417
(79B)	191-24-2	benzo(ghi)perylene	200u
(80B)	86-73-7	fluorene	60u
(81B) ✓	85-01-8	phenanthrene	692
(82B)	53-70-3	dibenzo(a,h)anthracene	460u
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	330u
(84B) ✓	129-00-0	pyrene	489
	62-53-3	aniline	530u
	100-51-6	benzyl alcohol	730u
	106-47-8	4-chloroaniline	460u
✓	132-64-9	dibenzofuran	208
✓	91-57-6	2-methylnaphthalene	654
	88-74-4	2-nitroaniline	400u
5-94	99-09-2	3-nitroaniline	660u
	100-01-6	[illegible]	[illegible]

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U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 318, Alexandria, Virginia 22313 - 703/557-2490

Sample Number
B2429

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI / JRB
Lab Sample ID No: SS-208G
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 2998
QC Report No: 2998-2-003
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7-12-84 9:43
PERCENT MOISTURE: 12.9
CONC./[✓ DILUTION] FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(2V)	107-02-8	acrolein	100u
(3V)	107-13-1	acrylonitrile	15u
(4V) ✓	71-43-2	benzene	5u
(6V)	56-23-5	carbon tetrachloride	9u
(7V)	108-90-7	chlorobenzene	14u
(10V)	107-06-2	1,2-dichloroethane	3u
(11V)	71-55-6	1,1,1-trichloroethane	5u
(13V)	75-34-3	1,1-dichloroethane	5u
(14V)	79-00-5	1,1,2-trichloroethane	3u
(15V)	79-34-5	1,1,2,2-tetrachloroethane	11u
(16V)	75-00-3	chloroethane	5u
(19V)	110-75-8	2-chloroethylvinyl ether	7u
(23V) ✓	67-66-3	chloroform	3u
(29V)	75-35-4	1,1-dichloroethene	8u
(30V)	156-60-5	trans-1,2-dichloroethene	3u
(32V)	78-87-5	1,2-dichloropropane	10u
(33V)	10061-02-6	trans-1,3-dichloropropene	7u
	10061-01-05	cis-1,3-dichloropropene	5u
(38V)	100-41-4	ethylbenzene	10u
(44V) ✓	75-09-2	methylene chloride	215
(45V)	74-87-3	chloromethane	57u
(46V)	74-83-9	bromomethane	2u
(47V)	75-25-2	bromoform	15u
(48V)	75-27-4	bromodichloromethane	5u
(49V) ✓	75-69-4	fluorotrichloromethane	6u
(50V)	75-71-8	dichlorodifluoromethane	39u
(51V)	124-48-1	chlorodibromomethane	8u
(85V)	127-18-4	tetrachloroethene	15u
(86V) ✓	108-88-3	toluene	2K ~~15u~~
(87V)	79-01-6	trichloroethene	5u
(88V)	75-01-4	vinyl chloride	68u
✓	67-64-1	acetone	15
	78-93-3	2-butanone	3u
✓	75-15-0	carbondisulfide	3K ~~3u~~
	519-78-6	2-hexanone	23u
	108-10-1	4-methyl-2-pentanone	33u
	100-42-5	styrene	15u
	108-05-4	vinyl acetate	13u

PESTICIDES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-27-84 20:
PERCENT MOISTURE: 12.9
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/k
(89P)	309-00-2	aldrin	0.73
(90P)	60-57-1	dieldrin	0.52
(91P)	57-74-9	chlordane	33
(92P)	50-29-3	4,4'-DDT	1.3
(93P)	72-55-9	4,4'-DDE	0.95
(94P)	72-54-8	4,4'-DDD	0.83
(95P)	115-29-7	α-endosulfan	0.60
(96P)	115-29-7	β-endosulfan	0.83
(97P)	1031-07-8	endosulfan sulfate	2.3
(98P)	72-20-8	endrin	2.1
(99P)	7421-93-4	endrin aldehyde	1.2u
(100P)	76-44-8	heptachlor	0.56
(101P)	1024-57-3	heptachlor epoxide	0.74
(102P)	319-84-6	α-BHC	0.51
(103P)	319-85-7	β-BHC	2.2
(104P)	319-86-8	δ-BHC	0.74
(105P)	58-89-9	γ-BHC (lindane)	0.4
(106P)	53469-21-9	PCB-1242	166
(107P)	11097-69-1	PCB-1254	166
(108P)	11104-28-2	PCB-1221	665
(109P)	11141-16-5	PCB-1232	333
(110P)	12672-29-6	PCB-1248	166
(111P)	11096-82-5	PCB-1260	83u
(112P)	12674-11-2	PCB-1016	166
(113P)	8001-35-2	toxaphene	333

DIOXINS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-26-84 1:3
PERCENT MOISTURE: 12.9
CONC./DILUTION FACTOR: 1

5-95

PP #	CAS #		ug/l or [✓ ug/k (circle on
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	[illegible]

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number B2429

Laboratory Name SAI/JRB Case No 2998

QC Report No 2998-2-003

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No. or Retention Time	% Maximum Score Attained Mass Matching Routine (Specify: purity)	Estimated Concentration (ug/l or ug/kg)
1.	10544-50-0	S8/Sulfur	BNA	1363 ✓	855	3938 J
2.	56772-31-7	C16 H18 O2	BNA	1376 ✓	677	5394 J
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6.22

FORM II (continued)

S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
O. Box 818, Alexandria, Virginia 22313 - 703/557-2490

S-2

Sample Number
B2430

ORGANICS ANALYSIS DATA SHEET

aboratory Name: SAI / JKB
ab Sample ID No: 85-209 Q
mple Matrix: SOIL
ata Release Authorized By:

Case No: 2998
QC Report No: 2998-2-004
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-20-84 16:58
PERCENT MOISTURE: 14.2
CONC./DILUTION FACTOR: 1

P #	CAS #		ug/l or [✓ ug/kg] (circle one)
21A)	88-06-2	2,4,6- trichlorophenol	300 u
A)	59-50-7	p-chloro-m-cresol	430 u
A)	95-57-8	2- chlorophenol	165 u
31A)	120-83-2	2,4-dichlorophenol	300 u
A)	105-67-9	2,4-dimethylphenol	465 u
A)	88-75-5	2- nitrophenol	965 u
58A)	100-02-7	4-nitrophenol	1330 u
A)	51-28-5	2,4-dinitrophenol	1330 u
A)	534-52-1	4,6-dinitro-2-methylphenol	800 u
64A)	87-86-5	pentachlorophenol	765 u
A)	108-95-2	phenol	230 u
	65-85-0	benzoic acid	1960 u
	95-48-7	2-methylphenol	130 u
	108-39-4	4-methylphenol	500 u
	95-95-4	2,4,5-trichlorophenol	300 u
)	83-32-9	acenaphthene	30 u
)	92-87-5	benzidine	1800 u
B)	120-82-1	1,2,4-trichlorobenzene	100 u
)	118-74-1	hexachlorobenzene	130 u
))	67-72-1	hexachloroethane	265 u
8B)	111-44-4	bis(2-chloroethyl)ether	200 u
3)	91-58-7	2-chloronaphthalene	200 u
3)	95-50-1	1,2-dichlorobenzene	65 u
6B)	541-73-1	1,3-dichlorobenzene	200 u
3)	106-46-7	1,4-dichlorobenzene	65 u
B)	91-94-1	3,3'-dichlorobenzidine	330 u
5B)	121-14-2	2,4-dinitrotoluene	200 u
3)	606-20-2	2,6-dinitrotoluene	100 u
7B)	122-66-7	1,2-diphenylhydrazine	165 u
B)	206-44-0	fluoranthene	100 u
3)	7005-72-3	4-chlorophenyl phenyl ether	65 u
1B)	101-55-3	4-bromophenyl phenyl ether	65 u
2B)	39638-32-9	bis (2-chloroisopropyl) ether	500 u
3)	111-91-1	bis (2-chloroethoxy) methane	200 u

PP #	CAS #		ug/l or [✓ ug/kg] (circle one
(52B)	87-68-3	hexachlorobutadiene	165 u
(53B)	77-47-4	hexachlorocyclopentadiene	230
(54B)	78-59-1	isophorone	230 u
(55B)	91-20-3	naphthalene	65 u
(56B)	98-95-3	nitrobenzene	365 u
(61B)	62-75-9	N-nitrosodimethylamine	465 u
(62B)	86-30-6	N-nitrosodiphenylamine	30 u
(63B)	✓ 621-64-7	N-nitrosodipropylamine	565 u
(66B)	✓ 117-81-7	bis (2-ethylhexyl) phthalate	265 u
(67B)	✓ 85-68-7	benzyl butyl phthalate	465 u
(68B)	✓ 84-74-2	di-n-butyl phthalate	366
(69B)	117-84-0	di-n-octyl phthalate	265 u
(70B)	84-66-2	diethyl phthalate	65 u
(71B)	131-11-3	dimethyl phthalate	30 u
(72B)	56-55-3	benzo(a)anthracene	65 u
(73B)	50-32-8	benzo(a)pyrene	30 u
(74B)	205-99-2	benzo(b)fluoranthene	330 u
(75B)	207-08-9	benzo(k)fluoranthene	165 u
(76B)	218-01-9	chrysene	65 u
(77B)	208-96-8	acenaphthylene	65 u
(78B)	120-12-7	anthracene	30 u
(79B)	191-24-2	benzo(ghi)perylene	100 u
(80B)	86-73-7	fluorene	30 u
(81B)	85-01-8	phenanthrene	30 u
(82B)	53-70-3	dibenzo(a,h)anthracene	230 u
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	165 u
(84B)	129-00-0	pyrene	100 u
	62-53-3	aniline	265 u
	100-51-6	benzyl alcohol	365 u
	106-47-8	4-chloroaniline	230 u
	132-64-9	dibenzofuran	30 u
5-97	91-57-6	2-methylnaphthalene	130 u
	88-74-4	2-nitroaniline	200 u
	99-09-2	3-nitroaniline	330 u

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

Sample Number
B2430

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI/TRB
Lab Sample ID No: 85-2690
Sample Matrix: Soil
Data Release Authorized By:
Case No: 2998
QC Report No: 2998-2-004
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

VOLATILES

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7-12-84 10:27
PERCENT MOISTURE: 14.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(2V)	107-02-8	acrolein	100u
(3V)	107-13-1	acrylonitrile	15u
(4V) ✓	71-43-2	benzene	5u
(6V)	56-23-5	carbon tetrachloride	9u
(7V)	108-90-7	chlorobenzene	14u
(10V)	107-06-2	1,2-dichloroethane	3u
(11V)	71-55-6	1,1,1-trichloroethane	5u
(13V)	75-34-3	1,1-dichloroethane	5u
(14V)	79-00-5	1,1,2-trichloroethane	3u
(15V)	79-34-5	1,1,2,2-tetrachloroethane	11u
(16V)	75-00-3	chloroethane	5u
(19V)	110-75-8	2-chloroethylvinyl ether	7u
(23V) ✓	67-66-3	chloroform	3u
(29V)	75-35-4	1,1-dichloroethene	8u
(30V)	156-60-5	trans-1,2-dichloroethene	3u
(32V)	78-87-5	1,2-dichloropropane	10u
(33V)	10061-02-6	trans-1,3-dichloropropene	7u
	10061-01-05	cis-1,3-dichloropropene	5u
(38V) ✓	100-41-4	ethylbenzene	10u
(44V) ✓	75-09-2	methylene chloride	68
(45V)	74-87-3	chloromethane	57u
(46V)	74-83-9	bromomethane	2u
(47V)	75-25-2	bromoform	15u
(48V) ✓	75-27-4	bromodichloromethane	5u
(49V) ✓	75-69-4	fluorotrichloromethane	6u
(50V)	75-71-8	dichlorodifluoromethane	39u
(51V)	124-48-1	chlorodibromomethane	8u
(85V)	127-18-4	tetrachloroethene	15u
(86V)	108-88-3	toluene	15u
(87V)	79-01-6	trichloroethene	5u
(88V)	75-01-4	vinyl chloride	68u
	67-64-1	acetone	5u
	78-93-3	2-butanone	3u
	75-15-0	carbondisulfide	3u
	519-78-6	2-hexanone	23u
	108-10-1	4-methyl-2-pentanone	33u
	100-42-5	styrene	15u
	108-05-4	vinyl acetate	13u

PESTICIDES

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-24-84 16:48
PERCENT MOISTURE: 14.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(89P)	309-00-2	aldrin	0.73u
(90P)	60-57-1	dieldrin	0.[illegible]
(91P)	57-74-9	chlordane	3[illegible]
(92P)	50-29-3	4,4'-DDT	1.3u
(93P)	72-55-9	4,4'-DDE	0.[illegible]
(94P)	72-54-8	4,4'-DDD	0.[illegible]
(95P)	115-29-7	α-endosulfan	0.60u
(96P)	115-29-7	β-endosulfan	0.[illegible]
(97P)	1031-07-8	endosulfan sulfate	2.[illegible]
(98P)	72-20-8	endrin	2.[illegible]
(99P)	7421-93-4	endrin aldehyde	1.[illegible]
(100P)	76-44-8	heptachlor	0.[illegible]
(101P)	1024-57-3	heptachlor epoxide	0.74u
(102P)	319-84-6	α-BHC	0.[illegible]
(103P)	319-85-7	β-BHC	2.2u
(104P)	319-86-8	δ-BHC	0.74u
(105P)	58-89-9	γ-BHC (lindane)	0.9[illegible]
(106P)	53469-21-9	PCB-1242	166u
(107P)	11097-69-1	PCB-1254	11[illegible]
(108P)	11104-28-2	PCB-1221	6[illegible]
(109P)	11141-16-5	PCB-1232	333u
(110P)	12672-29-6	PCB-1248	1[illegible]
(111P)	11096-82-5	PCB-1260	[illegible]
(112P)	12674-11-2	PCB-1016	166u
(113P)	8001-35-2	toxaphene	3[illegible]

DIOXINS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-26-84 2:4
PERCENT MOISTURE: 14.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0.3[illegible]

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number B2430

Laboratory Name SAI / JRB
Case No: 2998
QC Report No: 2998-2-004

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No. or Retention Time	% Maximum Score Attained Mass Matching Routine (Specify: PURITY)	Estimated Concentration (ug/l or [✓ ug/kg])
1.	359-10-4	C2.H.CL.F2	VOA	687 ✓	653	48 J
2.	1073-06-9	C6.H4.BR.F	VOA	886 ✓	919	30 J
3.	110-83-8	C6. H10	SNA	188 ✓	632	28708J
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6/82

NVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
x 818, Alexandria, Virginia 22313 - 703/557-2490

5-3

Sample Number
B2431

ORGANICS ANALYSIS DATA SHEET

tory Name: SAI / JRB
mple ID No: 85-210Q
Matrix: SOIL
elease Authorized By:

Case No: 2998
QC Report No: 2998-2-005
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-13-84
DATE ANALYZED: 7-23-84 10:41
PERCENT MOISTURE: 78.5
CONC./DILUTION FACTOR: 1

CAS #		ug/l or [✓ ug/kg] (circle one)
88-06-2	2,4,6- trichlorophenol	300u
59-50-7	p-chloro-m-cresol	430u
95-57-8	2- chlorophenol	165u
120-83-2	2,4-dichlorophenol	300u
105-67-9	2,4-dimethylphenol	465u
88-75-5	2- nitrophenol	865u
100-02-7	4-nitrophenol	1330u
51-28-5	2,4-dinitrophenol	1330u
534-52-1	4,6-dinitro-2-methylphenol	800u
87-86-5	pentachlorophenol	765u
108-95-2	phenol	230u
65-85-0	benzoic acid	1960u
95-48-7	2-methylphenol	130u
108-39-4	4-methylphenol	500u
95-95-4	2,4,5-trichlorophenol	300u
83-32-9	acenaphthene	30u
92-87-5	benzidine	1800u
120-82-1	1,2,4-trichlorobenzene	100u
118-74-1	hexachlorobenzene	130u
67-72-1	hexachloroethane	265u
111-44-4	bis(2-chloroethyl)ether	200u
91-58-7	2-chloronaphthalene	200u
95-50-1	1,2-dichlorobenzene	65u
541-73-1	1,3-dichlorobenzene	200u
106-46-7	1,4-dichlorobenzene	65u
91-94-1	3,3'-dichlorobenzidine	330u
121-14-2	2,4-dinitrotoluene	200u
606-20-2	2,6-dinitrotoluene	100u
122-66-7	1,2-diphenylhydrazine	165u
206-44-0	fluoranthene	201
7005-72-3	4-chlorophenyl phenyl ether	65u
101-55-3	4-bromophenyl phenyl ether	65u
39638-32-9	bis (2-chloroisopropyl) ether	500u
111-91-1	bis (2-chloroethoxy) methane	200u

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(52B)	87-68-3	hexachlorobutadiene	165u
(53B)	77-47-4	hexachlorocyclopentadiene	230u
(54B)	78-59-1	isophorone	230u
(55B)	91-20-3	naphthalene	65u
(56B)	98-95-3	nitrobenzene	365u
(61B)	62-75-9	N-nitrosodimethylamine	465u
(62B)	86-30-6	N-nitrosodiphenylamine	30u
(63B)	621-64-7	N-nitrosodipropylamine	565u
(66B) ✓	117-81-7	bis (2-ethylhexyl) phthalate	1109
(67B)	85-68-7	benzyl butyl phthalate	465u
(68B) ✓	84-74-2	di-n-butyl phthalate	466
(69B)	117-84-0	di-n-octyl phthalate	265u
(70B)	84-66-2	diethyl phthalate	65u
(71B)	131-11-3	dimethyl phthalate	30u
(72B) ✓	56-55-3	benzo(a)anthracene	132
(73B) ✓	50-32-8	benzo(a)pyrene	188
(74B) ✓	205-99-2	benzo(b)fluoranthene Isom	211
(75B) ✓	207-08-9	benzo(k)fluoranthene [illegible]	~~211~~
(76B) ✓	218-01-9	chrysene	163
(77B)	208-96-8	acenaphthylene	65u
(78B)	120-12-7	anthracene	30u
(79B)	191-24-2	benzo(ghi)perylene	168
(80B)	86-73-7	fluorene	30u
(81B) ✓	85-01-8	phenanthrene	154
(82B)	53-70-3	dibenzo(a,h)anthracene	230u
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	103
(84B) ✓	129-00-0	pyrene	191
	62-53-3	aniline	265u
	100-51-6	benzyl alcohol	365u
5-100	106-47-8	4-chloroaniline	230u
	132-64-9	dibenzofuran	30u
	91-57-6	2-methylnaphthalene	130u
	88-74-4	2-nitroaniline	200u
	99-09-2	3-nitroaniline	330u

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
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Sample Number
62431

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI / JRB
Lab Sample ID No: 85-210 Q
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 2998
QC Report No: 2998-2-005
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7-12-84 11:09
PERCENT MOISTURE: 78.5
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l [✓ or ug/kg] (circle one)
(2V)	107-02-8	acrolein	100u
(3V)	107-13-1	acrylonitrile	15u
(4V) ✓	71-43-2	benzene	5u
(6V)	56-23-5	carbon tetrachloride	9u
(7V)	108-90-7	chlorobenzene	14u
(10V)	107-06-2	1,2-dichloroethane	3u
(11V)	71-55-6	1,1,1-trichloroethane	5u
(13V)	75-34-3	1,1-dichloroethane	5u
(14V)	79-00-5	1,1,2-trichloroethane	3u
(15V)	79-34-5	1,1,2,2-tetrachloroethane	11u
(16V)	75-00-3	chloroethane	5u
(19V)	110-75-8	2-chloroethylvinyl ether	7u
(23V) ✓	67-66-3	chloroform	3u
(29V)	75-35-4	1,1-dichloroethene	8u
(30V)	156-60-5	trans-1,2-dichloroethene	3u
(32V)	78-87-5	1,2-dichloropropane	10u
(33V)	10061-02-6	trans-1,3-dichloropropene	7u
	10061-01-05	cis-1,3-dichloropropene	5u
(38V) ✓	100-41-4	ethylbenzene	10 K ~~10u~~
(44V) ✓	75-09-2	methylene chloride	~~5~~
(45V)	74-87-3	chloromethane	57u
(46V)	74-83-9	bromomethane	2u
(47V)	75-25-2	bromoform	15u
(48V)	75-27-4	bromodichloromethane	5u
(49V)	75-69-4	fluorotrichloromethane	6u
(50V)	75-71-8	dichlorodifluoromethane	39u
(51V)	124-48-1	chlorodibromomethane	8u
(85V)	127-18-4	tetrachloroethene	15u
(86V) ✓	108-88-3	toluene	15u
(87V)	79-01-6	trichloroethene	5u
(88V)	75-01-4	vinyl chloride	68u
✓	67-64-1	acetone	241
	78-93-3	2-butanone	3u
	75-15-0	carbondisulfide	3u
	519-78-6	2-hexanone	23u
✓	108-10-1	4-methyl-2-pentanone	33u
	100-42-5	styrene	15u
	108-05-4	vinyl acetate	13u
✓	1330-20-7	total xylenes	12 K ~~12u~~

PESTICIDES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-13-84
DATE ANALYZED: 7-24-84 18:03
PERCENT MOISTURE: 78.5
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l [✓ or ug/k] (circle o
(89P)	309-00-2	aldrin	0.73
(90P)	60-57-1	dieldrin	0.52
(91P)	57-74-9	chlordane	33
(92P)	50-29-3	4,4'-DDT	1.3
(93P)	72-55-9	4,4'-DDE	0.95
(94P)	72-54-8	4,4'-DDD	0.83
(95P)	115-29-7	α-endosulfan	0.60
(96P)	115-29-7	β-endosulfan	0.83
(97P)	1031-07-8	endosulfan sulfate	2.3
(98P)	72-20-8	endrin	2.1
(99P)	7421-93-4	endrin aldehyde	1.2
(100P)	76-44-8	heptachlor	0.56
(101P)	1024-57-3	heptachlor epoxide	0.74
(102P)	319-84-6	α-BHC	0.51
(103P)	319-85-7	β-BHC	2.2
(104P)	319-86-8	δ-BHC	0.74
(105P)	58-89-9	γ-BHC (lindane)	0.49
(106P)	53469-21-9	PCB-1242	166
(107P)	11097-69-1	PCB-1254	166
(108P)	11104-28-2	PCB-1221	665
(109P)	11141-16-5	PCB-1232	333
(110P)	12672-29-6	PCB-1248	166
(111P)	11096-82-5	PCB-1260	83
(112P)	12674-11-2	PCB-1016	166
(113P)	8001-35-2	toxaphene	333

DIOXINS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-26-84 3:54
PERCENT MOISTURE: 78.5
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l [✓ or ug/k] (circle o
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NOT

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number
B2431

Laboratory Name SAI/JRB

Case No. 2998

Lab Report No. 2998-2-005

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No. or Retention Time	% Maximum Score Attained Mass Matching Spectrum (Specify) Purity	Estimated Concentration (ug/l or [✓ ug/kg])
1.	57-10-3	$C_{16}H_{32}O_2$	BNA	1310✓	790	399J
2.	77-90-7	$C_{20}H_{34}O_8$	BNA	1495✓	852	426J
3.		ukn. hydrocarb.	BNA	1632✓		634J
4.		ukn. hydrocarb.	BNA	1705✓		508J
5.		ukn. hydrocarb.	BNA	1792✓		724J
6.		ukn. hydrocarb.	BNA	1896✓		789J
7.		ukn. hydrocarb.	BNA	2023✓		733J
8.		ukn. hydrocarb.	BNA	2178✓		442J
9.	629-99-2	$C_{25}H_{52}$	BNA	2376✓	689	438J
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11.		NO VOA'S				
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6.12

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S-4

Sample Number
B2432

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI/JRB
Lab Sample ID No: 85-211 Q
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 2998
QC Report No: 2998-2-006
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-13-84
DATE ANALYZED: 7-23-84 11:44
PERCENT MOISTURE: 22.2
CONC./DILUTION FACTOR: 2

See Results sheet Date S.G.

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	600u
(22A)	59-50-7	p-chloro-m-cresol	860u
(24A)	95-57-8	2- chlorophenol	330u
(31A)	120-83-2	2,4-dichlorophenol	600u
(34A)	105-67-9	2,4-dimethylphenol	930u
(57A)	88-75-5	2- nitrophenol	1730u
(58A)	100-02-7	4-nitrophenol	2660u
(59A)	51-28-5	2,4-dinitrophenol	2660u
(60A)	534-52-1	4,6-dinitro-2-methylphenol	1600u
(64A)	87-86-5	pentachlorophenol	1530u
(65A)	108-95-2	phenol	460u
	65-85-0	benzoic acid	3920u
	95-48-7	2-methylphenol	260u
	108-39-4	4-methylphenol	1000u
	95-95-4	2,4,5-trichlorophenol	600u
(1B)	83-32-9	acenaphthene	60u
(5B)	92-87-5	benzidine	3600u
(8B)	120-82-1	1,2,4-trichlorobenzene	200u
(9B)	118-74-1	hexachlorobenzene	260u
(12B)	67-72-1	hexachloroethane	530u
(18B)	111-44-4	bis(2-chloroethyl)ether	400u
(20B)	91-58-7	2-chloronaphthalene	400u
(25B)	95-50-1	1,2-dichlorobenzene	130u
(26B)	541-73-1	1,3-dichlorobenzene	400u
(27B)	106-46-7	1,4-dichlorobenzene	130u
(28B)	91-94-1	3,3'-dichlorobenzidine	660u
(35B)	121-14-2	2,4-dinitrotoluene	400u
(36B)	606-20-2	2,6-dinitrotoluene	200u
(37B)	122-66-7	1,2-diphenylhydrazine	330u
(39B)	206-44-0 ✓	fluoranthene	338
(40B)	7005-72-3	4-chlorophenyl phenyl ether	130u
(41B)	101-55-3	4-bromophenyl phenyl ether	130u
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	1000u
(43B)	111-91-1	bis (2-chloroethoxy) methane	400u

PP #	CAS #		ug/l or [✓ ug/k] (circle
(52B)	87-68-3	hexachlorobutadiene	33
(53B)	77-47-4	hexachlorocyclopentadiene	46
(54B)	78-59-1	isophorone	46
(55B)	91-20-3	naphthalene	13.
(56B)	98-95-3	nitrobenzene	73
(61B)	62-75-9	N-nitrosodimethylamine	93
(62B)	86-30-6	N-nitrosodiphenylamine	60
(63B)	621-64-7	N-nitrosodipropylamine	1130
(66B)	117-81-7 ✓	bis (2-ethylhexyl) phthalate	623
(67B)	85-68-7 ✓	benzyl butyl phthalate	504
(68B)	84-74-2 ✓	di-n-butyl phthalate	153
(69B)	117-84-0	di-n-octyl phthalate	530
(70B)	84-66-2	diethyl phthalate	130
(71B)	131-11-3	dimethyl phthalate	60
(72B)	56-55-3 ✓	benzo(a)anthracene	155
(73B)	50-32-8 ✓	benzo(a)pyrene	154
(74B)	205-99-2 ✓	benzo(b)fluoranthene 660 K	~~667~~
(75B)	207-08-9 ✓	benzo(k)fluoranthene 330 K	~~33~~
(76B)	218-01-9 ✓	chrysene	18
(77B)	208-96-8	acenaphthylene	13
(78B)	120-12-7 ✓	anthracene 60 K	~~232~~
(79B)	191-24-2	benzo(ghi)perylene	200
(80B)	86-73-7	fluorene	60
(81B)	85-01-8 ✓	phenanthrene	383
(82B)	53-70-3	dibenzo(a,h)anthracene	460u
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	330u
(84B)	129-00-0 ✓	pyrene	311
	62-53-3	aniline	530u
	100-51-6	benzyl alcohol	730u
	106-47-8	4-chloroaniline	460u
	132-64-9	dibenzofuran	60u
	91-57-6 ✓	2-methylnaphthalene	267
	88-74-4	2-nitroaniline	400u
	99-09-2	3-nitroaniline	660u
	100-01-6	4-nitroaniline	1460u

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

Sample Number
B2432

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI / JRB
Lab Sample ID No: 85-2111Q
Sample Matrix: SOIL
Data Release Authorized By:

Case No: 2998
QC Report No: 2998-2-006
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

VOLATILES

*CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: N/A
DATE ANALYZED: 7-12-84 11:49
PERCENT MOISTURE: 22.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(2V)	107-02-8	acrolein	100u
(3V)	107-13-1	acrylonitrile	15 u
(4V) ✓	71-43-2	benzene	5u
(6V)	56-23-5	carbon tetrachloride	9u
(7V)	108-90-7	chlorobenzene	14u
(10V)	107-06-2	1,2-dichloroethane	3u
(11V)	71-55-6	1,1,1-trichloroethane	5u
(13V)	75-34-3	1,1-dichloroethane	5u
(14V)	79-00-5	1,1,2-trichloroethane	3u
(15V)	79-34-5	1,1,2,2-tetrachloroethane	11u
(16V)	75-00-3	chloroethane	5u
(19V)	110-75-8	2-chloroethylvinyl ether	7u
(23V) ✓	67-66-3	chloroform	3u
(29V)	75-35-4	1,1-dichloroethene	8u
(30V)	156-60-5	trans-1,2-dichloroethene	3u
(32V)	78-87-5	1,2-dichloropropane	10u
(33V)	10061-02-6	trans-1,3-dichloropropene	7u
	10061-01-05	cis-1,3-dichloropropene	5u
(38V)	100-41-4	ethylbenzene	10u
(44V) ✓	75-09-2	methylene chloride	228
(45V)	74-87-3	chloromethane	57u
(46V)	74-83-9	bromomethane	2u
(47V)	75-25-2	bromoform	15u
(48V)	75-27-4	bromodichloromethane	5u
(49V)	75-69-4	fluorotrichloromethane	6u
(50V)	75-71-8	dichlorodifluoromethane	39u
(51V)	124-48-1	chlorodibromomethane	8u
(85V)	127-18-4	tetrachloroethene	15u
(86V)	108-88-3	toluene	15u
(87V) ✓	79-01-6	trichloroethene	5u
(88V)	75-01-4	vinyl chloride	68u
	67-64-1	acetone	5u
	78-93-3	2-butanone	3u
	75-15-0	carbondisulfide	3u
	519-78-6	2-hexanone	23u
	108-10-1	4-methyl-2-pentanone	33u
	100-42-5	styrene	15u
	108-05-4	vinyl acetate	13u
	1330-20-7	total xylenes	15u

PESTICIDES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-13-84
DATE ANALYZED: 7-24-84 19:18
PERCENT MOISTURE: 22.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(89P)	309-00-2	aldrin	0.73 u
(90P)	60-57-1	dieldrin	0.52 u
(91P)	57-74-9	chlordane	33 u
(92P)	50-29-3	4,4'-DDT	6.0
(93P)	72-55-9	4,4'-DDE	0.95 u
(94P)	72-54-8	4,4'-DDD	0.83 u
(95P)	115-29-7	α-endosulfan	0.60 u
(96P)	115-29-7	β-endosulfan	0.83 u
(97P)	1031-07-8	endosulfan sulfate	2.3 u
(98P)	72-20-8	endrin	2.1 u
(99P)	7421-93-4	endrin aldehyde	1.2 u
(100P)	76-44-8	heptachlor	0.56 u
(101P)	1024-57-3	heptachlor epoxide	0.74 u
(102P)	319-84-6	α-BHC	0.51 u
(103P)	319-85-7	β-BHC	2.2 u
(104P)	319-86-8	δ-BHC	0.74 u
(105P)	58-89-9	γ-BHC (lindane)	0.49 u
(106P)	53469-21-9	PCB-1242	166 u
(107P)	11097-69-1	PCB-1254	166 u
(108P)	11104-28-2	PCB-1221	665 u
(109P)	11141-16-5	PCB-1232	333 u
(110P)	12672-29-6	PCB-1248	166 u
(111P)	11096-82-5	PCB-1260	83 u
(112P)	12674-11-2	PCB-1016	166 u
(113P)	8001-35-2	toxaphene	333 u

DIOXINS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-26-84 5:02
PERCENT MOISTURE: 22.2
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	~~NeT~~ Neg

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Numb
B243

Laboratory Name SAI/JRB
Case No. 2998
QC Report No. 2998-2-006

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No. or Retention Time	% Maximum Score Attained Mass Matching Software (Specify: purity)	Estimat Concentr (ug/l or g
1.	620-1637-9	$C_{11} H_{24}$	BNA	509 ✓	647	767
2.						
3.		NO VOA'S				
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FORM II (continued)

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

Soil Blank

Sample Number
B 2433

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI / JKB
Lab Sample ID No: Field BlANK 85-2120
Sample Matrix: SOIL
Data Release Authorized By: V R Wisk

Case No: 2998
QC Report No: 2998-2-007
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-20-84 15:54
PERCENT MOISTURE: 22
CONC./DILUTION FACTOR: 1

See [illegible] Data Sheet

PP #	CAS #		ug/l [✓ or ug/kg] (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	300 u
(22A)	59-50-7	p-chloro-m-cresol	430 u
(24A)	95-57-8	2- chlorophenol	165 u
(31A)	120-83-2	2,4-dichlorophenol	300 u
(34A)	105-67-9	2,4-dimethylphenol	465 u
(57A)	88-75-5	2- nitrophenol	265 u
(58A)	100-02-7	4-nitrophenol	1330 u
(59A)	51-28-5	2,4-dinitrophenol	1330 u
(60A)	534-52-1	4,6-dinitro-2-methylphenol	800 u
(64A)	87-86-5	pentachlorophenol	765 u
(65A)	108-95-2	phenol	230 u
---	65-85-0	benzoic acid	1960 u
	95-48-7	2-methylphenol	130 u
	108-39-4	4-methylphenol	500 u
	95-95-4	2,4,5-trichlorophenol	300 u
B)	83-32-9	acenaphthene	30 u
(5B)	92-87-5	benzidine	1800 u
8B)	120-82-1	1,2,4-trichlorobenzene	100 u
9B)	118-74-1	hexachlorobenzene	130 u
(12B)	67-72-1	hexachloroethane	265 u
18B)	111-44-4	bis(2-chloroethyl)ether	200 u
20B)	91-58-7	2-chloronaphthalene	200 u
(25B)	95-50-1	1,2-dichlorobenzene	65 u
26B)	541-73-1	1,3-dichlorobenzene	200 u
27B)	106-46-7	1,4-dichlorobenzene	65 u
(28B)	91-94-1	3,3'-dichlorobenzidine	330 u
35B)	121-14-2	2,4-dinitrotoluene	200 u
(36B)	606-20-2	2,6-dinitrotoluene	100 u
(37B)	122-66-7	1,2-diphenylhydrazine	165 u
39B)	206-44-0	fluoranthene	100 u
(40B)	7005-72-3	4-chlorophenyl phenyl ether	65 u
41B)	101-55-3	4-bromophenyl phenyl ether	65 u
42B)	39638-32-9	bis (2-chloroisopropyl) ether	500 u
(43B)	111-91-1	bis (2-chloroethoxy) methane	200 u

PP #	CAS #		ug/l
(52B)	87-68-3	hexachlorobutadiene	16
(53B)	77-47-4	hexachlorocyclopentadiene	[illegible]
(54B)	78-59-1	isophorone	[illegible]
(55B)	91-20-3	naphthalene	6
(56B)	98-95-3	nitrobenzene	[illegible]
(61B)	62-75-9	N-nitrosodimethylamine	465
(62B)	86-30-6	N-nitrosodiphenylamine	30
(63B)	621-6[illegible]	N-nitrosodipropylamine	[illegible]
(66B)	117-8[illegible]	bis (2-ethylhexyl) phthalate	2
(67B)	85-68-7	benzyl butyl phthalate	41
(68B)	84-7[illegible]-2	di-n-butyl phthalate	6
(69B)	117-84-0	di-n-octyl phthalate	2
(70B)	84-66-2	diethyl phthalate	[illegible]
(71B)	131-11-3	dimethyl phthalate	[illegible]
(72B)	56-55-3	benzo(a)anthracene	65
(73B)	50-32-8	benzo(a)pyrene	[illegible]
(74B)	205-99-2	benzo(b)fluoranthene	3
(75B)	207-08-9	benzo(k)fluoranthene	165
(76B)	218-01-9	chrysene	6
(77B)	208-96-8	acenaphthylene	6
(78B)	120-12-7	anthracene	30
(79B)	191-24-2	benzo(ghi)perylene	1
(80B)	86-73-7	fluorene	30
(81B)	85-01-8	phenanthrene	30
(82B)	53-70-3	dibenzo(a,h)anthracene	231
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	165
(84B)	129-00-0	pyrene	10
	62-53-3	aniline	26
	100-51-6	benzyl alcohol	365
	106-47-8	4-chloroaniline	23
	132-64-9	dibenzofuran	[illegible]
	91-57-6	2-methylnaphthalene	130
	88-74-4	2-nitroaniline	20
	99-09-2	3-nitroaniline	330

U.S. ENVIRONMENTAL PROTECTION AGENCY
P.O. Box 818, Alexandria, Virginia 22313 - 703/557-2490

Sample Number
B 2433

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: SAI / JRB
Lab Sample ID No: 85-2180
Sample Matrix: SOIL
Data Release Authorized By: W. Vick

Case No: 2998
QC Report No: 2998-2-007
Contract No.: 68-01-6787
Date Sample Received: 7-11-84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7-12-84 12:31
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or [✓ ug/kg] (circle one)
(2V)	107-02-8	acrolein	100u
(3V)	107-13-1	acrylonitrile	15u
(4V) ✓	71-43-2	benzene	5u
(6V)	56-23-5	carbon tetrachloride	9u
(7V)	108-90-7	chlorobenzene	14u
(10V)	107-06-2	1,2-dichloroethane	3u
(11V)	71-55-6	1,1,1-trichloroethane	5u
(13V)	75-34-3	1,1-dichloroethane	5u
(14V)	79-00-5	1,1,2-trichloroethane	3u
(15V)	79-34-5	1,1,2,2-tetrachloroethane	11u
(16V)	75-00-3	chloroethane	5u
(19V)	110-75-8	2-chloroethylvinyl ether	7u
(23V) ✓	67-66-3	chloroform	3u
(29V)	75-35-4	1,1-dichloroethene	8u
(30V)	156-60-5	trans-1,2-dichloroethene	3u
(32V)	78-87-5	1,2-dichloropropane	10u
(33V)	10061-02-6	trans-1,3-dichloropropene	7u
	10061-01-05	cis-1,3-dichloropropene	5u
(38V)	100-41-4	ethylbenzene	10u
(44V) ✓	75-09-2	methylene chloride	3u
(45V)	74-87-3	chloromethane	57u
(46V)	74-83-9	bromomethane	2u
(47V)	75-25-2	bromoform	15u
(48V)	75-27-4	bromodichloromethane	5u
(49V) ✓	75-69-4	fluorotrichloromethane	6u
(50V)	75-71-8	dichlorodifluoromethane	39u
(51V)	124-48-1	chlorodibromomethane	8u
(85V)	127-18-4	tetrachloroethene	15u
(86V) ✓	108-88-3	toluene	15u
(87V) ✓	79-01-6	trichloroethene	5u
(88V)	75-01-4	vinyl chloride	68u
	67-64-1	acetone	5u
	78-93-3	2-butanone	3u
	75-15-0	carbondisulfide	3u
	519-78-6	2-hexanone	23u
	108-10-1	4-methyl-2-pentanone	33u
	100-42-5	styrene	15u
	108-05-4	vinyl acetate	13u
	1330-20-7	total xylenes	18u

PESTICIDES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-19-84 21:18
PERCENT MOISTURE: 22
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or ug/ (circle
(89P)	309-00-2	aldrin	0.7
(90P)	60-57-1	dieldrin	0.5
(91P)	57-74-9	chlordane	33
(92P)	50-29-3	4,4'-DDT	1.3
(93P)	72-55-9	4,4'-DDE	0.9
(94P)	72-54-8	4,4'-DDD	0.8
(95P)	115-29-7	α-endosulfan	0.6
(96P)	115-29-7	β-endosulfan	0.8
(97P)	1031-07-8	endosulfan sulfate	2.
(98P)	72-20-8	endrin	2.
(99P)	7421-93-4	endrin aldehyde	1.2
(100P)	76-44-8	heptachlor	0.5
(101P)	1024-57-3	heptachlor epoxide	0.7
(102P)	319-84-6	α-BHC	0.
(103P)	319-85-7	β-BHC	2.2
(104P)	319-86-8	δ-BHC	0.7
(105P)	58-89-9	γ-BHC (lindane)	0.4
(106P)	53469-21-9	PCB-1242	166
(107P)	11097-69-1	PCB-1254	166
(108P)	11104-28-2	PCB-1221	66
(109P)	11141-16-5	PCB-1232	33
(110P)	12672-29-6	PCB-1248	16
(111P)	11096-82-5	PCB-1260	9
(112P)	12674-11-2	PCB-1016	16
(113P)	8001-35-2	toxaphene	33

DIOXINS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7-12-84
DATE ANALYZED: 7-26-84 00:3
PERCENT MOISTURE: 22
CONC./DILUTION FACTOR: 1

PP #	CAS #		ug/l or ug/ (circle
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	0

ORGANICS ANALYSIS DATA SHEET - Page 3

Sample Number B243

Laboratory Name SAI/JRB

Case No 2998

QC Report No 2998-2-007

B. Tentatively Identified Compounds

	CAS #	Compound Name	Fraction	Scan No. or Retention Time	% Maximum Score Attained Mass Matching Routine (Specify): purity	Estimated Concentration (ug/l or
1.	110-83-8	Cyclohexene	BNA	187 ✓	915	67,05
2.						
3.						
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30.						

FORM II (continued)

GW-1
downgradient

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

Sample Number
B 2434

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG, INC.
Case No: 2998
Lab Sample ID No: 07/111993
QC Report No:
Sample Matrix: WATER
Contract No.: 68-01-6369
Data Release Authorized By:
Date Sample Received: 7/11/84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/19/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR:

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	~~10 U~~
(22A)	59-50-7	p-chloro-m-cresol	10 U
(24A)	95-57-8	2- chlorophenol	10 U
(31A)	120-83-2	2,4-dichlorophenol	~~10~~ U
(34A)	105-67-9	2,4-dimethylphenol	10 U
(57A)	88-75-5	2- nitrophenol	~~20 U~~
(58A)	100-02-7	4-nitrophenol	~~50 U~~
(59A)	51-28-5	2,4-dinitrophenol	~~50 U~~
(60A)	534-52-1	4,6-dinitro-2-methylphenol	~~20 U~~
(64A)	87-86-5	pentachlorophenol	~~10 U~~
(65A)	108-95-2	phenol	186
	65-85-0	benzoic acid	~~100 U~~
	95-48-7	2-methylphenol	5 U
	108-39-4	4-methylphenol	5 U
	95-95-4	2,4,5-trichlorophenol	100 U
(1B)	83-32-9	acenaphthene	10 U
(5B)	92-87-5	benzidine	40 U
(8B)	120-82-1	1,2,4-trichlorobenzene	10 U
(9B)	118-74-1	hexachlorobenzene	10 U
(12B)	67-72-1	hexachloroethane	10 U
(18B)	111-44-4	bis(2-chloroethyl)ether	10 U
(20B)	91-58-7	2-chloronaphthalene	0.29
(25B)	95-50-1	1,2-dichlorobenzene	10 U
(26B)	541-73-1	1,3-dichlorobenzene	10 U
(27B)	106-46-7	1,4-dichlorobenzene	10 U
(28B)	91-94-1	3,3'-dichlorobenzidine	10 U
(35B)	121-14-2	2,4-dinitrotoluene	20 U
(36B)	606-20-2	2,6-dinitrotoluene	20 U
(37B)	122-66-7	1,2-diphenylhydrazine	20 U
(39B)	206-44-0	fluoranthene	10 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	10 U
(41B)	101-55-3	4-bromophenyl phenyl ether	10 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	20 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	20 U

December 1983

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	10 U
(53B)	77-47-4	hexachlorocyclopentadiene	~~10 U~~
(54B)	78-59-1	isophorone	10 U
(55B)	91-20-3	naphthalene	0.21
(56B)	98-95-3	nitrobenzene	10 U
(61B)	62-75-9	N-nitrosodimethylamine	10 U
(62B)	86-30-6	N-nitrosodiphenylamine	10 U
(63B)	621-64-7	N-nitrosodipropylamine	10 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	5907
(67B)	85-68-7	benzyl butyl phthalate	10 U
(68B)	84-74-2	di-n-butyl phthalate	1358
(69B)	117-84-0	di-n-octyl phthalate	10 U
(70B)	84-66-2	diethyl phthalate	10 U
(71B)	131-11-3	dimethyl phthalate	10 U
(72B)	56-55-3	benzo(a)anthracene	10 U
(73B)	50-32-8	benzo(a)pyrene	20 U
(74B)	205-99-2	benzo(b)fluoranthene	20 U
(75B)	207-08-9	benzo(k)fluoranthene	20 U
(76B)	218-01-9	chrysene	20 U
(77B)	208-96-8	acenaphthylene	10 U
(78B)	120-12-7	anthracene	10 U
(79B)	191-24-2	benzo(ghi)perylene	20 U
(80B)	86-73-7	fluorene	10 U
(81B)	85-01-8	phenanthrene	2.17
(82B)	53-70-3	dibenzo(a,h)anthracene	~~20 U~~
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	20 U
(84B)	129-00-0	pyrene	10 U
	62-53-3	aniline	5 U
	100-51-6	benzyl alcohol	20 U
	106-47-8	4-chloroaniline	50 U
	132-64-9	dibenzofuran	10 U
	91-57-6	2-methylnaphthalene	0.45
	88-74-4	2-nitroaniline	100 U
	99-09-2	3-nitroaniline	100 U
	100-01-6	4-nitroaniline	100 U

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

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

Sample Number: B24344

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07 / 111993
Sample Matrix: WATER
Data Release Authorized By:

Case No: 2998
QC Report No:
Contract No: 68-01-6869
Date Sample Received: 7/11/84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7/13/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: NA

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(2V)	107-02-8	acrolein	100 U
(3V)	107-13-1	acrylonitrile	100 U
(4V)	71-43-2	benzene	5 U
(6V)	56-23-5	carbon tetrachloride	5 U
(7V)	108-90-7	chlorobenzene	5 U
(10V)	107-06-2	1,2-dichloroethane	1 U
(11V)	71-55-6	1,1,1-trichloroethane	5 U
(13V)	75-34-3	1,1-dichloroethane	5 U
(14V)	79-00-5	1,1,2-trichloroethane	5 U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	10 U
(16V)	75-00-3	chloroethane	10 U
(19V)	110-75-8	2-chloroethylvinyl ether	10 U
(23V)	67-66-3	chloroform	5 U
(29V)	75-35-4	1,1-dichloroethene	5 U
(30V)	156-60-5	trans-1,2-dichloroethene	5 U
(32V)	78-87-5	1,2-dichloropropane	10 U
(33V)	10061-02-6	trans-1,3-dichloropropene	5 U
	10061-01-05	cis-1,3-dichloropropene	5 U
(38V)	100-41-4	ethylbenzene	5 U
(44V)	75-09-2	methylene chloride	ND B
(45V)	74-87-3	chloromethane	10 U
(46V)	74-83-9	bromomethane	10 U
(47V)	75-25-2	bromoform	10 U
(48V)	75-27-4	bromodichloromethane	5 U
(49V)	75-69-4	fluorotrichloromethane	10 U
(50V)	75-71-8	dichlorodifluoromethane	10 U
(51V)	124-48-1	chlorodibromomethane	10 U
(85V)	127-18-4	tetrachloroethene	5 U
(86V)	108-88-3	toluene	ND B
(87V)	79-01-6	trichloroethene	5 U
(88V)	75-01-4	vinyl chloride	10 U
	67-64-1	acetone	24
	78-93-3	2-butanone	15
	75-15-0	carbondisulfide	(9.4)
	519-78-6	2-hexanone	5 U
	108-10-1	4-methyl-2-pentanone	5 U
	100-42-5	styrene	5 U
	108-05-4	vinyl acetate	5 U
	1330-20-7	total xylenes	5 U

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/23-20/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 12.5 mL/5L 2.5 mL/5L

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(89P)	309-00-2	aldrin	0.005	U
(90P)	60-57-1	dieldrin	0.005	U
(91P)	57-74-9	chlordane	0.050	U
(92P)	50-29-3	4,4'-DDT	0.050	U
(93P)	72-55-9	4,4'-DDE	0.0050	U
(94P)	72-54-8	4,4'-DDD	0.30	
(95P)	115-29-7	α-endosulfan	0.005	U
(96P)	115-29-7	β-endosulfan	0.005	U
(97P)	1031-07-8	endosulfan sulfate	0.010	U
(98P)	72-20-8	endrin	0.005	U
(99P)	7421-93-4	endrin aldehyde	0.010	U
(100P)	76-44-8	heptachlor	0.005	U
(101P)	1024-57-3	heptachlor epoxide	0.005	U
(102P)	319-84-6	α-BHC	0.005	U
(103P)	319-85-7	β-BHC	0.005	U
(104P)	319-86-8	δ-BHC	0.005	U
(105P)	58-89-9	γ-BHC (lindane)	0.072	
(106P)	53469-21-9	PCB-1242	0.050	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	0.10	U
(109P)	11141-16-5	PCB-1232	0.10	U
(110P)	12672-29-6	PCB-1248	0.10	U
(111P)	11096-82-5	PCB-1260	0.20	U
(112P)	12674-11-2	PCB-1016	0.050	U
(113P)	8001-35-2	toxaphene	0.50	U

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

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

Sample Number B2434

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07 111993
Sample Matrix: WATER
Data Release Authorized By:
Case No: 2998
QC Report No:
Contract No.: 68-01-6869
Date Sample Received: 7/11/84

PESTICIDE CONFIRMATIONS

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/30/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 12.5 mL/5 L

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(89P)	309-00-2	aldrin		
(90P)	60-57-1	dieldrin		
(91P)	57-74-9	chlordane		
(92P)	50-29-3	4,4'-DDT		
(93P)	72-55-9	4,4'-DDE		
(94P)	72-54-8	4,4'-DDD	0.010	U
(95P)	115-29-7	α-endosulfan		
(96P)	115-29-7	β-endosulfan		
(97P)	1031-07-8	endosulfan sulfate		
(98P)	72-20-8	endrin		
(99P)	7421-93-4	endrin aldehyde		
(100P)	76-44-8	heptachlor		
(101P)	1024-57-3	heptachlor epoxide		
(102P)	319-84-6	α-BHC		
(103P)	319-85-7	β-BHC		
(104P)	319-86-8	δ-BHC		
(105P)	58-89-9	γ-BHC (lindane)		
(106P)	53469-21-9	PCB-1242	0.015	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221		
(109P)	11141-16-5	PCB-1232		
(110P)	12672-29-6	PCB-1248		
(111P)	11096-82-5	PCB-1260		
(112P)	12674-11-2	PCB-1016		
(113P)	8001-35-2	toxaphene		

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

SW - upgradient

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

Sample Number
B2435

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Case No: 2998
Lab Sample ID No: 07 111997
QC Report No:
Sample Matrix: WATER
Contract No.: 68-01-6869
Data Release Authorized By: Stan Hayar
Date Sample Received: 7/11/84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: LOW [✓ MEDIUM] HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/19/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR:

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	10 U
(22A)	59-50-7	p-chloro-m-cresol	10 U
(24A)	95-57-8	2- chlorophenol	10 U
(31A)	120-83-2	2,4-dichlorophenol	10 U
(34A)	105-67-9	2,4-dimethylphenol	10 U
(57A)	88-75-5	2- nitrophenol	20 U
(58A)	100-02-7	4-nitrophenol	50 U
(59A)	51-28-5	2,4-dinitrophenol	50 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	20 U
(64A)	87-86-5	pentachlorophenol	10 U
(65A)	108-95-2	phenol	10 U
	65-85-0	benzoic acid	100 U
	95-48-7	2-methylphenol	5 U
	108-39-4	4-methylphenol	5 U
	95-95-4	2,4,5-trichlorophenol	100 U
(1B)	83-32-9	acenaphthene	10 U
(5B)	92-87-5	benzidine	40 U
(8B)	120-82-1	1,2,4-trichlorobenzene	10 U
(9B)	118-74-1	hexachlorobenzene	10 U
(12B)	67-72-1	hexachloroethane	10 U
(18B)	111-44-4	bis(2-chloroethyl)ether	10 U
(20B)	91-58-7	2-chloronaphthalene	10 U
(25B)	95-50-1	1,2-dichlorobenzene	10 U
(26B)	541-73-1	1,3-dichlorobenzene	10 U
(27B)	106-46-7	1,4-dichlorobenzene	10 U
(28B)	91-94-1	3,3'-dichlorobenzidine	10 U
(35B)	121-14-2	2,4-dinitrotoluene	20 U
(36B)	606-20-2	2,6-dinitrotoluene	20 U
(37B)	122-66-7	1,2-diphenylhydrazine	20 U
(39B)	206-44-0	fluoranthene	10 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	10 U
(41B)	101-55-3	4-bromophenyl phenyl ether	10 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	20 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	20 U

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	10 U
(53B)	77-47-4	hexachlorocyclopentadiene	10 U
(54B)	78-59-1	isophorone	10 U
(55B)	91-20-3	naphthalene	10 U
(56B)	98-95-3	nitrobenzene	10 U
(61B)	62-75-9	N-nitrosodimethylamine	10 U
(62B)	86-30-6	N-nitrosodiphenylamine	10 U
(63B)	621-64-7	N-nitrosodipropylamine	10 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	10 U
(67B)	85-68-7	benzyl butyl phthalate	10 U
(68B)	84-74-2	di-n-butyl phthalate	6 J
(69B)	117-84-0	di-n-octyl phthalate	10 U
(70B)	84-66-2	diethyl phthalate	10 U
(71B)	131-11-3	dimethyl phthalate	10 U
(72B)	56-55-3	benzo(a)anthracene	10 U
(73B)	50-32-8	benzo(a)pyrene	20 U
(74B)	205-99-2	benzo(b)fluoranthene	20 U
(75B)	207-08-9	benzo(k)fluoranthene	20 U
(76B)	218-01-9	chrysene	20 U
(77B)	208-96-8	acenaphthylene	10 U
(78B)	120-12-7	anthracene	10 U
(79B)	191-24-2	benzo(ghi)perylene	20 U
(80B)	86-73-7	fluorene	10 U
(81B)	85-01-8	phenanthrene	10 U
(82B)	53-70-3	dibenzo(a,h)anthracene	20 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	20 U
(84B)	129-00-0	pyrene	10 U
	62-53-3	aniline	5 U
	100-51-6	benzyl alcohol	20 U
	106-47-8	4-chloroaniline	50 U
	132-64-9	dibenzofuran	10 U
	91-57-6	2-methylnaphthalene	20 U
	88-74-4	2-nitroaniline	100 U
	99-09-2	3-nitroaniline	100 U
	100-01-6	4-nitroaniline	100 U

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

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

Sample Number
B2435

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07/111997
Sample Matrix: WATER
Data Release Authorized By:

Case No: 2998
QC Report No:
Contract No: 68-01-6769
Date Sample Received: 7/11/84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7/13/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: NA

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(2V)	107-02-8	acrolein	100	U
(3V)	107-13-1	acrylonitrile	100	U
(4V)	71-43-2	benzene	4.1	
(6V)	56-23-5	carbon tetrachloride	5	U
(7V)	108-90-7	chlorobenzene	5	U
(10V)	107-06-2	1,2-dichloroethane	1	U
(11V)	71-55-6	1,1,1-trichloroethane	5	U
(13V)	75-34-3	1,1-dichloroethane	5	U
(14V)	79-00-5	1,1,2-trichloroethane	5	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	10	U
(16V)	75-00-3	chloroethane	10	U
(19V)	110-75-8	2-chloroethylvinyl ether	10	U
(23V)	67-66-3	chloroform	5	U
(29V)	75-35-4	1,1-dichloroethene	1.5	
(30V)	156-60-5	trans-1,2-dichloroethene	5	U
(32V)	78-87-5	1,2-dichloropropane	10	U
(33V)	10061-02-6	trans-1,3-dichloropropene	5	U
	10061-01-05	cis-1,3-dichloropropene	5	U
(38V)	100-41-4	ethylbenzene	5	U
(44V)	75-09-2	methylene chloride	ND	B
(45V)	74-87-3	chloromethane	10	U
(46V)	74-83-9	bromomethane	10	U
(47V)	75-25-2	bromoform	10	U
(48V)	75-27-4	bromodichloromethane	5	U
(49V)	75-69-4	fluorotrichloromethane	10	U
(50V)	75-71-8	dichlorodifluoromethane	10	U
(51V)	124-48-1	chlorodibromomethane	10	U
(85V)	127-18-4	tetrachloroethene	5	U
(86V)	108-88-3	toluene	31.3	
(87V)	79-01-6	trichloroethene	5	U
(88V)	75-01-4	vinyl chloride	10	U
	67-64-1	acetone	ND	B
	78-93-3	2-butanone	35.3	
	75-15-0	carbondisulfide	ND	B
	519-78-6	2-hexanone	5	U
	108-10-1	4-methyl-2-pentanone	5	U
	100-42-5	styrene	5	U
	108-05-4	vinyl acetate	5	U
	1330-20-7	total xylenes	5	U

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/20/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 2.5 mL / 0.5 L

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)		
(89P)	309-00-2	aldrin	0.0050		
(90P)	60-57-1	dieldrin	0.023	C	
(91P)	57-74-9	chlordane	0.050	U	
(92P)	50-29-3	4,4'-DDT	0.036		
(93P)	72-55-9	4,4'-DDE	0.0050	U	
(94P)	72-54-8	4,4'-DDD	0.010	K	—
(95P)	115-29-7	α-endosulfan	0.005	U	
(96P)	115-29-7	β-endosulfan	0.005	U	
(97P)	1031-07-8	endosulfan sulfate	0.010	U	
(98P)	72-20-8	endrin	0.032		-
(99P)	7421-93-4	endrin aldehyde	0.0085		-
(100P)	76-44-8	heptachlor	0.012		-
(101P)	1024-57-3	heptachlor epoxide	0.005	U	
(102P)	319-84-6	α-BHC	0.005	U	
(103P)	319-85-7	β-BHC	0.005	U	
(104P)	319-86-8	δ-BHC	0.005	U	
(105P)	58-89-9	γ-BHC (lindane)	0.036		-
(106P)	53469-21-9	PCB-1242	0.050	U	
(107P)	11097-69-1	PCB-1254	0.10	U	
(108P)	11104-28-2	PCB-1221	0.10	U	
(109P)	11141-16-5	PCB-1232	0.10	U	
(110P)	12672-29-6	PCB-1248	0.10	U	
(111P)	11096-82-5	PCB-1260	0.20	U	
(112P)	12674-11-2	PCB-1016	0.050	U	
(113P)	8001-35-2	toxaphene	0.50	U	

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

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B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

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

Sample Number
B 2435

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG
Lab Sample ID No: 07 / 111997
Sample Matrix: WATER
Data Release Authorized By: Stan Hz

Case No: 2998
QC Report No:
Contract No.: 68-01-6869
Date Sample Received: 7/11/84

PESTICIDE
CONFIRMATIONS

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/30/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 2.5 mL/0.5 L

PP #	CAS #			[✓ ug/l] or ug/kg (circle one)
(89P)	309-00-2	aldrin	0.005	U
(90P)	60-57-1	dieldrin	ND	B
(91P)	57-74-9	chlordane		
(92P)	50-29-3	4,4'-DDT	0.050	U ✓
(93P)	72-55-9	4,4'-DDE		
(94P)	72-54-8	4,4'-DDD		
(95P)	115-29-7	α-endosulfan		
(96P)	115-29-7	β-endosulfan		
(97P)	1031-07-8	endosulfan sulfate		
(98P)	72-20-8	endrin	0.0072	U ✓
(99P)	7421-93-4	endrin aldehyde	0.010	U
(100P)	76-44-8	heptachlor	ND	B
(101P)	1024-57-3	heptachlor epoxide		
(102P)	319-84-6	α-BHC		
(103P)	319-85-7	β-BHC		
(104P)	319-86-8	δ-BHC		
(105P)	58-89-9	γ-BHC (lindane)	0.005	U
(106P)	53469-21-9	PCB-1242		
(107P)	11097-69-1	PCB-1254		
(108P)	11104-28-2	PCB-1221		
(109P)	11141-16-5	PCB-1232		
(110P)	12672-29-6	PCB-1248		
(111P)	11096-82-5	PCB-1260		
(112P)	12674-11-2	PCB-1016		
(113P)	8001-35-2	toxaphene		

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

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B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

Gw-3
Blank

FIELD BLANK

Sample Number
B2436

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

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07 / 111998
Sample Matrix: WATER
Data Release Authorized By: Stan Hz
Case No: 2993
QC Report No:
Contract No.: 68-01-6869
Date Sample Received: 7/11/84

SEMIVOLATILE COMPOUNDS

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/19/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR:

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	10 U
(22A)	59-50-7	p-chloro-m-cresol	10 U
(24A)	95-57-8	2- chlorophenol	10 U
(31A)	120-83-2	2,4-dichlorophenol	10 U
(34A)	105-67-9	2,4-dimethylphenol	10 U
(57A)	88-75-5	2- nitrophenol	20 U
(58A)	100-02-7	4-nitrophenol	50 U
(59A)	51-28-5	2,4-dinitrophenol	50 U
(60A)	534-52-1	4,6-dinitro-2-methylphenol	20 U
(64A)	87-86-5	pentachlorophenol	10 U
(65A)	108-95-2	phenol	10 U
	65-85-0	benzoic acid	100 U
	95-48-7	2-methylphenol	5 U
	108-39-4	4-methylphenol	5 U
	95-95-4	2,4,5-trichlorophenol	100 U
(1B)	83-32-9	acenaphthene	10 U
(5B)	92-87-5	benzidine	40 U
(8B)	120-82-1	1,2,4-trichlorobenzene	10 U
(9B)	118-74-1	hexachlorobenzene	10 U
(12B)	67-72-1	hexachloroethane	10 U
(18B)	111-44-4	bis(2-chloroethyl)ether	10 U
(20B)	91-58-7	2-chloronaphthalene	10 U
(25B)	95-50-1	1,2-dichlorobenzene	10 U
(26B)	541-73-1	1,3-dichlorobenzene	10 U
(27B)	106-46-7	1,4-dichlorobenzene	10 U
(28B)	91-94-1	3,3'-dichlorobenzidine	10 U
(35B)	121-14-2	2,4-dinitrotoluene	20 U
(36B)	606-20-2	2,6-dinitrotoluene	20 U
(37B)	122-66-7	1,2-diphenylhydrazine	20 U
(39B)	206-44-0	fluoranthene	10 U
(40B)	7005-72-3	4-chlorophenyl phenyl ether	10 U
(41B)	101-55-3	4-bromophenyl phenyl ether	10 U
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	20 U
(43B)	111-91-1	bis (2-chloroethoxy) methane	20 U

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)
(52B)	87-68-3	hexachlorobutadiene	10 U
(53B)	77-47-4	hexachlorocyclopentadiene	10 U
(54B)	78-59-1	isophorone	10 U
(55B)	91-20-3	naphthalene	10 U
(56B)	98-95-3	nitrobenzene	10 U
(61B)	62-75-9	N-nitrosodimethylamine	10 U
(62B)	86-30-6	N-nitrosodiphenylamine	10 U
(63B)	621-64-7	N-nitrosodipropylamine	10 U
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	52.14
(67B)	85-68-7	benzyl butyl phthalate	10 U
(68B)	84-74-2	di-n-butyl phthalate	18.63
(69B)	117-84-0	di-n-octyl phthalate	10 U
(70B)	84-66-2	diethyl phthalate	10 U
(71B)	131-11-3	dimethyl phthalate	10 U
(72B)	56-55-3	benzo(a)anthracene	10 U
(73B)	50-32-8	benzo(a)pyrene	20 U
(74B)	205-99-2	benzo(b)fluoranthene	20 U
(75B)	207-08-9	benzo(k)fluoranthene	20 U
(76B)	218-01-9	chrysene	20 U
(77B)	208-96-8	acenaphthylene	10 U
(78B)	120-12-7	anthracene	10 U
(79B)	191-24-2	benzo(ghi)perylene	20 U
(80B)	86-73-7	fluorene	10 U
(81B)	85-01-8	phenanthrene	10 U
(82B)	53-70-3	dibenzo(a,h)anthracene	20 U
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	20 U
(84B)	129-00-0	pyrene	10 U
	62-53-3	aniline	5 U
	100-51-6	benzyl alcohol	20 U
	106-47-8	4-chloroaniline	50 U
	132-64-9	dibenzofuran	10 U
	91-57-6	2-methylnaphthalene	20 U
	88-74-4	2-nitroaniline	100 U
	99-09-2	3-nitroaniline	100 U
	100-01-6	4-nitroaniline	100 U

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

FIELD BLANK

Sample Number
B2436

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

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07/11998
Sample Matrix: WATER
Data Release Authorized By: Steve Hoy

Case No: 2998
QC Report No:
Contract No.: 68-01-6869
Date Sample Received: 7/11/84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7/13/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: NA

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(2V)	107-02-8	acrolein	100	U
(3V)	107-13-1	acrylonitrile	100	U
(4V)	71-43-2	benzene	5	U
(6V)	56-23-5	carbon tetrachloride	5	U
(7V)	108-90-7	chlorobenzene	5	U
(10V)	107-06-2	1,2-dichloroethane	1	U
(11V)	71-55-6	1,1,1-trichloroethane	5	U
(13V)	75-34-3	1,1-dichloroethane	5	U
(14V)	79-00-5	1,1,2-trichloroethane	5	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	10	U
(16V)	75-00-3	chloroethane	10	U
(19V)	110-75-8	2-chloroethylvinyl ether	10	U
(23V)	67-66-3	chloroform	5	U
(29V)	75-35-4	1,1-dichloroethene	5	U
(30V)	156-60-5	trans-1,2-dichloroethene	5	U
(32V)	78-87-5	1,2-dichloropropane	10	U
(33V)	10061-02-6	trans-1,3-dichloropropene	5	U
	10061-01-05	cis-1,3-dichloropropene	5	U
(38V)	100-41-4	ethylbenzene	5	U
(44V)	75-09-2	methylene chloride	ND	B
(45V)	74-87-3	chloromethane	10	U
(46V)	74-83-9	bromomethane	10	U
(47V)	75-25-2	bromoform	10	U
(48V)	75-27-4	bromodichloromethane	5	U
(49V)	75-69-4	fluorotrichloromethane	10	U
(50V)	75-71-8	dichlorodifluoromethane	10	U
(51V)	124-48-1	chlorodibromomethane	10	U
(85V)	127-18-4	tetrachloroethene	5	U
(86V)	108-88-3	toluene	8.1	
(87V)	79-01-6	trichloroethene	5	U
(88V)	75-01-4	vinyl chloride	10	U
	67-64-1	acetone	14	
	78-93-3	2-butanone	ND	B
	75-15-0	carbondisulfide	2.9	
	519-78-6	2-hexanone	5	U
	108-10-1	4-methyl-2-pentanone	5	U
	100-42-5	styrene	5	U
	108-05-4	vinyl acetate	5	U
	1330-20-7	total xylenes	5	U

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/20/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 2.5 mL/0.5 L

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(89P)	309-00-2	aldrin	0.005	K
(90P)	60-57-1	dieldrin	ND	B
(91P)	57-74-9	chlordane	0.050	U
(92P)	50-29-3	4,4'-DDT	0.050	U
(93P)	72-55-9	4,4'-DDE	0.0050	U
(94P)	72-54-8	4,4'-DDD	0.010	K
(95P)	115-29-7	α-endosulfan	0.005	U
(96P)	115-29-7	β-endosulfan	0.005	U
(97P)	1031-07-8	endosulfan sulfate	0.010	U
(98P)	72-20-8	endrin	0.017	
(99P)	7421-93-4	endrin aldehyde	0.010	U
(100P)	76-44-8	heptachlor	0.005	K
(101P)	1024-57-3	heptachlor epoxide	0.005	U
(102P)	319-84-6	α-BHC	0.005	U
(103P)	319-85-7	β-BHC	0.005	U
(104P)	319-86-8	δ-BHC	0.005	U
(105P)	58-89-9	γ-BHC (lindane)	0.0056	
(106P)	53469-21-9	PCB-1242	0.050	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	0.10	U
(109P)	11141-16-5	PCB-1232	0.10	U
(110P)	12672-29-6	PCB-1248	0.10	U
(111P)	11096-82-5	PCB-1260	0.20	U
(112P)	12674-11-2	PCB-1016	0.050	U
(113P)	8001-35-2	toxaphene	0.50	U

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

FIELD BLANK

Sample Number
B2436

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

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07/11998
Sample Matrix: WATER
Data Release Authorized By:

Case No: 2998
QC Report No:
Contract No.: 68-01-6869
Date Sample Received: 7/11/84

VOLATILES

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: NA
DATE ANALYZED: 7/13/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: NA

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(2V)	107-02-8	acrolein	100	U
(3V)	107-13-1	acrylonitrile	100	U
(4V)	71-43-2	benzene	5	U
(6V)	56-23-5	carbon tetrachloride	5	U
(7V)	108-90-7	chlorobenzene	5	U
(10V)	107-06-2	1,2-dichloroethane	1	U
(11V)	71-55-6	1,1,1-trichloroethane	5	U
(13V)	75-34-3	1,1-dichloroethane	5	U
(14V)	79-00-5	1,1,2-trichloroethane	5	U
(15V)	79-34-5	1,1,2,2-tetrachloroethane	10	U
(16V)	75-00-3	chloroethane	10	U
(19V)	110-75-8	2-chloroethylvinyl ether	10	U
(23V)	67-66-3	chloroform	5	U
(29V)	75-35-4	1,1-dichloroethene	5	U
(30V)	156-60-5	trans-1,2-dichloroethene	5	U
(32V)	78-87-5	1,2-dichloropropane	10	U
(33V)	10061-02-6	trans-1,3-dichloropropene	5	U
	10061-01-05	cis-1,3-dichloropropene	5	U
(38V)	100-41-4	ethylbenzene	5	U
(44V)	75-09-2	methylene chloride	ND	B
(45V)	74-87-3	chloromethane	10	U
(46V)	74-83-9	bromomethane	10	U
(47V)	75-25-2	bromoform	10	U
(48V)	75-27-4	bromodichloromethane	5	U
(49V)	75-69-4	fluorotrichloromethane	10	U
(50V)	75-71-8	dichlorodifluoromethane	10	U
(51V)	124-48-1	chlorodibromomethane	10	U
(85V)	127-18-4	tetrachloroethene	5	U
(86V)	108-88-3	toluene	8.1	
(87V)	79-01-6	trichloroethene	5	U
(88V)	75-01-4	vinyl chloride	10	U
revised 8A	67-64-1	acetone	5	U
	78-93-3	2-butanone	ND	B
	75-15-0	carbondisulfide	2.9	
	519-78-6	2-hexanone	5	U
	108-10-1	4-methyl-2-pentanone	5	U
	100-42-5	styrene	5	U
	108-05-4	vinyl acetate	5	U
	1330-20-7	total xylenes	5	U

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 7/20/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 2.5 mL/0.5 L

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(89P)	309-00-2	aldrin	0.005	K
(90P)	60-57-1	dieldrin	ND	B
(91P)	57-74-9	chlordane	0.050	U
(92P)	50-29-3	4,4'-DDT	0.050	U
(93P)	72-55-9	4,4'-DDE	0.0050	U
(94P)	72-54-8	4,4'-DDD	0.010	K
(95P)	115-29-7	α-endosulfan	0.005	U
(96P)	115-29-7	β-endosulfan	0.005	U
(97P)	1031-07-8	endosulfan sulfate	0.010	U
(98P)	72-20-8	endrin	0.017	
(99P)	7421-93-4	endrin aldehyde	0.010	U
(100P)	76-44-8	heptachlor	0.005	K
(101P)	1024-57-3	heptachlor epoxide	0.005	U
(102P)	319-84-6	α-BHC	0.005	U
(103P)	319-85-7	β-BHC	0.005	U
(104P)	319-86-8	δ-BHC	0.005	U
(105P)	58-89-9	γ-BHC (lindane)	0.0056	
(106P)	53469-21-9	PCB-1242	0.050	U
(107P)	11097-69-1	PCB-1254	0.10	U
(108P)	11104-28-2	PCB-1221	0.10	U
(109P)	11141-16-5	PCB-1232	0.10	U
(110P)	12672-29-6	PCB-1248	0.10	U
(111P)	11096-82-5	PCB-1260	0.20	U
(112P)	12674-11-2	PCB-1016	0.050	U
(113P)	8001-35-2	toxaphene	0.50	U

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

FIELD BLANK

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

Sample Number
B 2436

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: ERG. INC.
Lab Sample ID No: 07 / 111998
Sample Matrix: WATER
Data Release Authorized By: Stan Hay

Case No: 2998
QC Report No:
Contract No.: 68-01-6867
Date Sample Received: 7/11/84

PESTICIDES (BY GC)

CONCENTRATION: [✓ LOW] MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED: 7/13/84
DATE ANALYZED: 8/1/84
PERCENT MOISTURE: NA
CONC./DILUTION FACTOR: 2.5 mL/0.5 L

PESTICIDE CONFIRMATIONS

PP #	CAS #		[✓ ug/l] or ug/kg (circle one)	
(89P)	309-00-2	aldrin		
(90P)	60-57-1	dieldrin		
(91P)	57-74-9	chlordane		
(92P)	50-29-3	4,4'-DDT		
(93P)	72-55-9	4,4'-DDE		
(94P)	72-54-8	4,4'-DDD		
(95P)	115-29-7	α-endosulfan		
(96P)	115-29-7	β-endosulfan		
(97P)	1031-07-8	endosulfan sulfate		
(98P)	72-20-8	endrin	0.005	U
(99P)	7421-93-4	endrin aldehyde		
(100P)	76-44-8	heptachlor		
(101P)	1024-57-3	heptachlor epoxide		
(102P)	319-84-6	α-BHC		
(103P)	319-85-7	β-BHC		
(104P)	319-86-8	δ-BHC		
(105P)	58-89-9	γ-BHC (lindane)	0.005	K
(106P)	53469-21-9	PCB-1242		
(107P)	11097-69-1	PCB-1254		
(108P)	11104-28-2	PCB-1221		
(109P)	11141-16-5	PCB-1232		
(110P)	12672-29-6	PCB-1248		
(111P)	11096-82-5	PCB-1260		
(112P)	12674-11-2	PCB-1016		
(113P)	8001-35-2	toxaphene		

DIOXINS

CONCENTRATION: LOW MEDIUM HIGH (circle one)
DATE EXTRACTED/PREPARED:
DATE ANALYZED:
PERCENT MOISTURE:
CONC./DILUTION FACTOR:

PP #	CAS #		ug/l or ug/kg (circle one)
(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	NA

December 1983

U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
K - Actual value, within the limitations of this method, is less than the value given.
CX - Compounds which were concentrated by a factor of 10 times.
B - Blank > 1/2 method D.L. and > 1/2 conc. in sample. Report ND B
C - Blank > 1/2 method D.L. and ≤ 1/2 conc. in sample. Report (corrected conc.) C

ENVIRONMENTAL RESEARCH GROUP, INC.

erg

117 N. First Ann Arbor, Michigan 48104 (313) 662-3104

QC SUMMARY

SAMPLE DATA

August 8, 1984

Dear Sir/Madam:

This report contains the final results for the chemical analysis of water samples contained in RAS Case #2998; according to Contract #68-01-6869. The samples were delivered to us on July 11, 1984 and were analyzed for volatile and semi-volatile organics according to the protocol detailed in the December 15, 1983 revision of the USEPA "Statement of Work".

QA/QC Summary - GC/MS Volatiles

Twelve of twenty-four surrogates were outside of QC limits, of which eight were D_8-toluene. The samples were spiked with a slightly concentrated solution that resulted in average recoveries of 150% for D_8-toluene. A new standards spiking protocol has rectified this problem. Ten of ten matrix spike recoveries fell outside of QC limits, however, four of five RPD's fell within QC limits. This indicates good reproducability, however, the spiking solution more than likely evaporated causing solute concentration. This problem also has been rectified with the new standards protocol. Acetone, butanone and methylene chloride were consistently found in low levels in the blanks, as laboratory background. Two of five SPCC's were outside of QC limits and zero of five CCC's were outside of QC limits. All BFB tuning criteria were met for the BFB tuning check.

QA/QC Summary - GC/MS Semi-Volatiles

GC screening of the semi-volatile extracts determined that B2435 should be analyzed as a medium level organic: A separate QA/QC set was required for this sample. Fifteen of fifty-four surrogates fell outside of QC limits. Eight of those were tribromophenol which were caused by poor chromatography and low response. Two of fourteen matrix spikes fell outside of QC limits, however, only two of seven RPD's were outside of QC limits. Twenty-two of thirty-nine CCC's fell outside of QC limits and eleven of fifteen SPCC's fell outside of QC limits. DFTPP tuning criteria were met for DFTPP tuning spectra.

RECORD OF COMMUNICATION

☐ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)
(Record of item checked above)

TO: Bill Coakley

FROM: Carol Price

DATE 10/4/84

TIME :30 P.M.

SUBJECT CLP Organic Data Package for Quality Assurance Review

SUMMARY OF COMMUNICATION

The following CLP Organic Data Package has been reviewed by the FIT and any missing information has been received. The complete package is in the DCR awaiting review by the MMB.

SITE	CASE #/ SAS #	LABORATORY	ANALYSIS/ MATRIX	NUMBER OF SAMPLES	BLANK NUMBER(S)	DUPLICATE NUMBER(S)
E.I. Dupont/ FIT	2998	ERG	Organics Water	3	B2436	None

Stelios – Here is the corrected Sheet for 2998. Sorry about the mistake.

Carol

RECEIVED
OCT -5 1984
MONITORING MANAGEMENT

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES

TO: File and Data Package

EPA Form 1300-6 (7-72) REPLACES EPA HQ FORM 5300-8 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

ENVIRONMENTAL RESEARCH GROUP, INC. erg™

117 N. First Ann Arbor, Michigan 48104 (313) 662-3104

September 7, 1984

RECEIVED
[illegible] 1984
[illegible]

USEPA Region II
Environmental Services Division
Woodbridge Avenue
Edison, NJ 08837

Attn: Dr. Richard Spear

Dear Dr. Spear:

Kindly accept these revised organics analysis data sheets for Case 2998, Sample 2436 and Reagent Blank (RB). The mass spectra for these low levels of acetone were not acceptable and were, hence, not included; however, the concentrations were reported. These are changed to not detected (5U).

The contract (68-01-6869) does not state that unspiked compounds in the matrix spike and matrix spike duplicate be reported in organic analysis data sheet form. This was requested for submission after data package completeness check but is not part of the contract. It is, however, detailed in the new Statement of Work and will be included in cases delivered after September 15, 1984.

?

Sincerely,

Stan Hazan

Stanley Hazan
RAS Project Manager

SH/m

Encls.

cc: Linda Haas
USEPA Contract Lab Program
Sample Management Office (SMO)
300 N. Lee St.
Alexandria, VA 22314

Data Audit Staff
USEPA Environmental Monitoring
Systems Laboratory (EMSL/LV)
944 E. Harmon, Exec. Ctr., Rm. 226
Las Vegas, NV 89109

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

Date 7/27/84 D. H.

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name CHEMTECH

Case No. 2998

Q.C. Report No. 270

Sample Numbers

	EPA No.	Lab ID N	No.	Lab ID No.
S-1	MB 0316	G2-270-01		
S-2	MB 0317	G2-270-02		
S-3	MB 0318	G2-270-03		
S-4	MB 0319	G2-270-04		
S-5	MB 0320 BLANK	G2-270-05		
GW-1	MB 0321	G2-270-06		
GW 2	MB 0322	G2-270-07		
GW-3	MB 0323	G2-270-08		

Comments:

ICP Interelement and background corrections applied? Yes ✓ No ____.

Footnotes:

NR - not required by contract at this time
C - blank corrected
ND/B - not detected due to blank.

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/AA) or F (for furnace).

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

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.

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

#3

EPA Sample No. MB 0321

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-06

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.W.

[✓ ug/L] or mg/kg (Circle One)

1.	Aluminum	163000	13.	Magnesium	NR
2.	Antimony	<20	14.	Manganese	10420
3.	Arsenic	124	15.	Mercury	0.22
4.	Barium	2160	16.	Nickel	454
5.	Beryllium	5.0	17.	Potassium	NR
6.	Cadmium	3.5	18.	Selenium	5.0
7.	Calcium	NR	19.	Silver	<10
8.	Chromium	610	20.	Sodium	NR
9.	Cobalt	160	21.	Thallium	<10
10.	Copper	865	22.	Tin	<20
11.	Iron	358,000	23.	Vanadium	330
12.	Lead	740	24.	Zinc	1640

Cyanide NR

Percent Solids NR

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:

Lab Manager D. Hessen

Exhibit B
Page 6 of 12

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

#1

EPA Sample No.
MB 0322

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-07

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.W.

[✓ ug/L] or mg/kg (Circle One)

1.	Aluminum	730	13.	Magnesium	NR
2.	Antimony	<20	14.	Manganese	37
3.	Arsenic	< 10.0	15.	Mercury	<0.2
4.	Barium	315	16.	Nickel	57
5.	Beryllium	<5	17.	Potassium	NR
6.	Cadmium	1.5	18.	Selenium	<2.0
7.	Calcium	NR	19.	Silver	<10
8.	Chromium	12	20.	Sodium	NR
9.	Cobalt	< 50	21.	Thallium	<10
10.	Copper	< 50	22.	Tin	<20
11.	Iron	1430	23.	Vanadium	< 200
12.	Lead	35	24.	Zinc	47

Cyanide NR

Percent Solids NR

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:

Lab Manager D. Hessimer

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. MB 0323

Date 7/27/84
[illegible]

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-08
BLANK

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.W.

[✓ ug/L] or mg/kg (Circle One)

1.	Aluminum	120 ✓	13.	Magnesium	NR
2.	Antimony	<20	14.	Manganese	<10
3.	Arsenic	<10.0	15.	Mercury	<0.2
4.	Barium	<100	16.	Nickel	<40
5.	Beryllium	<5	17.	Potassium	NR
6.	Cadmium	<1.0	18.	Selenium	<2.0
7.	Calcium	NR	19.	Silver	<10
8.	Chromium	<10	20.	Sodium	NR
9.	Cobalt	<50	21.	Thallium	<10
10.	Copper	<50	22.	Tin	<20
11.	Iron	<50	23.	Vanadium	<200
12.	Lead	<5	24.	Zinc	<10
	Cyanide	NR		Percent Solids	NR

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:

Lab Manager D. Hessemer

S-1

Exhibit B
Page 6 of 12

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.
MB 0316

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-01

QC REPORT NO. 270

Matrix L.S.

Elements Identified and Measured

ug/L or [✓ mg/kg] (Circle One)

1.	Aluminum	7450	13.	Magnesium	NR
2.	Antimony	<1.0	14.	Manganese	341
3.	Arsenic	~~NR~~ 62.0 1-50	15.	Mercury	0.2
4.	Barium	118.5	16.	Nickel	~~ND.2~~ 15.0
5.	Beryllium	0.9	17.	Potassium	NR
6.	Cadmium	0.4	18.	Selenium	0.8
7.	Calcium	NR	19.	Silver	<0.5
8.	Chromium	10.5	20.	Sodium	NR
9.	Cobalt	7.5	21.	Thallium	<0.5
10.	Copper	28.5	22.	Tin	<1.0
11.	Iron	31750	23.	Vanadium	14.5
12.	Lead	4.4	24.	Zinc	52

Cyanide NR

Percent Solids NR

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:

Lab Manager D. Hessener

S - 2

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. MB 0317

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-02

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.S.

ug/L or [✓ mg/kg] (Circle One)

1.	Aluminum	9250	13.	Magnesium	NR
2.	Antimony	<1.0	14.	Manganese	425
3.	Arsenic	3.4	15.	Mercury	0.35
4.	Barium	74.5	16.	Nickel	DM ~~0.35~~ 22
5.	Beryllium	0.4	17.	Potassium	NR
6.	Cadmium	0.5	18.	Selenium	<0.1
7.	Calcium	NR	19.	Silver	<0.5
8.	Chromium	14.8	20.	Sodium	NR
9.	Cobalt	8.6	21.	Thallium	<0.5
10.	Copper	32.2	22.	Tin	<1.0
11.	Iron	16500	23.	Vanadium	~~15.5~~
12.	Lead	3.1	24.	Zinc	127
	Cyanide	NR		Percent Solids	NR

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:

Lab Manager D. Hessemer

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

5-3

EPA Sample No. MB 0318

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-03

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.S.

ug/L or [✓ mg/kg] (Circle One)

1.	Aluminum	1415	13.	Magnesium	NR
2.	Antimony	< 1.0	14.	Manganese	52
3.	Arsenic	1.1	15.	Mercury	0.3
4.	Barium	17.1	16.	Nickel	~~10.5~~ 7.8
5.	Beryllium	0.3	17.	Potassium	NR
6.	Cadmium	0.4	18.	Selenium	0.2
7.	Calcium	NR	19.	Silver	< 0.5
8.	Chromium	3.8	20.	Sodium	NR
9.	Cobalt	< 2.5	21.	Thallium	< 0.5
10.	Copper	19.7	22.	Tin	< 1.0
11.	Iron	3425	23.	Vanadium	< 10
12.	Lead	4.2	24.	Zinc	41

Cyanide NR

Percent Solids NR

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:

Lab Manager D. Hessemer

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

S-4

EPA Sample No. MB 0319

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-04

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.S.

ug/L or [✓ mg/kg] (Circle One)

1. Aluminum 10150
2. Antimony <1.0
3. Arsenic 6.5
4. Barium 91
5. Beryllium 0.9
6. Cadmium 1.7
7. Calcium NR
8. Chromium 18.3
9. Cobalt 6.6
10. Copper 38
11. Iron 20150
12. Lead 54
13. Magnesium NR
14. Manganese 347
15. Mercury 0.3
16. Nickel ~~ND 0.3~~ 19
17. Potassium NR
18. Selenium 0.2
19. Silver <0.5
20. Sodium NR
21. Thallium <0.5
22. Tin <1.0
23. Vanadium 23
24. Zinc 1400

Cyanide NR

Percent Solids NR

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:

Lab Manager D. Hessen

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. MB 0320

Date 7/27/84

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH

CASE NO. 2998

LAB SAMPLE ID. NO. G2-270-05 BLANK

QC REPORT NO. 270

Elements Identified and Measured

Matrix L.S.

ug/L or [✓ mg/kg] (Circle One)

1.	Aluminum	5.8 /	13.	Magnesium	NR
2.	Antimony	<1.0	14.	Manganese	<0.5
3.	Arsenic	<0.5	15.	Mercury	<0.1
4.	Barium	DM. ~~10.8~~ <5	16.	Nickel	<2
5.	Beryllium	<0.25	17.	Potassium	NR
6.	Cadmium	<0.05	18.	Selenium	<0.1
7.	Calcium	NR	19.	Silver	<0.5
8.	Chromium	<0.5	20.	Sodium	NR
9.	Cobalt	<2.5	21.	Thallium	<0.5
10.	Copper	<2.5	22.	Tin	<1.0
11.	Iron	<2.5	23.	Vanadium	<10
12.	Lead	<0.25	24.	Zinc	0.6 /

Cyanide NR

Percent Solids NR

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: __________

Lab Manager D. Hessemer

BIBLIOGRAPHY OF INFORMATION SOURCES
HRS MODEL

	SOURCE	LOCATION
1.	NY State Atlas of Community Water Systems Sources, 1982, p. 6.	NUS
2.	USGS Topographic Map, Buffalo NW, NY Quad, 1965.	NUS
3.	Potential Hazardous Waste Site - Site Inspection Reports, 5/5/83 and 7/22/84.	NUS
4.	Erie County Dept. of Environment and Planning. "Selected Erie County Inactive Disposal Site Profiles", Sept. 1981.	NUS
5.	Telecon: Ama Tayebi, NYDEC Region 7, and Charlotte Ryden, NUS, 12/6/84.	NUS

REFERENCE NO. 4

1982

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:
Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger

5-133

VNR VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

recycled paper

TABLE I

EPA Hazard Ranking System Waste Characteristics Values (Toxicity/Persistence Matrix)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Acenapthene	9	3
Acetaldehyde	6	6
Acetic Acid	6	6
Acetone	6	6
2-Acetylaminoflourene	18	9
Aldrin	18	9
Ammonia	9	9
Aniline	12	9
Anthracene	15	9
Arsenic	18	9
Arsenic Acid	18	9
Arsenic Trioxide	18	9
Asbestos	15	9
Barium	18	9
Benzene	12	9
Benzidine	18	9
Benzoapyrene	18	9
Benzopyrene, NOS	18	9
Beryllium & Compounds NOS	18	9
Beryllium Dust, NOS	18	9
Bis (2-Chloroethyl) Ether	15	9
Bis (2-Ethylhexyl Phthalate	12	3
Bromodichloromethane	15	6
Bromoform	15	6
Bromomethane	15	9
Cadmium	18	9
Carbon Tetrachloride	18	9
Chlordane	18	9
Chlorobenzene	12	6
Chloroform	18	6
3-Chlorophenol	12	6
4-Chlorophenol	15	9
2-Chlorophenol	12	6
Chromium	18	9
Chromium, Hexavalent (Cr^{+6})	18	9

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Chromium, Trivalent (Cr^{+3})	15	6
Copper & Compounds, NOS	18	9
Creosote	15	6
Cresols	9	6
4-Cresol	12	9
Cupric chloride	18	9
Cyanides (soluble salts), NOS	12	9
Cyclohexane	12	6
DDE	18	9
DDT	18	9
Diaminotoluene	18	6
Dibromochloromethane	15	6
1, 2-Dibromo, 3-chloropropane	18	9
Di-N-Butyl-Phthalate	18	6
1, 4-Dichlorobenzene	15	6
Dichlorobenzene, NOS	18	6
1, 1-Dichloroethane	12	6
1, 2-Dichloroethane	12	9
1, 1-Dichloroethene	15	9
1, 2-cis-Dichloroethylene	12	3
1, 2-trans-Dichloroethylene	12	3
Dichloroethylene, NOS	12	3
2, 4-Dichlorophenol	18	6
2, 4-Dichlorophenoxyacetic Acid	18	9
Dicyclopentadiene	18	9
Dieldrin	18	9
2, 4-Dinitrotoluene	15	9
Dioxin	18	9
Endosulfan	18	9
Endrin	18	9
Ethylbenzene	9	6
Ethylene Dibromide	18	9
Ethylene Glycol	9	6
Ethyl Ether	15	3
Ethylmethacrylate	12	6

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Fluorine	18	9
Formaldehyde	9	9
Formic Acid	9	6
Heptachlor	18	9
Hexachlorobenzene	15	6
Hexachlorobutadiene	18	9
Hexachlorocyclohexane, NOS	18	9
Hexachlorocyclopentadiene	18	9
Hydrochloric Acid	9	6
Hydrogen Sulfide	18	9
Indene	12	6
Iron & Compounds, NOS	18	9
Isophorone	12	6
Isopropyl Ether	9	3
Kelthane	15	6
Kepone	18	9
Lead	18	9
Lindane	18	9
Magnesium & Compounds, NOS	15	6
Manganese & Compounds, NOS	18	9
Mercury	18	9
Mercury Chloride	18	9
Methoxychlor	15	6
4, 4-Methylene-Bis-(2-Chloroaniline)	18	9
Methylene Chloride	12	6
Methyl Ethyl Ketone	6	6
Methyl Isobutyl Ketone	12	6
4-Methyl-2-Nitroaniline	12	9
Methyl Parathion	9	9
2-Methylpyridine	12	6
Mirex	18	9

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Naphthalene	9	6
Nickel & Compounds, NOS	18	9
Nitric Acid	9	9
Nitroaniline, NOS	18	9
Nitrogen Compounds, NOS	12	0
Nitroguanidine	12	9
Nitrophenol, NOS	15	9
m-Nitrophenol	15	
o-Nitrophenol	12	
p-Nitrophenol	15	
Nitrosodiphenylamine	12	6
Parathion	9	9
Pentachlorophenol (PCP)	18	9
Pesticides, NOS	18	9
Phenanthrene	15	9
Phenol	12	9
Phosgene	9	9
Polybrominated Biphenyl (PBB), NOS	18	9
Polychlorinated Biphenyls (PCB), NOS	18	9
Potassium Chromate	18	9
Radium & Compounds, NOS	18	9
Radon & Compounds, NOS	15	9
RDX (Cyclonite)	15	
2, 4-D, Salts & Esters	18	9
Selenium	15	9
Sevin (Carbaryl)	18	9
Sodium Cyanide	12	9
Styrene	9	6
Sulfate	9	0
Sulfuric Acid	9	9
2, 4, 5-T	18	9
1, 1, 2, 2-Tetrachloroethane	18	9
Tetrachloroethane, NOS	18	9
1, 1, 2, 2-Tetrachloroethene	12	6

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Tetraethyl Lead	18	9
Tetrahydrofuran	15	6
Thorium & Compounds, NOS	18	9
Toluene	9	6
TNT	12	
Toxaphene	18	9
Tribromomethane	18	9
1, 2, 4-Trichlorobenzene	15	6
1, 3, 5-Trichlorobenzene	15	6
1, 1, 1-Trichloroethane	12	6
1, 1, 2-Trichloroethane	15	6
Trichloroethane, NOS	15	6
Trichloroethene	12	6
1, 1, 1-Trichloropropane	12	6
1, 1, 2-Trichloropropane	12	6
1, 2, 2-Trichloropropane	12	6
1, 2, 3-Trichloropropane	15	9
Uranium & Compounds, NOS	18	9
Varsol	12	6
Vinyl Chloride	15	9
Xylene	9	6
Zinc & Compounds, NOS	18	9
Zinc Cyanide	18	9

REFERENCE NO. 5

File DuPont Tonawanda

Rec'd From Larry Clare NYSDEC 4/29/87

NUS CORPORATION

POTENTIAL HAZARDOUS WASTE SITE

EXECUTIVE SUMMARY

E.I. DuPont
Site Name

D002103513
EPA Site ID Number

Sheridan Drive
Buffalo, New York
Address

02-8303-124 --
TDD Number

Date of Site Visit: 5/5/83

SITE DESCRIPTION

The site is an active facility which utilized three acres for the disposal of Cellulose Wastes, Nylon Wastes, and Polyvinyl Flouride from 1921 to 1978. There are 16 monitoring wells on site. The wells were sampled by the U.S.G.S. in July and October of 1979. Currently, the former disposal area is reclaimed and all hazardous wastes are transported off-site by authorized haulers.

PRIORITY FOR FURTHER ACTION: High____ Medium____ Low X

RECOMMENDATIONS

The potential for drinking water contamination is low since groundwater flow is parallel to the Niagara River. Since, the groundwater wells are installed, it is recommended that the data from 1979 be obtained and and assessment be made concerning possible migration of contaminents off-site.

Prepared by: Mark J. O'Neill of NUS Corporation

Date: May 17, 1983

EPA

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

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: D002103513

II. SITE NAME AND LOCATION

01 SITE NAME *(Legal, common, or descriptive name of site)*: E.I. DuPont deNemours Company
02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Sheridan Drive
03 CITY: Buffalo
04 STATE: NY
05 ZIP CODE: 14207
06 COUNTY: Erie
07 COUNTY CODE: 029
08 CONG DIST: 36
09 COORDINATES LATITUDE: 42 57' 50"N
LONGITUDE: W78 55' 03"
10 DIRECTIONS TO SITE *(Starting from nearest public road)*

NY State Thruway to Grand Island. Take River Road exit, last exit before Bridge to Grand Island. Make left onto river Road travel south. DuPont plant is on the left approximately 2.5 miles.

III. RESPONSIBLE PARTIES

01 OWNER *(If known)*: E.I. DuPont & deNemours
02 STREET *(Business, mailing, residential)*: 1007 Market Street
03 CITY: Wilmington
04 STATE: DEL
05 ZIP CODE: 19898
06 TELEPHONE NUMBER: ( )
07 OPERATOR *(If known and different from owner)*: E.I. DuPont & deNemours
08 STREET *(Business, mailing, residential)*: Yerkes Plant
09 CITY: Buffalo
10 STATE: NY
11 ZIP CODE: 14207
12 TELEPHONE NUMBER: (716) 876-4420
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 DATE 6 / 1 / 81 MONTH DAY YEAR
☐ NO
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): NUS Corporation
02 SITE STATUS *(Check one)*
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN
03 YEARS OF OPERATION
1921 BEGINNING YEAR | 1978 ENDING YEAR ☐ UNKNOWN
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

During the years of 1921 to 1978, six pits were utilized on site to dispose of various plastic, rayon, cellophane, and polyvinyl flouride alcohol wastes.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Due to the toxicity of materials disposed of on site, groundwater in the area of the site may be affected. The surrounding communities all derive their water supplies from the Niagara River. There are sixteen monitoring wells on site.

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

1 CONTACT: Mark Haulenbeek
02 OF *(Agency/Organization)*: US EPA, Region II, Edison, NJ Environmental Services Division
03 TELEPHONE NUMBER: (201) 321-6685
4 PERSON RESPONSIBLE FOR ASSESSMENT: hartin J. O'Neill
05 AGENCY: NUS
06 ORGANIZATION: FIT II
07 TELEPHONE NUMBER: (201) 225-6160
08 DATE: 5 / 12 / 83 MONTH DAY YEAR

A FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

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

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

TONS 90,000
CUBIC YARDS unknown
NO. OF DRUMS unknown

03 WASTE CHARACTERISTICS *(Check all that apply)*

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	9,200	Tons	
OLW	OILY WASTE			
SOL	SOLVENTS	0.5	Tons	
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	0.5	Tons	
IOC	INORGANIC CHEMICALS	80,000	Tons	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SLU	Dry "Corian" Waste	unknown	landfill	unknown	unknown
SLU	Wet "Corian" Waste	unknown	landfill - drums	unknown	unknown
SLU	Polyvinyl Alcohol Film	unknown	landfill	unknown	unknown
SLU	"Vexar" Netting	unknown	landfill	unknown	unknown
SLU	"Tedlar" w/Dimethylacetamide	" "	landfill	unknown	unknown
SLU	Polyvinyl Flouride Film	9002-89-5	landfill	unknown	unknown
SLU	Paint Sludges	unknown	landfill	unknown	unknown
SOL	Methylene Chloride	75-09-2	55 gallon drums	unknown	unknown
SOL	Laboratory Chemicals	unknown	landfill	unknown	unknown
OCC	Laboratory Chemicals	unknown	landfill	unknown	unknown
OCC	d Limonene	138-86-3	55 gallon drums	unknown	unknown
OCC	Methyl Methacrylate	unknown	55 gallon drums	unknown	unknown
IOC	Cellulosic Viscose	unknown	landfill	unknown	unknown
IOC	Cellophan Rayon	unknown	landfill	unknown	unknown

V. FEEDSTOCKS *(See Appendix for CAS Numbers)* none

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

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

NUS FIT II Site Inspection 5/5/83.
Interview with Dr. L.E. Amborski, DuPont Environmental Control 5/5/83.
NY DEC Interagency Task Force Report dated 1979.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002103513

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 110,000
04 NARRATIVE DESCRIPTION

Due to the toxic nature of some of the materials deposited on site. The potential for groundwater contamination cannot be disregarded, however, sixteen monitoring wells on site have shown nothing which would indicate groundwater contamination exists on site.

01 ☒ B. SURFACE WATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 110,000
04 NARRATIVE DESCRIPTION

None observed. Potential exists due to toxic nature of materials deposited and close proximity of the Niagara River.

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

None observed. No potential exists.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1000
04 NARRATIVE DESCRIPTION

d-limonene and Methyl Methacrylate, two wastes which are currently generated by the facility, both have high flash points and therefore, pose a potential for explosive conditions. These wastes remain on site in 55 gallon drums for a period of time prior to removal from site.

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

No potential exists.

01 ☒ F. CONTAMINATION OF SOIL
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 6-8 (Acres)
04 NARRATIVE DESCRIPTION

Due to the toxic nature of materials deposited on site the potential for soil contamination exists.

01 ☒ G. DRINKING WATER CONTAMINATION
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 110,000
04 NARRATIVE DESCRIPTION

The surrounding communities draw their water supply from the Niagara River. Groundwater flow for this site is SE, parallel, and away from the river. This indicates a limited potential for drinking water contamination.

01 ☒ H. WORKER EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ±350
04 NARRATIVE DESCRIPTION

Due to the toxic nature of dimethylacetamine, methylene chloride and the high flash points, as well as, the toxicity of d-limonene and methyl methacrylate, the potential for worker exposure/injury exists.

01 ☐ I. POPULATION EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ______
04 NARRATIVE DESCRIPTION

No potential exists.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D002103513

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None observed. The area where material was deposited has been reclaimed and subsequently planted. One portion of the disposal area has recently been used to dump demolition debris and has not been replanted.

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None observed. No potential exists since fauna contact with deposited material is prevented by fence.

Don't birds and [illegible]

01 ☒ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

Potential for food chain contamination exists if the groundwater is contaminated and makes contact with surface water. The Niagara River is 4000 ft. due west of the site. Marine ecosystem could be affected.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ______ 04 NARRATIVE DESCRIPTION

none observed, no potential exists

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

none observed, no potential exists

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

none observed, no potential exists

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

no potential exists, site is entirely fenced and guarded by 24 hr. security system.

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

none

III. TOTAL POPULATION POTENTIALLY AFFECTED: 110,000

IV. COMMENTS

This is an active facility which operated a Landfill on site from 1921 to 1978. Various nylon wastes, cellulosic wastes, and polyvinyl fluorides were deposited in 6 pits 15-20 ft. deep, which encompass six to eight acres in the rear of the property. Part of the disposal area is now a parking lot owned by Chevrolet.

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

NUS FIT II Site Inspection 5-5-83
Interview with Dr. L.E. Amborski, CIH, DuPont's Environmental Control 5-5-83
NY DEC Interagency Task Force Report dated March, 1979

EPA FORM 2070-13 (7-81)

REFERENCE NO. 6

Rec'd from
J. Pietraszek
DEC
4/24/87

DEC
PUBLICATION

Division of Solid and Hazardous Waste

Inactive
Hazardous Waste Disposal Sites
in
New York State

Site List by Counties; Volume 9

- Allegeny
- Cattaraugus
- Chautauqua
- Erie
- Niagara
- Wyoming

December 1986

5-146

A Joint Report
of the New York State Department of Environmental Conservation and Health

New York State/Department of Environmental Conservation

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

CLASSIFICATION CODE: 2a REGION: 9 SITE CODE: 915019
EPA ID: NYD0005128

NAME OF SITE : E.I. DuPont Company
STREET ADDRESS: River Road
TOWN/CITY: Tonawanda
COUNTY: Erie
ZIP: 14150

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 30-40 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: E.I. DuPont De Nemours Company
CURRENT OWNER ADDRESS.: River Road, Tonawanda, NY 14150
OWNER(S) DURING USE...: E.I. DuPont De Nemours Company
OPERATOR DURING USE...: E.I. DuPont De Nemours Company
OPERATOR ADDRESS......: Same as above
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1921 To 1978

SITE DESCRIPTION:
Waste "Corion", "Tedlar", "Vexar", Rayon, cellophane and polyvinyl alcohol film disposed in 15-20 foot deep pits. Foundry used as a cover material for a large portion of the site. Monitoring wells have been installed around the site. Samples collected by DuPont have been analyzed for inorganic and organic parameters. Samples collected in 1982 by the U.S.G.S. were analyzed for organic parameters. DOH inspection was conducted in June of 1985.

HAZARDOUS WASTE DISPOSED: Confirmed-X Suspected-

TYPE	QUANTITY (units)
Cellulosic viscose, cellophane, rayon, sponges	80,000 tons
Dry "Corian" wastes	5,000 tons
Wet "Corian" wastes	1,500 tons
Polyvinyl alcohol film	100 tons
"Vexar" netting	1,500 tons
"Tedlar" with dimethylacetamide	1,000 tons
"Tedlar" polyvinyl flouride film	750 tons
Nylon shutters, water based pain, lab chemicals	76 tons

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil- Sediment- None-

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: None State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-
NATURE OF ACTION: None

GEOTECHNICAL INFORMATION:
SOIL TYPE: Clay
GROUNDWATER DEPTH: 4 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

DuPont samples exceeded groundwater standards for sulfate and barium, with slight exceedance for barium, lead, and mercury. Organic analysis revealed only naturally or possibly naturally occurring compounds. Further assessment of the site required to determine significance.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigation
Air	Likely	Unlikely	Yes	Medium
Surface Soil	Likely	Unlikely	No	Low
Groundwater	Likely	Unlikely	Yes	Medium
Surface Water	Likely	Unlikely	Yes	Medium

Health Department Site Inspection Date : 4/85

MUNICIPAL WASTE ID:

REFERENCE NO. 7

New York State Atlas of
Community Water System Sources
1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

New York State Atlas of
unity Water System Sources

1982

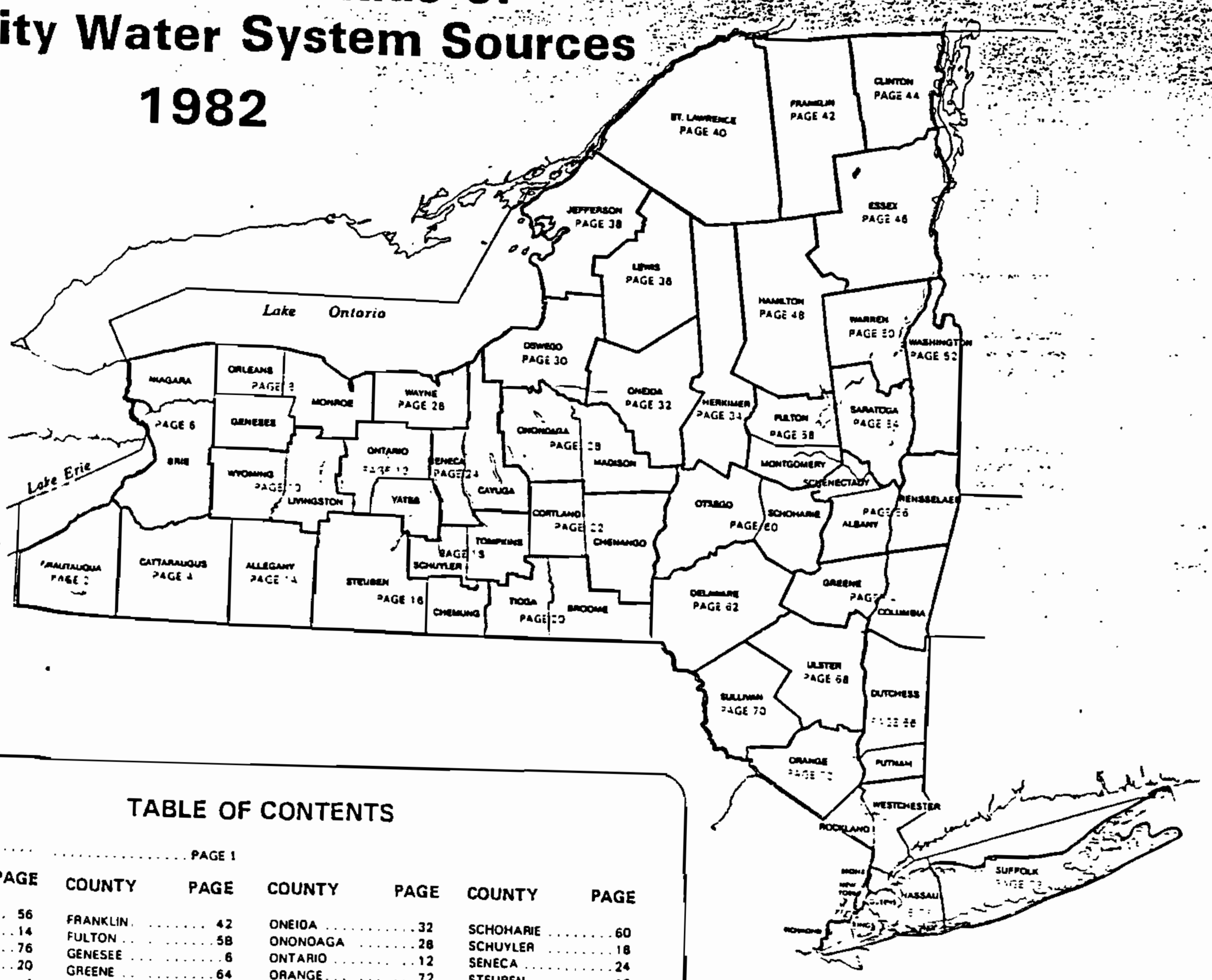


TABLE OF CONTENTS

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	Boiceville
250 or less	Corbett

TRANSPORTATION

Highways
- Divided Highways — UNDER CONSTRUCTION
  - Full Control of Access
  - Partial or No Control of Access
- Undivided Highway
- Interchange — INTERCHANGE NUMBER — FULL — PARTIAL
- 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

FOREWARD

SOURCE LOCATIONS

as show the locations of surface water intakes and groundwater
r systems in New York State. A community water system is defin-
State Sanitary Code as a public water system which serves at least
d by year round residents or regularly serves at least 25 year round
ypes of water systems are therefore included. Community water
0 percent of their water and have no sources of their own are not

anied by a list of the county's community water systems, popula-
es. Systems are separated into MUNICIPAL COMMUNITY (program
NICIPAL COMMUNITY (all other program codes) and listed
MUNICIPAL COMMUNITY water systems are operated by a city,
er authority or the water system may be a water district or privately
OMMUNITY systems are primarily mobile home parks but also in-
niums, resident health care facilities, resident institutions, and

EXPLANATION OF SYMBOLS

Suface water intakes are dasignated on the county maps by a triangle (▲) accompanied by the corresponding water supply number.

Groundwater sources are designated by a dot (•) followed by the supply number. Multiple wells separated by less than 1000' and supplying the same water system are shown with one dot. Springs and infiltration galleries are shown as groundwater sources unless the local health unit has designated it a surface source. Therefora, springs and infiltration galleries are listed as wells (springs) or wells (infiltration galleries).

If a Community Water System has source(s) located outside the county, these sources are shown in the county list and show in parentheses the system number, county and page number. Conversely, when a county contains source(s) which supply community water systems located outside the county, the name of the system is also shown in that county's list of sources.

ACKNOWLEDGEMENT

Data compiled in this Atlas is based on location of community water system sources from visits, in 1979, to every county health unit in the State by technicians working for the Bureau of Public Water Supply Protection. This data was updated in 1982 through use of the Department of Health's SAFWATER computer inventory and through limited field review. The Bureau of Public Water Supply Protection wishes to acknowledge the following organizations who have made the Atlas possible:

To the United States Environmental Protection Agency for funding this Atlas as a part of the Underground Injection Control Program.

To the Cartography Section of the New York State Department of Transportation for providing the talent, time and effort in performing the necessary cartographic work to produce this Atlas.

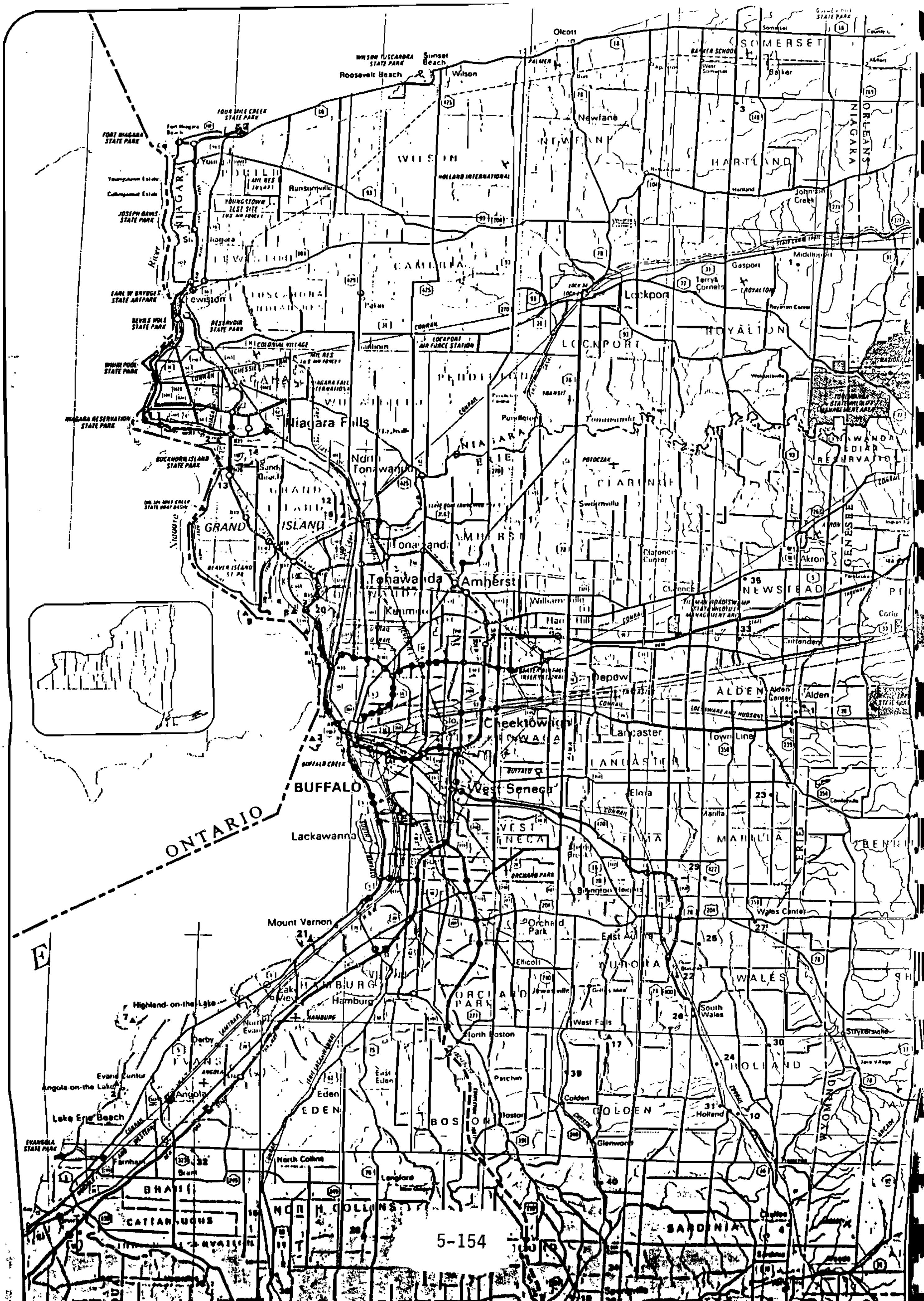
To the engineers and technicians of the Bureau of Public Water Supply Protection of the New York State Department of Health for the painstaking work of gathering the basic data and cross-checking it, and for leading this project through to completion.

COUNTY

COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Community		
ron Village (See No 1 Wyoming Co, Page 10)	3640	
deo Village	3460	Wells
gom Village	8500	Lake Erie
ffalo City Division of Water	357870	Lake Erie
n Water Company	210	Wells
ms Water District #3	704	Wells
ns Water Districts #1 and #2	1384	Wells
County Water Authority (Sturgeon Point Intake)	375000	Lake Erie
County Water Authority (Van Dewater Intake)	NA	Niagara River - East Branch
rand Island Water District #2	9390	Niagara River
lland Water District	1670	Wells
awtons Water Company	138	Wells
ockport City (Niagara Co)		Niagara River - East Branch
iagara County Water District (Niagara Co)		Niagara River - West Branch
iagara Falls City (Niagara Co)		Niagara River - West Branch
orth Collins Village	1500	Wells
orth Tonawanda City (Niagara Co)		Niagara River - West Branch
rchard Park Village	3671	Pipe Creek Reservoir
pringville Village	4169	Wells
onawanda City	18538	Niagara River - East Branch
onawanda Water District #1	91269	Niagara River
anakan Water Company	10750	Lake Erie
icipal Community		
urora Mobile Park	125	Wells
Bush Gardens Mobile Home Park	270	Wells
Circle B Trailer Court	50	Wells
Circle Court Mobile Park	125	Wells
Creekside Mobile Home Park	120	Wells
Donnelly's Mob le Home Court	99	Wells
Gowanda State Hospital	NA	Clear Lake
Hillside Estates	160	Wells
Hunters Creek Mobile Home Park	150	Wells
Knox Apartments	NA	Wells
Maple Grove Trailer Court	72	Wells
Millgrove Mobile Park	100	Wells
Perkins Trailer Park	75	Wells
Quarry Hill Estates	400	Wells
Springville Mobile Park	114	Wells
Springwood Mobile Village	132	Wells
Taylors Grove Trailer Park	39	Wells
Valley View Mobile Court	42	Wells
Villager Apartments	NA	Wells

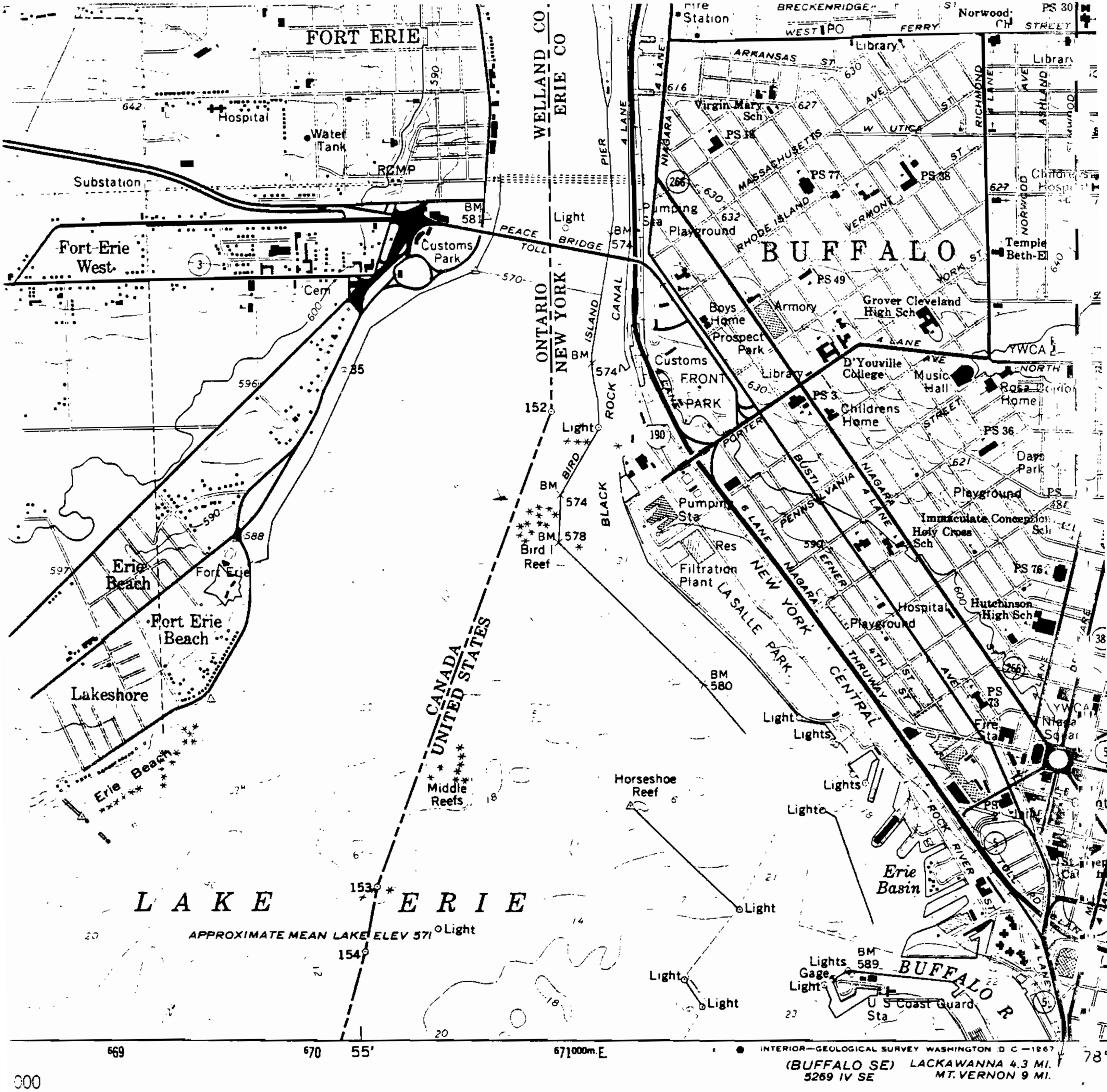
NIAGARA COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
	Lockport City (See No 12, Erie Co)	25000	
1	Middleport Village	2000	Wells (Springs)
	Niagara County Water District (See No 13, Erie Co)	48	
2	Niagara Falls City (See also No 14 Erie Co)	77384	Niagara River - East Branch
	North Tonawanda City (See No 16 Erie Co)	36000	
	Non-Municipal Community		
3	Country Estates Mobile Village	28	Wells



ADAPTED FROM THE FOUR SHEET 1:250,000 SCALE NEW YORK STATE MAP © [illegible] BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION

REFERENCE NO. 8



000

1 MILE

4000 5000 6000 7000 FEET

1 KILOMETER

L 10 FEET
EA LEVEL
DATUM IS LOW WATER 568.6 FEET

ROAD CLASSIFICATION

Heavy-duty	▬	Light-duty	▬
Medium-duty	▬	Unimproved dirt	======

○ Interstate Route ○ State Route

QUADRANGLE LOCATION

ATIONAL MAP ACCURACY STANDARDS
VEY, WASHINGTON, D.C. 20242
SYMBOLS IS AVAILABLE ON REQUEST

BUFFALO NW, N.Y.—C

NW/4 BUFFALO 15' QUADRANGLE
N4252.5—W7852.5/7.5

1965

AMS 5269 IV NW—SERIES V821

REFERENCE NO. 9

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

Kris W. Barrett
S. Steven Chang
Stuart A. Haus
Andrew M. Platt

August 1982

MTR-82W111

SPONSOR:
U.S. Environmental Protection Agency
CONTRACT NO.:
68-01-6278

The MITRE Corporation
Metrek Division
1820 Dolley Madison Boulevard
McLean, Virginia 22102

3 202 [illegible] -36

REFERENCE NO. 10

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME : E.I. DuPont De NeMours
PERSON CONTACTED : Dr. Leonard Amborski, CIH
AFFILIATION : E.I. Du Pont De NeMours
ADDRESS : Sheridan Drive Station B
Buffalo, NY 14207
TYPE OF CONTACT : Interview

I.D. NUMBER : 915019
DATE : 9/24/87
PHONE NUMBER : 716-876-4420
CONTACT PERSON(S) : A. Mark Sienkiewicz

INTERVIEW SUMMARY

No groundwater monitoring has been performed by Du Pont since 1982.

Du Pont Toanwanda holds the following permit/plans:

SPDES #0001601, Effective: 8/1/85 Expires: 8/1/90
SPCC Plan
Town of Tonawanda Sewer Discharge Permit

The Plant Manager is Mr. Robert P. Hughes.
Du Pont is a RCRA generator, but they have eliminated their RCRA waste stream.

ACKNOWLEDGEMENT

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to Ecology and Environment, Inc. interviewer(s) (as revised below, if necessary).

Revisions (please write in any corrections needed to above transcript)

RCRA Waste Transporter SJ Transportation
P.O. Box 91
East Millbrook Ave
Woods Town N. J. 08098

Signature: Leonard E. Amborski

Date: 9/28/87

LABORATORY NOTEBOOK

ECOLOGY & ENVIRONMENT, INC.

5-161

NOTEBOOK NO. ND-2021 - ERIE COUNTY

ISSUED TO____________________

ON____________________ **19**____

DEPARTMENT____________________

RETURNED____________________ **19**____

—— SCIENTIFIC NOTEBOOK CO. ——
5007 WEST DONNA DRIVE
STEVENSVILLE, MICHIGAN 49127

5-162

Table of Contents

Page

Project No.______

Book No.______ TITLE ______

m Page No.__ EI DuPONT (TONAWANDA) 9-24-87

1300 Meeting:

Leonard Amborski

Craig Walker

No monitoring since NUS, land vacant, soil placed on top. Firemains replaced. Monitoring wells installed by ~~Earth~~ ams ~~Dimensions~~ AMS Empire soils. lot unused.

SPDES/~~NPDES~~ ams #0001601 Eff. 8/1/85 Exp. 8/1/90

RCRA ~~Genator~~ Generator / No more generation of RCRA hazardous waste

SPCC plan

Town of Tonnawanda Sanitary Sewere Discharge

Plant Manager: Robert P. Hughes

Philadelphia Robber Works: previous owner

Transporter: S&J: New Jersey- contract transporter

1345 Site inspection

1. wells at west end (2) - no HNu deflection
Area wet, with giant rushes + low spots - little relief
landfill covered with 8 feet (reported) clay and is being used for the disposal of demolition debris.
2. wells at East Northe end, No HNu deflection
3. No HNU any where else on site

Solids noted as in site sketch included scrap tellar or formica type material, 2 large solidified solid foam-like mass (blue + white), and some plastic/nylon material.

9-24-87

To Page No.______

tnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

From Page No. EI DUPONT (Tonn.) Cont 9-24-87

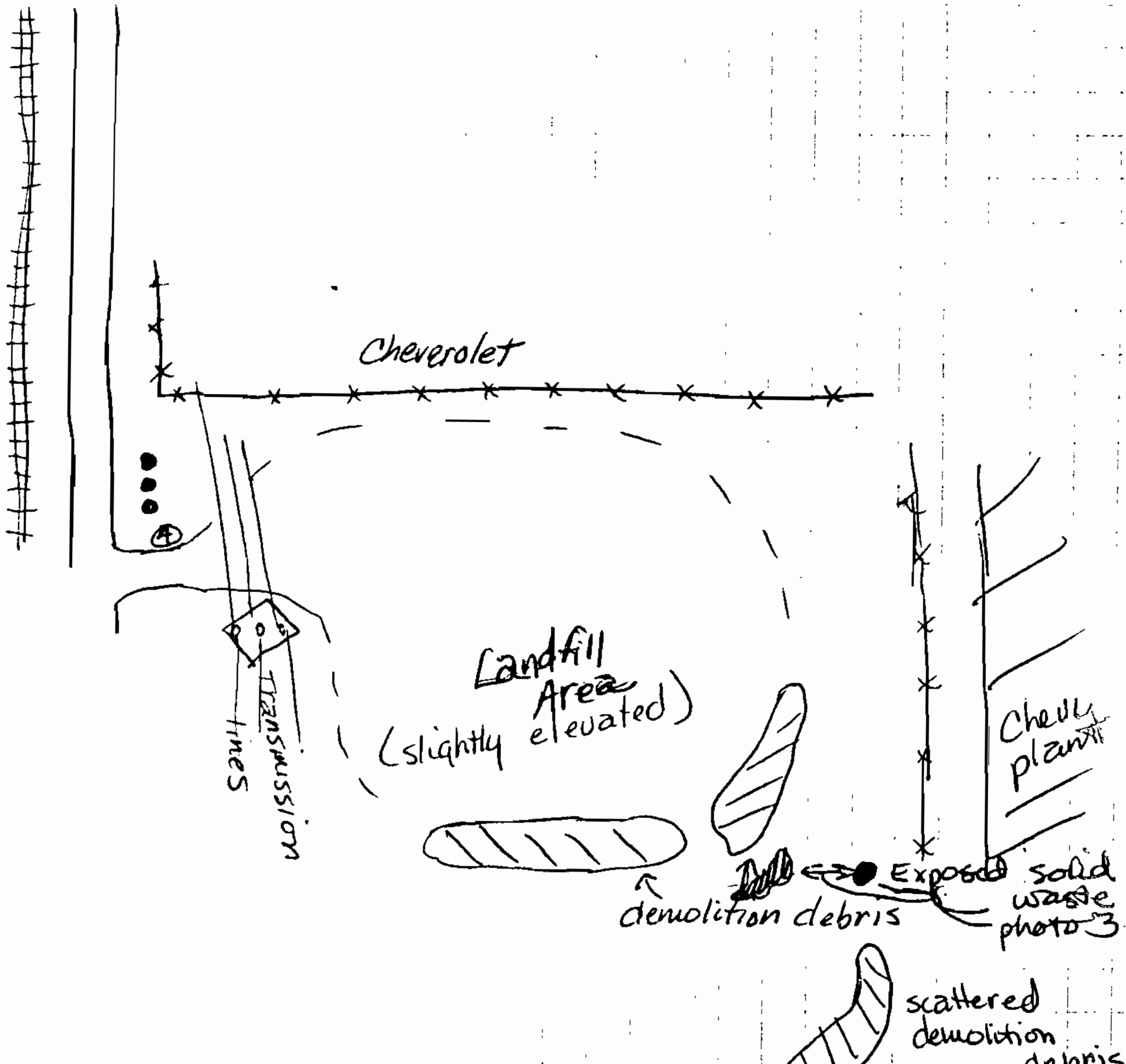


photo 1 - at point A looking south
2 - landfill, barren and used for dumping of demolition debris. from east to west. plant in background
3 - solid exposed waste
4 - Demolition debris

Frames 12-#15

site heavily foliated with annuals
Drums stored at site.
off site at 1430

C. Mark Swihun 9/24/8

5-165

DR. LEONARD E. AMBORSKI, CIH
Certified Industrial Hygienist
Occupational Health and
Environmental Control

E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Fabricated Products Department
Sheridan Drive Station B
Buffalo, New York 14207
(716) 876-4420

REFERENCE NO. 11

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME : George Schreiber
E.I. DuPont Company
FMC Corp.-Chem. Division

PERSON CONTACTED : Joe Evans

AFFILIATION : NYSDEC-Div. of Fish and Wildlife

ADDRESS : 128 South St., Olean, NY

TYPE OF CONTACT : Telephone

I.D. NUMBER : 915112
915019
915025

DATE : September 15, 1987

PHONE NUMBER : 716-372-0888

CONTACT PERSON(S) GF : Gene Florentino

INTERVIEW SUMMARY

Requested the following Stream Information:

Hampton Brook

- The entire creek is Class B.
- There is very little fisheries information because the brook is small and the upper section seasonally dries up.
- There is no stocking.

Eighteen Mile Creek

- Class A off the junction of Hampton Brook.
- Stocked with salmon and trout downstream of the water intake Dam in Hamburg, therefore they cannot migrate Upstream or into Hampton Brook.
- Also contains natural small mouth bass and many other small fish.

Niagara River and Tonawanda Channel

- Entire river is Class A and a natural reproduction area for many fish.
- It is not stocked, however, Lake Erie is stocked with salmon and trout and they migrate into the river.

ACKNOWLEDGEMENT

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to Ecology and Environment, Inc. interviewer(s) (as revised below, if necessary).

Revisions (please write in any corrections needed to above transcript)

Signature: Joseph T. Evans

Date: 9-18-87

New York State Department of Environmental Conservation

MEMORANDUM

TO: Mr. Gene Florentino
FROM: Mr. Joseph Evans
SUBJECT: CORRECTIONS/ADDITIONS TO INTERVIEW SUMMARIES
DATE: September 18, 1987

Eighteenmile Creek - the dam in Hamburg is no longer there. However there is a natural barrier about 1 mile downstream of the Rt. 62 bridge which prevents most fish migration from Lake Erie.

Cattaraugus Creek - There are no salmon above the Springville Dam. The Yorkshire area is stocked with about 4000 brown trout yearly.

Cazenovia Creek - The East Branch is stocked with 2500 Brown trout yearly in the area of Wales and Holland.

Stream Reclassifications - Although it has been proposed that all streams in the Erie-Niagara drainage that are class D be upgraded to class C the law has not been passed yet. Although it looks good that most D streams will be upgraded to C, a few undoubtedly may be left as class D.

Phone number - The Fisheries phone number is (716) 372-8676.

Joseph T Evans

Joseph T. Evans
Fish and Wildlife Tech.
Region 9 - Olean

JTE/ded

REFERENCE NO. 12

CONTACT REPORT

AGENCY: NYSDEC Region 9 Fresh and Wildlife Habitats
ADDRESS: 600Delaware Ave., Buffalo, New York 14202
TELEPHONE: 847-4550
PERSON CONTACTED: Jim Farquar
TO: F. Mc Kosky
FROM: P. Gunther
DATE: 8/26/87
SUBJECT: Wetlands in Erie Co., Significant Habitats, & Floodplains for DEC Phase 1 Investigations

xc: M. Sienkiewicz, G. Florentino, J. Sundquist, P. Farrell, ND2000

Jim Farquar has provided us with state and federal wetland maps along with wetland descriptions for wetlands that are closest to each site. Attached is a list of sites and the wetlands that are closest to the site. Using the site assignments we settled on at the Erie Co. group meeting on 8/25/87; I have enclosed for each project member the state wetlands that he/she will need. Use the wetland information for the following:

1) Wetland Classification
2) Wetland Size
3) Wetland Cover Type (swamp, meadow, etc.)
4) Look for endangered, threatened, or rare species.
5) Determine if there is anything special about the wetland (i.e. it no longer exists, it has an extensive management plan, it is considered a significant habitat, etc.)
6) Wetland Common Name

Enclose wetland information for documentation.
Also attached are soil sheets for some sites. These should be kept in with file documentation.

Federal wetland maps are also attached. State wetlands are 12.4 acres or more in size, while federal wetlands may be as small as 0.5 acre. Each federal wetland has a code that describes the wetland type. Use the attached wetland legend sheets to determine the Federal wetland type (i.e. PFOIE is a palustrine, forested, fresh water, alkaline, seasonally saturated wetland). Note that several sites are on or very close to federal wetlands.

Also attached are significant habitats for Erie Co. and a description for each site. It'll be necessary to obtain a full scale quad sheet for your hazardous waste site, plot the closest significant habitats using the enclosed map, and determine if there is a significant habitat within 3 miles. Enclosed is a short description for each significant habitat and its common name.

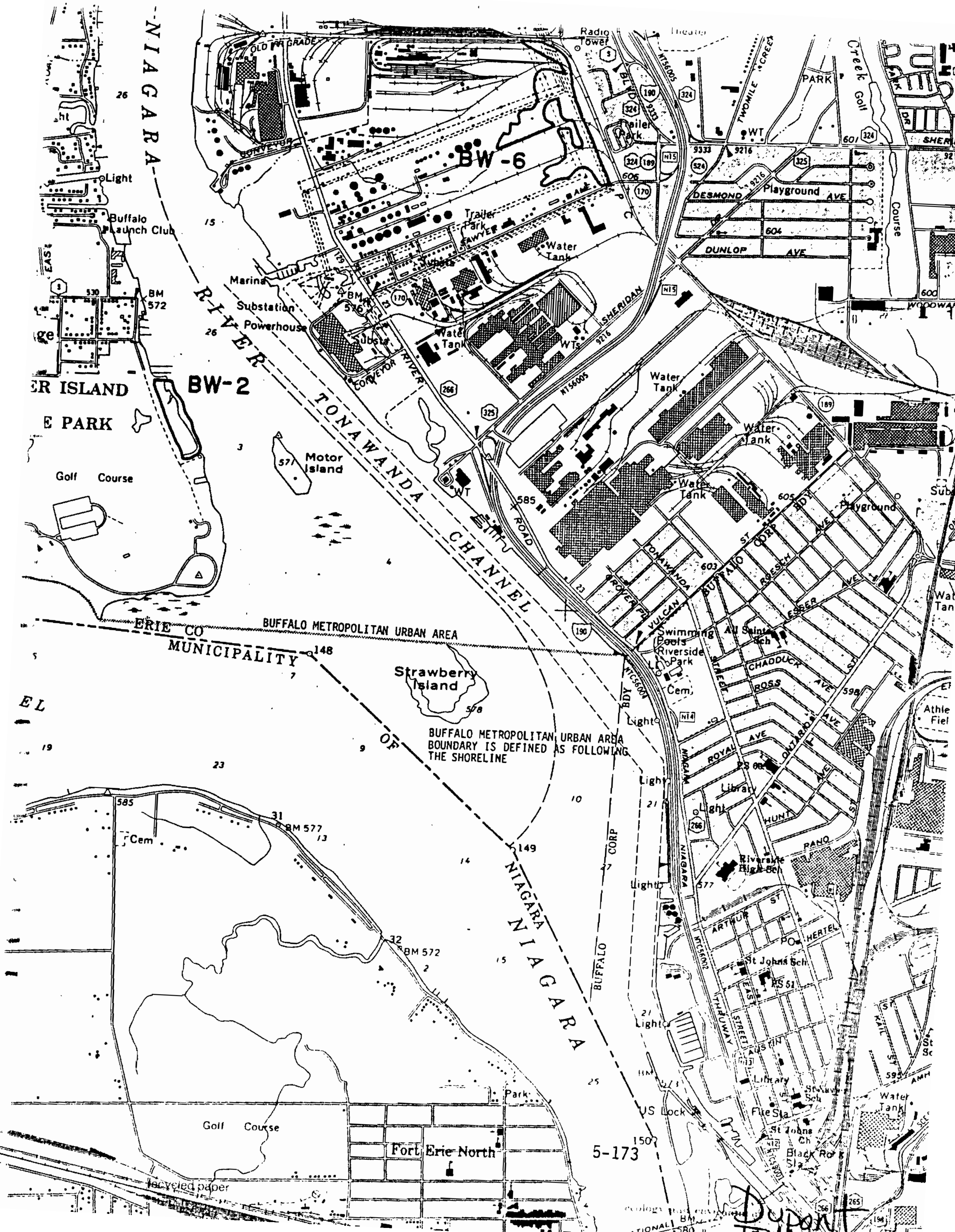
The sites within a 100 year floodplan are:

1) Snyder tank
2) Springville

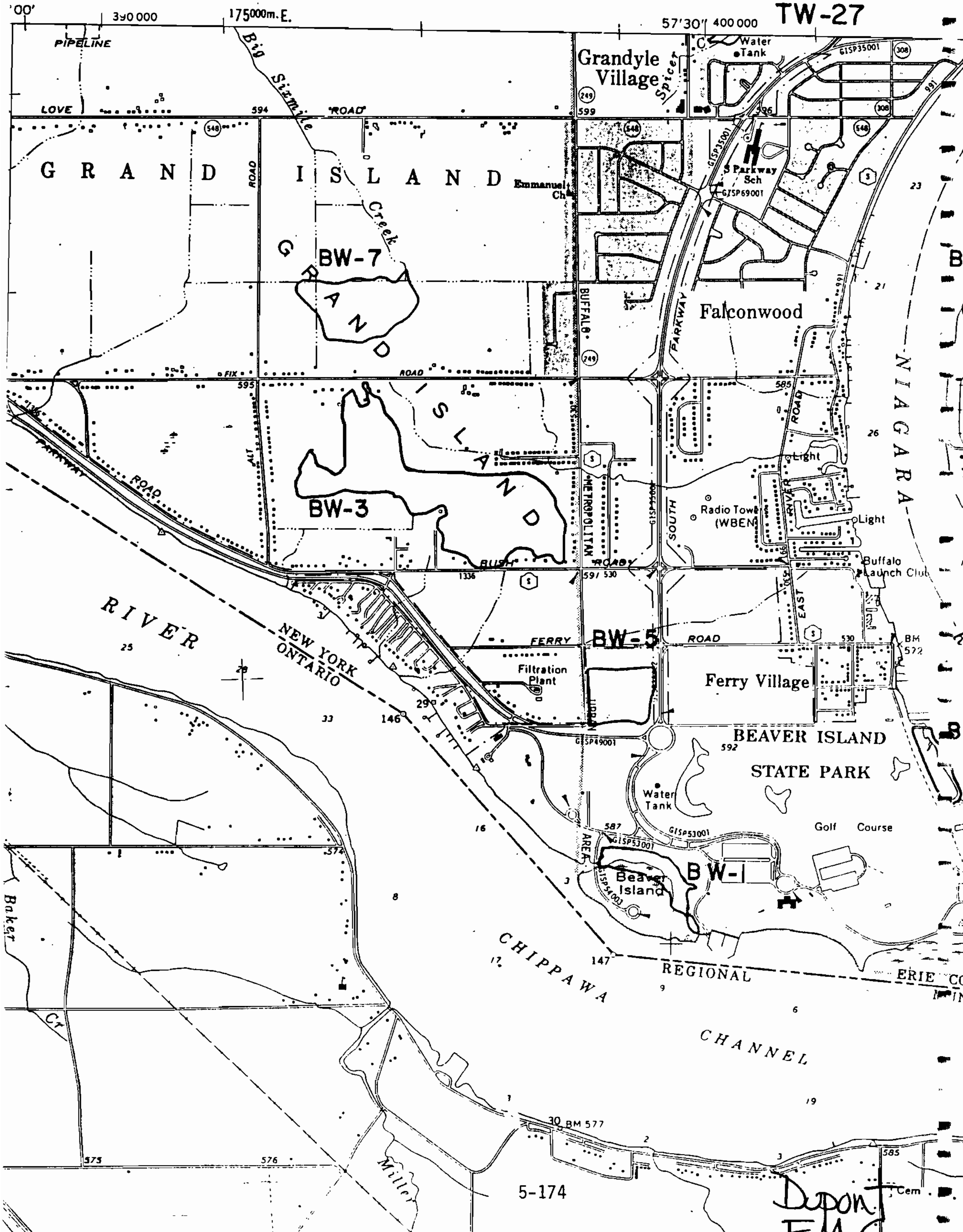
All other sites are <u>not</u> in the 100 year floodplan.

WETLANDS IN ERIE CO. NEAR DEC PHASE 1 SITES

Sites	Wetlands
Springville	AH-1, SP-11
Dupont	BW-6, BW-2
FMC	BW-6, BW-2
Whiting	AK-14, AK-7
HiView	BU-13
Clarence	CL-5, CL-2, CL-1, CL-11
Gutenkist	HP-15
Bern	BU-1, BU-15
Tift	BU-1, BU-15, BU-7
Republic	BU-1, BU-15, BU-7
Buf-Hop	BU-1, BU-7, BU-15
C. Auto	BU-1, BU-7, BU-15, BU-14
LSB	BU-14, BU-4
Snyder	BU-14, BU-4
Eden	ED-4, ED-7, ED-5, ED-11, ED-13
J. Fox	AN-5
Schreider	HB-12


BW-6
BW-2
NIAGARA RIVER
TONAWANDA CHANNEL OF NIAGARA
NIAGARA
ERIE CO MUNICIPALITY
BUFFALO METROPOLITAN URBAN AREA
BUFFALO METROPOLITAN URBAN AREA BOUNDARY IS DEFINED AS FOLLOWING THE SHORELINE
BUFFALO CORP BDY
Strawberry Island
Motor Island
ER ISLAND
E PARK
Golf Course
Buffalo Launch Club
Light
Marina
Substation
Powerhouse
Conveyor
River
Road
Sheridan
Trailer Park
Water Tank
Radio Tower
Twomile Creek
Park
Creek Golf Course
Desmond
Playground Ave
Dunlop Ave
Woodward
Tonawanda
Grover Pl
Vulcan
Buffalo St
Roesch Ave
Esser Ave
Swimming Pools
Riverside Park
All Saints Sch
Cem
Chadduck Ave
Ross Ave
Royal Ave
Ontario Ave
Niagara
PS 60
Library
Hunt
Rano
Riverside High Sch
Arthur St
Hertel
PO
St Johns Sch
PS 51
Thruway
Street
Austin
US Lock
Fire Sta
St Johns Ch
Black Rock Sta
Fort Erie North
Golf Course
BM 577
BM 572
148
149
150
585
571
578
605
603
598
595

Dupont


TW-27
'00'
390 000
175000m.E.
57'30" 400 000
PIPELINE
LOVE
594
ROAD
Big Sixmile Creek
Grandyle Village
Spicer
Water Tank
249
599
596
GISP35001
308
991
548
GRAND ISLAND
ROAD
Emmanuel Ch
S Parkway Sch
GISP69001
23
GISP35001
BW-7
GRAND ISLAND
BUFFALO
PARKWAY
Falconwood
21
FIX
ROAD
595
585
ROAD
NIAGARA
26
ALT
PARKWAY
ROAD
METROPOLITAN
GISP55001
SOUTH
Light
Radio Tower (WBEN)
RIVER
Light
BW-3
BUSH
ROAD
1336
591 530
Buffalo Launch Club
RIVER
25
NEW YORK
ONTARIO
FERRY
BW-5
ROAD
EAST
530
BM 572
28
Filtration Plant
Ferry Village
29
33
146
GISP49001
BEAVER ISLAND
592
STATE PARK
URBAN
Water Tank
16
587
GISP53001
GISP53001
Golf Course
AREA
Beaver Island
GISP54003
BW-1
574
3
8
Baker
CHIPPAWA
17
147
REGIONAL
ERIE CO
9
6
CHANNEL
Cr
1
19
30 BM 577
2
3
575
576
Miller
585
Cem

Dupont

Dpont
FMC

*********NOTICE*********

This wetland, FW No. BW-2, is also classified as a significant coastal fish and wildlife habitat. SEE STAWBERRY ISLAND - MOTOR ISLAND SHALLOWS file, under SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS, and habitat boundaries on coastal area maps.

BW-2

Terry Moore
Jim Snider
East River Wetland Determination, Beaver Island State Park
Grand Island, Erie County D.E.C. # 915-17-0224
April 18, 1977

This wetland determination was made as a result of a formal request by the Niagara Frontier State Park and Recreation Commission. I observed a nine-acre freshwater wetland which has one of the highest wildlife values for habitat along the Niagara River. Although this wetland does not qualify as a protected wetland under the 12.4 acre size criteria, I recommend that this area be classified as a protected freshwater wetland due to its local significance. It provides outstanding wildlife habitat for breeding, nesting, feeding and cover, has some value for fish spawning, provides an excellent recreation area for hiking, bird watching and photography, serves as an open space area and is a source of nutrients for many varied food cycles.

The Niagara Frontier Park and Recreation Commission has inquired as to whether a wetlands permit will be required for repair of the East River Marina. Since the marina is more than 100 feet from this wetland, there will be no need for a freshwater wetlands permit.

JRS:egb
Att.
cc: S. Doleski
J. Snider

James R Snider
James R. Snider
Senior Wildlife Biologist

STRUCTURAL GROUPS

AREA STRUCTURAL GROUPS

____% Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.

____% Woody - deciduous, coniferous, shrub swamp min. 25%.

____% Water - submergent, floating veg., wetland open water min. 15%

AREA COVERTYPE (min. 50% of area)

____% Wet Meadow

____% Emergent marsh

____% Deciduous swamp

____% Coniferous swamp

____% Shrub swamp

____% Floating/submergent veg.

____% Wetland open water

o single covertype is of at least 50% of the wetland
., add up all the separate covertype areas in each class
assign the wetland to the class representing the largest
portion of the wetland's area.

Class II.

____% Emgt. marsh; pur. loosestrife and/or phragmite max. 66% of covertype

____% TOTAL Class II

Class III

____% Emgt. marsh; pur. loosestrife and/or phragmite min. 66% of covertype

____% Deciduous swamp

____% Shrub swamp

____% Floating/submergent veg.

____% Wetland open water

____% TOTAL Class III

Class IV

____% Wet meadow

____% Coniferous swamp

____% TOTAL Class IV

Wetland area is 9± acres.

Covertype information is from field inspection report enclosed in this file.

It has been recommended that this wetland be protected because of its local significance to wildlife

This wetland is associated with the Niagara River as an external permanent open water body.

This wetland is within Beaver Island State Park.

The Niagara River is an "A" Class water body. 6NYCRR 837.4, item 1, page 1605.

Bureau of Wildlife wetland inventory map shows approximately 90% of this wetland. Portion of B of W Map enclosed in file.

FRESHWATER WETLAND CLASSIFICATION

:tions: Circle numbers of applicable classification characteristics and place check next to appropriate class. Note
of species to which characteristics 13, 14 or 15 apply shall be identified in parentheses with species considered a
te Class II characteristic in determining item 7. Complete information on reverse side of form to substantiate your
sions. A wetland with no Class I, II, or III characteristics is a Class IV wetland.

Town, ~~Village~~) Grand Island
Erie
name Buffalo N.W.

Wetland name EAST RIVER WETLAND
Wetland no. BW-2 DEC no. 915-17-0224
UTM Coord. 4764500m N. 178500m E.

Inspection Dates 4/13/77
No. of sheets attached 1
Preparer Kevin Lynch Date 4/22/81

CLASS I ✗

assic kettlehole bog
s. hab., thr./endg. anim. sp.
r./endg. plant sp.
us. abund./div. anim. sp. in
gion or state
gnificant flood protection for
ibstantially developed area
ij./contig. to reservoir or public
ater supply or hydraulically
onnected to public water supply
quifer.
or more Class II characteristics

CLASS II ✓

[✓ 8.] Emgt. marsh: pur. loosestrife and/or phragmites max. 66% of covertype
9. 2 or more wetland structural groups
10. Contig. to tidal wetlands
[✓ 11.] Assoc. with ext. perm. open water
[✓ 12.] Adj./contig. C(t) or higher stream
13. ( ) mig. hab. thr./endg. anim. sp.
14. ( ) Res. hab. vuln. anim. sp.: state
15. ( ) Vuln. plant sp.: state
16. Unus. abund/dv. anim. sp.; county
[✓ 17.] Archeo./paleo. significance
18. Unusual geologic feature
19. Flood protection value: agr., light or planned development area
20. Hydraulically connected to aquifer
21. Tertiary treatment capacity for a sewage disposal system
[✓ 22.] Within urbanized area
23. 1 of 3 lgst. wetlands: city, town, NYC Borough
[✓ 24.] In publicly owned recreation area

CLASS III ____

[✓ 25.] Emgt. marsh. pur. loosestrife and/or phragmites min. 66% of covertype
26. Deciduous swamp
27. Shrub swamp
28. Floating and/or submergent veg.
29. Wetland open water
30. Contains island
31. Total alkalinity at least 50 PPM
32. Adj. to fert. upland; high base soils
33. Res./mig. hab. of vuln. anim. sp. Res. for region; mig. for region or state
34. Vuln. plant sp.; region
35. Part of significantly polluted permanent open water system in which pollution reduction occurs
36. Visible and aesthetic/open space value
[✓ 37.] 1 of 3 lgst. wetlands of same covertype within a town
38. Wetland acreage max. 1% of total town acreage
39. Publicly owned land open to public use

WETLAND INVENTORY FIELD DATA SHEET
ADDITIONAL COMMENTS

ional Comments:

This wetland is one of very few cattail-emergent wetlands which are directly connected to the Niagara River. Because it is a very valuable wetland for wildlife and to some extent for fisheries, it should be protected. Since it is already owned by the Beaver Island State Park, it should be left in its existing state and preserved from any future alteration or development.

rce: J. Snider

vestigator: James R. Snider

le: Senior Wildlife Biologist Date: April 15, 1977

WETLAND INVENTORY FIELD DATA SHEET
VEGETATION, FISH, WILDLIFE

Known Vegetation

Species / Genus	occ	com	dom
Softstem bulrush-Scirpus validus	☐	☒	☐
	☐	☐	☐
Broadleaf cattail-Typha	☐	☐	☒
latifolia	☐	☐	☐
Smartweed-Polygonum	☐	☒	☐
Sedge-Carex. spp.	☐	☒	☐
Bulrush-Scirpus spp.	☐	☒	☐
Duckweed-Lemna spp.	☐	☒	☐
Willow-Salix spp.	☐	☒	☐
Speckled Alder-Alnus rugosa	☒	☐	☐
Red-osier dogwood-Cornus	☐	☒	☐
stolonifera	☐	☐	☐
Elderberry-Sambucus canadensis	☒	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
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	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

Known Fish and Wildlife (p= prod., u= use)

Species / Genus	rare	com	abun
Mallard-Anas platyrhynchos	☐	☐	☒
Black Duck-Anas rubripes(p)	☐	☒	☐
Blue-winged teal-Anas	☐	☒	☐
discors (p)	☐	☐	☐
Greater Scaup-Aythya marila	☐	☐	☒
neartica (u)	☐	☐	☐
Canvasback-Aythya valisineria	☐	☐	☒
(u)	☐	☐	☐
Goldeneye-Glaucionetta	☐	☒	☐
clangula americana (u)	☐	☐	☐
Woodcock-Philohela minor (u)	☐	☒	☐
Belted Kingfisher-Megaceryle	☐	☒	☐
alcyon (u)	☐	☐	☐
Assorted shorebird &	☐	☐	☐
wading birds	☐	☐	☐
Muskrat-Ondatra zibethica(p)	☐	☐	☒
Raccoon-Procyon lotor (u)	☐	☒	☐
Snapping turtle-(p) Chelydra	☐	☒	☐
serpentina	☐	☐	☐
Midland painted turtle-	☐	☒	☐
Chrysemys picta marginata (p)	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

Place an asterisk by unique vegetation, fish, wildlife
Reproduce this page to add more species

UTM__|__|__|__/__|__|__|__|

WETLAND INVENTORY FIELD DATA SHEET
INFLUENCES AND VALUES

Man influence	Min.	Mod.	Maj.
Beaver Island State Park-	☒	☐	☐
Golf Course	☐	☐	☐
Beaver Island State Park-	☒	☐	☐
East River Marina	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

Prod. loss to degradation ? % perhaps 5%

Source: J. Snider

Vulnerability to destruction

----low-----------medium-----------high----

☐	☐	☒	☐	☐	☐
0	1	2	3	4	5

Reason for vulnerability classification

There exists a potential demand on this area for additional park facilities in the future i.e. Larger marina, etc.

Source: J. Snider

Enhancement possibility

☒ low ☐ medium ☐ high

Work needed:

Expected gain

Source:

Known ownership ☐ Federal ☒ State ☐ Local

☐ Conservation Organ. ☐ Sport ☐ Private

MISCELLANEOUS VALUES (use boxes to describe)

Unique Geology

Source:

Unique in Environs

This wetland is one of the few cattail-emergent vegetation wetlands which border on the Niagara River.

Source: J. Snider

Flood Control

Source:

Sediment Filtering

Small stream from the Beaver Island State Park golf course empties into the wetland.

Source: J. Snider

Potential Use

Source:

Aesthetic/Open Space

Old road adjacent to this wetland serves as a valuable access trail for bird watching, etc.

Source: J. Snider

Historical Value

Source:

Migration Distribution (flight lane)

Wetland borders on Niagara River which is a migratory spot for some puddle ducks and wintering area for thousands of diving ducks. Also excellent habitat for /shore birds.

Source: J. Snider

Fish Spawning Area

Open winter areas have some potential for spawning area for bass, w. pike, bullheads, etc.

Source: J. Snider

WETLAND# BW-2 915-11-0224

WETLAND INVENTORY FIELD DATA SHEET
CLASSIFICATION

UTM ____________

Name East River Wetland

Miles 2 dir NW from Buffalo

Topo. quad Buffalo NW

County Erie

Town Grand Island

Region 9 ☒ Natural ☐ Artificial

Interspersion 6 Vegetative Cover 90 %

6-24" depth 10 %

WETLAND TYPES

Inland Fresh

1. Seasonally flooded basins/flats ____%
2. Fresh meadows ____%
3. Shallow fresh marshes 85 %
4. Deep fresh marshes 10 %
5. Open fresh marshes 5 %
6. Shrub swamps ____%
7. Wooded swamps ____%
8. Bogs ____%

Coastal Fresh

12. Shallow fresh marshes ____%
13. Deep fresh marshes ____%
14. Open fresh water ____%

Coastal Saline

15. Salt flats ____%
16. Salt meadows ____%
18. Regularly flooded salt marshes ____%
19. Sounds and bays ____%

VEGETATIVE CLASSES

Trees

1. Live deciduous trees ____%
2. Live evergreen trees ____%
3. Dead trees ____%

Shrubs

4. Tall slender shrubs 5 %
5. Bushy shrubs ____%
6. Low compact shrubs ____%
7. Low sparse shrubs ____%
8. Aquatic shrubs ____%
9. Dead shrubs ____%

Emergents

10. Sub-shrubs ____%
11. Robust emergents 50 %
12. Tall meadow emergents 30 %
13. Short meadow emergents 10 %
14. Narrow-leaved marsh emergents ____%
15. Broad-leaved marsh emergents ____%

Surface Vegetation

16. Floating-leaved vegetation ____%
17. Floating vegetation ____%

Submergents

18. Submergents 5 %

* *

If open water, proportion of submergents:

☒ 0-1/3 ☐ 1/3-2/3 ☐ 2/3-1

☐ Meadow portion grazed

Purple loosestrife: ☐ None ☐ Ind. plants

☐ Clumps <½m. diam. ☐ Clumps >½m. diam.

☐ Adjoining clumps through an area

☐ Solid, most of wetland

Green timber impoundment potential

☐ Mature or overmature trees ☐ Trees 80-100'

☐ 80% crown closure ☐ About 30"+ muck

☐ Red, Swamp Wh. Oak, Red Ash

☐ Understory: Sensitive Fern/Arrow Arum

Water

Total alkalinity (1)______ (2)______ (3)______

(4)______ (5)______ (6)______ (7)______

(8)______ (9)______ (10)______ mean:______

Water temp. (1)______ (2)______ (3)______

(4)______ (5)______ (6)______ (7)______

(8)______ (9)______ (10)______

☐ Not enough water to sample

Investigator: James Snider

Title: Senior Wildlife Biologist

Date: April 13, 1977 Time: 1 p.m.

Additional Comments

Wetland Area-
9 acres in size

Wetland Soils-
Erie County S.C.S. office lists this s
as associated with a freshwater wetland. This soil is very high in organic matte
and very poorly drained.

Water Regime-
This wetland's wate
level is directly influenced by the volu
of water flowing in t
Niagara River. Thi
could result in fluctuations in water level of up to 1 fo
at various times of th
year.

5-182

Dupont, FMC

FRESHWATER WETLAND CLASSIFICATION

ructions: Circle numbers of applicable classification characteristics and place check next to appropriate class. Note er of species to which characteristics 13, 14 or 15 apply shall be identified in parentheses with species considered a rate Class II characteristic in determining item 7. Complete information on reverse side of form to substantiate your lusions. A wetland with no Class I, II, or III characteristics is a Class IV wetland.

y, Town, ~~Village~~) Tonawanda
ty Erie
. name Buffalo NW

Wetland name Sawyer Avenue Wetland
Wetland no. BW-6 DEC no. 115-26-0169
UTM Coord. 4766 600m N. 180 600m E.

Inspection Dates 11/29/79
No. of sheets attached 1
Preparer [illegible] Date [illegible]

CLASS I

Classic kettlehole bog
Res. hab., thr./endg. anim. sp.
Thr./endg. plant sp.
Unus. abund./div. anim. sp. in region or state
Significant flood protection for substantially developed area
Adj./contig. to reservoir or public water supply or hydraulically connected to public water supply aquifer
4 or more Class II characteristics

CLASS II X

⑧ Emgt. marsh: pur. loosestrife and/or phragmites max. 66% of covertype
9. 2 or more wetland structural groups
10. Contig. to tidal wetlands
11. Assoc. with ext. perm. open water
12. Adj./contig. C(t) or higher stream
13. ( ) mig. hab. thr./endg. anim. sp.
14. ( ) Res. hab. vuln. anim. sp.: state
15. ( ) Vuln. plant sp.: state
16. Unus. abund/dv. anim. sp.; county
17. Archeo./paleo. significance
18. Unusual geologic feature
19. Flood protection value: agr., light or planned development area
20. Hydraulically connected to aquifer
21. Tertiary treatment capacity for a sewage disposal system
㉒ Within urbanized area
㉓ 1 of 3 lgst. wetlands: city, town, NYC Borough
24. In publicly owned recreation area

CLASS III

25. Emgt. marsh, pur. loosestrife an or phragmites min. 66% of covert
26. Deciduous swamp
27. Shrub swamp
28. Floating and/or submergent veg.
29. Wetland open water
30. Contains island
31. Total alkalinity at least 50 PPM
32. Adj. to fert. upland; high base soils
33. Res./mig. hab. of vuln. anim. sp Res. for region; mig. for region or state
34. Vuln. plant sp.; region
? ㉟ Part of significantly polluted permanent open water system in which pollution reduction occurs
36. Visible and aesthetic/open space value
㊲ 1 of 3 lgst. wetlands of same covertype within a town
㊳ Wetland acreage max. 1% of total town acreage
39. Publicly owned land open to public use

Y?	AREA	STRUCTURAL GROUPS
	85 %	Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.
	15 %	Woody - deciduous, coniferous, shrub swamp min. 25%.
	%	Water - submergent, floating veg., wetland open water min. 15%

Y?	AREA	COVERTYPE COVERTYPE (min. 50% of area)
	50 %	Wet Meadow
	35 %	Emergent marsh
	15 %	Deciduous swamp
	%	Coniferous swamp
	%	Shrub swamp
	%	Floating/submergent veg.
	%	Wetland open water

no single covertype is of at least 50% of the wetland
a, add up all the separate covertype areas in each class
assign the wetland to the class representing the largest
portion of the wetland's area.

		Class II
	%	Emgt. marsh; pur. loosestrife and/or phragmite max. 66% of covertype
	%	TOTAL Class II
		Class III
	%	Emgt. marsh; pur. loosestrife and/or phragmite min. 66% of covertype
	%	Deciduous swamp
	%	Shrub swamp
	%	Floating/submergent veg.
	%	Wetland open water
	%	TOTAL Class III
		Class IV
	%	Wet meadow
	%	Coniferous swamp
	%	TOTAL Class IV

Wetland area is 30 acres. This and all other information is from Field Inspection Report.

The area around this wetland is heavily Industrial.

NYTM coordinates from Tentative Regulatory Map

915-26-0169

BW-6

WETLAND DATA

WETLAND NAME: Sawyer Ave. Wetland

LOCATION: (See attached map)

Quad: (USGS)(DOT) Buffalo NW

County: Erie

Town: Tonawanda

Miles 1/8 Dir. SW From Intersection of I 190 & I 290

INVESTIGATOR(S): J. R. Snider

DATE(S) OF FIELD INVESTIGATION:

Date(s)	Weather
11/29/79	Sunny, windy, 35°

TYPE OF ANALYSIS:

a. Reconnaissance ✓

b. Releve'

c. Continuum

VEGETATION COMMUNITY:

a. Size of Wetland 30 ✓

b. Covertypes (estimated percentage)

1.	Wet meadow	50 %
2.	Emergent Marsh	35 %
3.	Deciduous Swamp	15 %
4.	Coniferous Swamp	%
5.	Shrubs Swamp	%
6.	Submergent &/or floating	%
7.	Wetland open water	%

c. Remarks:

ECOLOGICAL ASSOCIATIONS

1. Covertype Groups

1. + 2. = 85 %

3 + 4 + 5 = 15 %

6 + 7 = %

2. ~~Classic Kettlehole bog~~

4. ~~Associated with open water~~

~~Water~~

5. ~~Proximity to Mud Flats~~

6. ~~Island present~~

7. ~~Adjacent to Class C(T) or higher stream~~

SPECIAL FEATURES

~~Al~~ Wetland area is almost completely surrounded by heavy industry & oil storage facilities.

HYDROLOGICAL + POLLUTION CONTROL FEATURES
(Reference information sources where appropriate)

Serves as a settling area for sediments and other runoff materials from surrounding industries,

OTHER NOTABLE FEATURES
(Reference Information Sources where appropriate)

1. Soils

Lakemont silty clay loam and silt loam. - deep, poorly drained soils.

Odessa silt loam - deep, somewhat poorly drained soils

2. Human influence-degradation

Area is heavily influenced by access roads, railroad tracks and transmission lines which occur in the area. It appears that runoff from industries nearby have affected the wetland in an adverse manner.

OTHER NOTABLE FEATURES (Cont.)

3. Description of Faunal Community

Observations made at the time of the field inspection:

Robin - Turdus migratorius
Muskrat - Ondatra zibethica
Ring-necked pheasant - (Phasianus colchicus torquatus
Starlings - Sturnus vulgaris vulgaris

Numerous other amphibians, reptiles, birds & mammals would be expected to use this wetland

4. Others

Vegetation -
See attached list

NOTE: Attach all supporting documents - Floristic & Faunal lists, Engineer's reports, etc.

FLORISTIC CHECKLIST FOR WETLANDS DETERMINATION

Indicated species were found to be present in this wetland

	Cover-type*	Abundance**
A. WETLAND TREES		
Ash, Red &/or Green (*Fraxinus pennsylvanica* &/or var. *subintegerrima*)	3	5
Elm, American (*Ulmus americana*)	3	+
Maple, Red (*Acer rubrum*)		
Maple, Silver (*Acer saccharinum*)		
Oak, Sw. Wh. (*Quercus bicolor*)		
Willow, Black (*Salix nigra*)		
Oak, Pin (*Quercus palustris*)	3	+
B. WETLAND SHRUBS		
Alder, Tag (*Alnus rugosa*)		
Buttonbush (*Cephalanthus occidentalis*)		
Chokeberry, Black (*Pyrus melanocarpa*)		
Dogwood, Red Osier (*Cornus stolonifera*)	1&5	1
Dogwood, Silky (*Cornus amomum*)	1&5	1
Rose, Swamp (*Rosa palustris*)		
Spireas (*Spirea sp.*)	1	+
Viburnum, Arrowwood (*Viburnum recognitum*)		
Viburnum, Wildraisin (*Viburnum cassinoides*)		
Willows (*Salix spp.*)		
Winterberry Holly, com. (*Ilex verticillata*)		
C. EMERGENTS		
Arrowhead (*Sagittaria spp.*)		
Arrow arum (*Peltandra virginica*)		
Beggar Tick (*Bidens spp.*)		
Bulb-bearing Water Hemlock (*Cicuta bulbifera*)		
Bulrushes (*Scirpus spp.*)	2	1
Bur-reed (*Sparganium spp.*)		
Cattail (*Typha latifolia* &/or *T. angustifolia*)	2	3
Fern, Marsh (*Thelypteris palustris*)		
Forget-me-not (*Myosotis scorpoides*)		
Iris, Yellow (*Iris pseudacorus*)		
Loosestrife, Purple (*Lythrum*	1&2	+

	Cover-type*	Abundance**
C. EMERGENTS (Cont.)		
Loosestrife, Yellow (*Lysmachia sp.*)		
Pickerelweed (*Pontederia cordata*)		
Purslane, Water (*Ludwigia palustris*)		
Reed (*Phragmites australis*)	2	2
Sedges (*Carex spp.*)	1&2	1
Smartweed, (*Polygonum sp*)	~~0~~ 1	1
Swamp milkweed (*Asclepias incarnata*)	1&2	+
Water plantain (*Alisma spp.*)		
Water-horehound (Bugelweed)(*Lycopsis spp.*)		
Willow-herb (*Epilobium spp.*)		
Woolgrass (*Scirpus spp.*)		
D. ROOTED, FLOATING LEAVES		
Frogbit (*Limnobium spongia*)		
White Water Lilly (*Nymphaea odorata*)		
Yellow Pond-lily (*Nuphar spp.*)		
E. FREE FLOATING		
Duckweed, Lesser (*Lemna minor*)		
F. WET MEADOW AND/OR UNDERSTORY		
Arrowleaved Tearthumb (*Polygonum sagittatum*)		
Aster, Purple Stem (*Aster puniceus*)	1	1
Boneset (*Eupatorium perfoliatum*)		
Bulrush (*Scirpus spp.*)		
Fern, Cinnamon (*Onoclea cinnamomea*)		
Fern, Sensitive (*Onoclea sensibilis*)		
Iris, Larger Blueflag (*Iris versicolor*)		

FLORISTIC CHECKLIST PAGE 2

F. WET MEADOW AND/OR UNDERSTORY (Cont.)

	Cover-type*	Abundance**
Joe-pye-weed (*Eupatorium fistulosum* or *E. maculatum*)		
Manna Grass (*Glyceria sp.*)		
Marsh Marigold (*Caltha palustris*)		
Meadowrue, Tall (*Thalictrum polygamum*)		
Moneywort (*Lysmachia nummularia*)		
Moss, Sphagnum (*Sphagnum sp.*)		
Rattlesnake Grass (*Glyceria canadensis*)		
Reed-Meadow Grass (*Glyceria grandis*)		
Reed Canarygrass (*Phalaris arundinacea*)	1	2
Rice Cut-grass (*Leersia oryzoides*)		
Rush (*Juncus sp. spp.*)	1	3
Rush, Soft (*Juncus effusus*)	1	1
Sedges (*Carex spp.*)	1	3
Skunk Cabbage (*Symplocarpus foetidus*)		
Spikerush (*Eleocharis spp.*)		
Touch-me-not (*Impatiens pallida* or *I. capensis*)		

G. BOG MAT (Use only if mat is present)

	Cover-type*	Abundance**
Labrador Tea (*Ledum goenlandicum*)		
Leatherleaf (*Chamaedaphne calculata*)		
Sphagnum Moss (*Sphagnum sp.* (*spp.*)		

H. SUBMERGENTS

	Cover-type*	Abundance**
Coontail (*Ceratophyllum demersum*)		
Pondweeds (*Potamoziton sp.*)		
Water Milfoil (*Myriophyllum sp.* (*spp.*)		
Waterweed (*Elodea sp.*)		

I. ADAPTABLE SPECIES

	Cover-type*	Abundance**
Aspen, Quaking (*Populus tremuloides*)		
Cottonwood, Eastern (*Populus deltoides*)	3	+
Elder, American (*Sambucus canadensis*)		
Hemlock, Eastern (*Tsuga canadensis*)		
Nightshade, Purple (*Solanum dulcamara*)	3	+
Pine, White (*Pinus strobus*)		
Poison Ivy (*Rhus radicans*)		

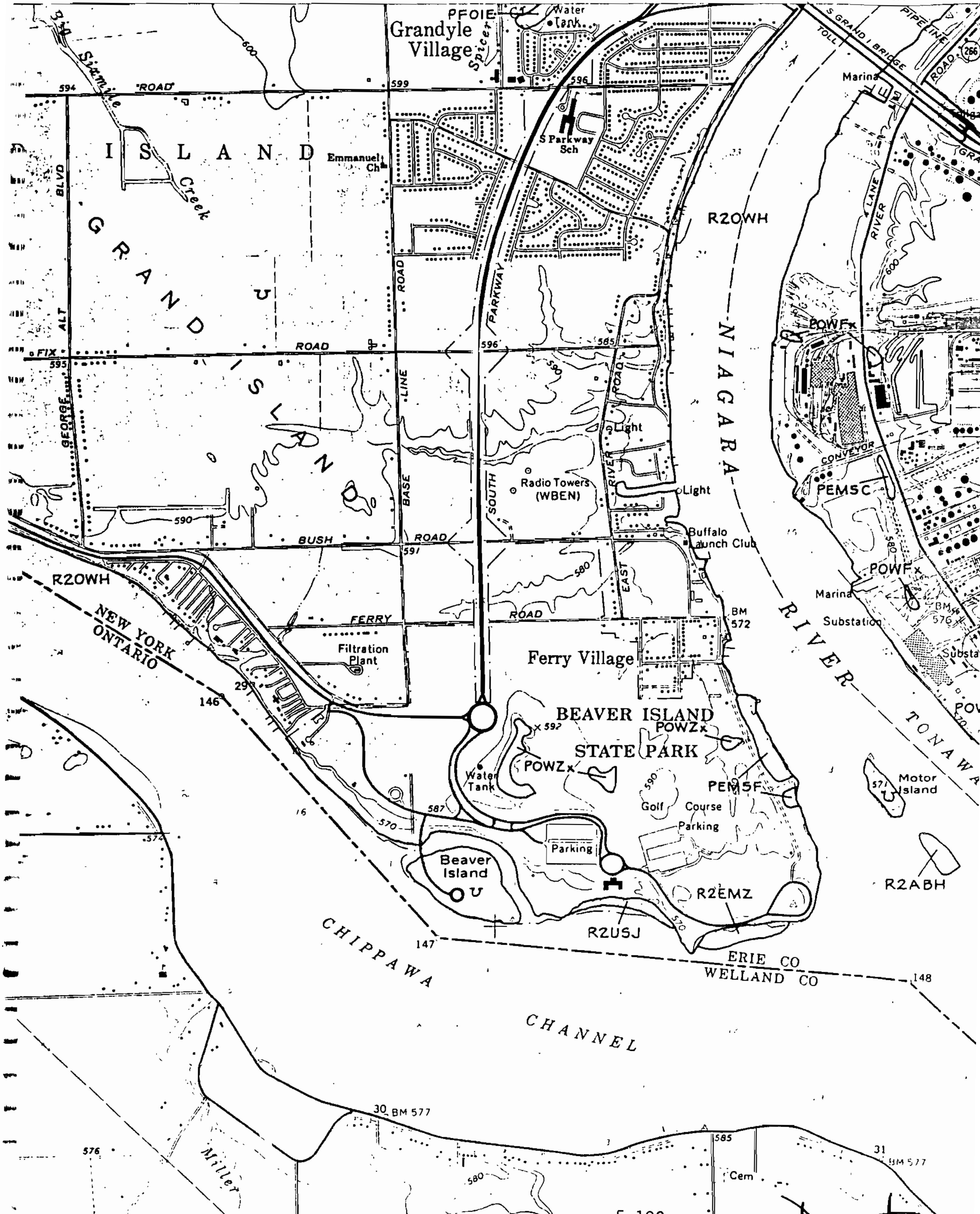
*COVERTYPE SYMBOL

1. Wet meadow
2. Emergent marsh
3. Deciduous swamp
4. Coniferous swamp
5. Shrub swamp
6. Submergent and/or Floating pla

**ABUNDANCE SYMBOL

5.	75% - 100% of cover
4.	50% - 75% of cover
3.	25% - 50% of cover
2.	5% - 25% of cover
1.	5% of cover
+	Forming clumps, patches or colonies.
r	Rare or solitary.

(ex. 1+ is a species contributing less than 5% to a covertype and occurring in clumps)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CONVEYOR
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LINE
BASE ROAD
GEORGE
SOUTH PARKWAY
RIVER ROAD
EAST
Light
Radio Towers (WBEN)
590
BUSH ROAD
591
580
Buffalo Launch Club
R2OWH
NEW YORK
ONTARIO
FERRY ROAD
Filtration Plant
Ferry Village
BM 572
Marina
Substation
POWFx
BM 576
Substation
29
146
BEAVER ISLAND STATE PARK
x 592
POWZx
POWZx
Water Tank
PEM5F
590
Golf Course
Parking
Parking
587
570
Beaver Island
R2EMZ
R2USJ
570
TONAWANDA
POW
Motor Island
571
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ERIE CO
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574
CHIPPAWA CHANNEL
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31 BM 577
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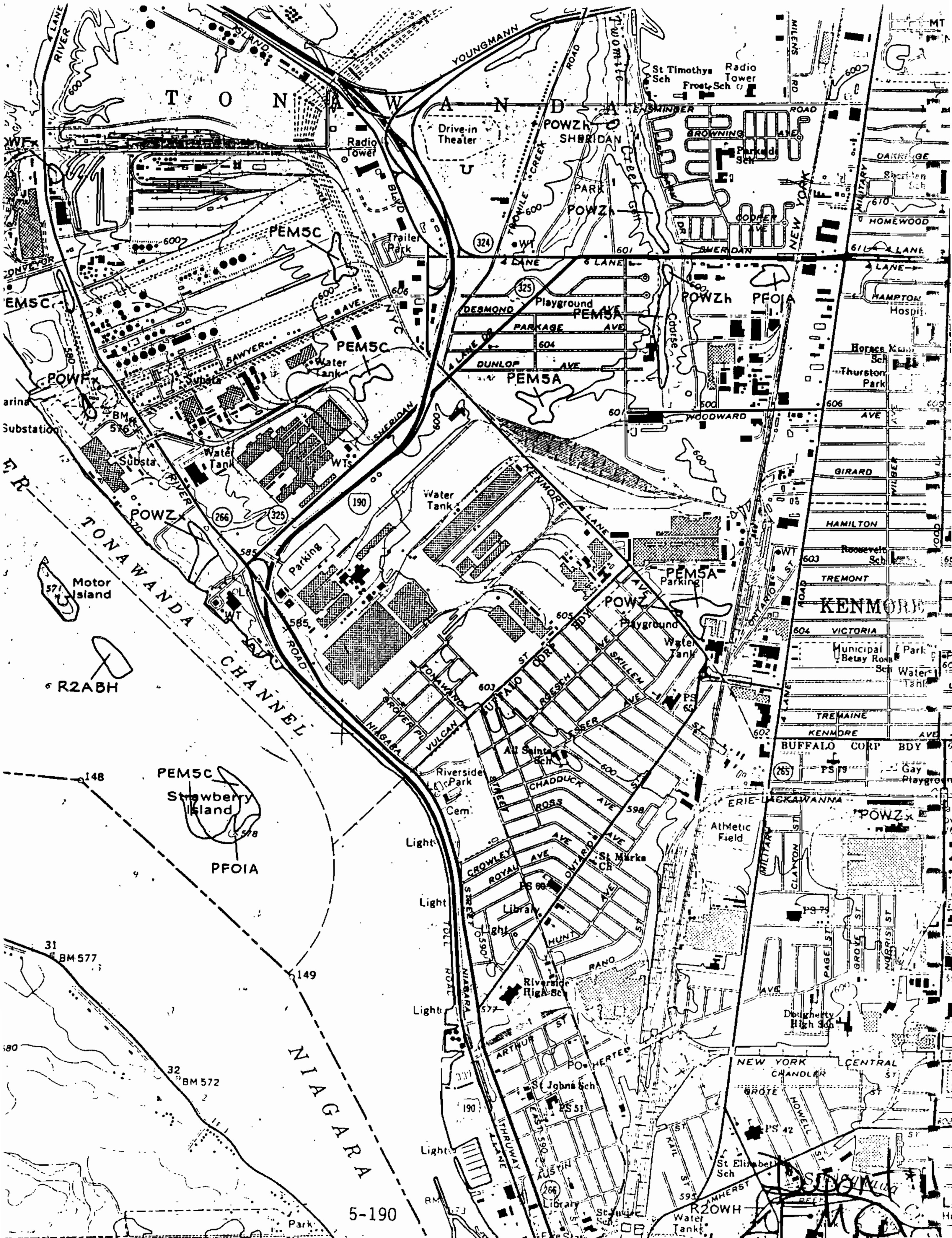
Miller Creek
580
Cem

Dupont


RIVER LANE
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T O N A W A N D A
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Drive-in Theater
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Radio Tower
BLVD
TWOMILE CREEK
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Playground
PEM5A
Golf Course
POWZh
PFO1A
HAMPTON
Hospital
DESMOND
AVE
PARKAGE AVE
604
SAWYER AVE
NYC
PEM5C
Water Tank
DUNLOP AVE
PEM5A
Horace Mann Sch
Thurston Park
POWFx
Substa
BM 576
arina
Substation
SHERIDAN
600
601
WOODWARD
606 AVE
Water Tank
WTs
Substa
RIVER
GIRARD
WILBER
Water Tank
190
KENMORE
HAMILTON
POWZ
266
325
TONAWANDA CHANNEL
585
Parking
LANE
WT
603
Roosevelt Sch
TREMONT
PEM5A
Parking
Motor Island
571
OL
WT
585
ROAD
AVE
POWZ
605
BDY
Playground
ONTARIO
KENMORE
604 VICTORIA
Municipal Betsy Ross Sch
Park
Water Tank
Water Tank
R2ABH
TONAWANDA
603
ST
BUFFALO CORP BDY
ROESCH
AVE
SKILLEM
PS 62
GROVER PL
VULCAN
NIAGARA
ESSER
AVE
ST
LANE
TREMAINE
KENMORE AVE
602
BUFFALO CORP BDY
265
PS 79
Gay Playground
148
PEM5C
Strawberry Island
578
PFO1A
All Saints Sch
Riverside Park
Cem
STREET
CHADDUCK
600
ROSS
AVE
598
ERIE LACKAWANNA
POWZ
Athletic Field
Light
CROWLEY
ROYAL AVE
ONTARIO
AVE
St Marks Ch
MILITARY
CLAYTON ST
PS 60
Light
Library
Light
TOLL ROAD
590
HUNT
ST
PS 79
GROVE ST
NORRIS ST
PAGE ST
RANO
31
BM 577
149
Riverside High Sch
AVE
Light
577
NIAGARA
ST
ARTHUR
Dougherty High Sch
580
NIAGARA
PO
HERTEL
NEW YORK CENTRAL
CHANDLER ST
32
BM 572
St Johns Sch
190
PS 51
GROTE ST
HOWELL
ST
PS 42
THRUWAY
EAST 590
Light
LANE
KAIL
St Elizabeth Sch
AUSTIN
266
Library
AMHERST
595
R2OWH
Water Tank
St Judes
BM
Park

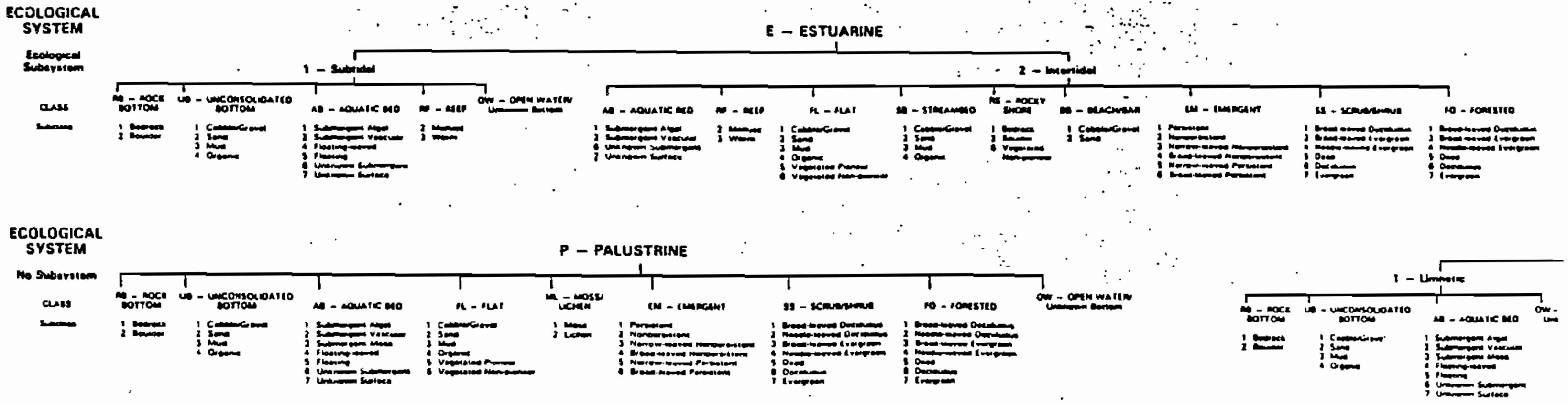
U.S. Fish and Wildlife Service
1 Gateway Center, Suite 700
Newton Corner, Massachusetts 02158

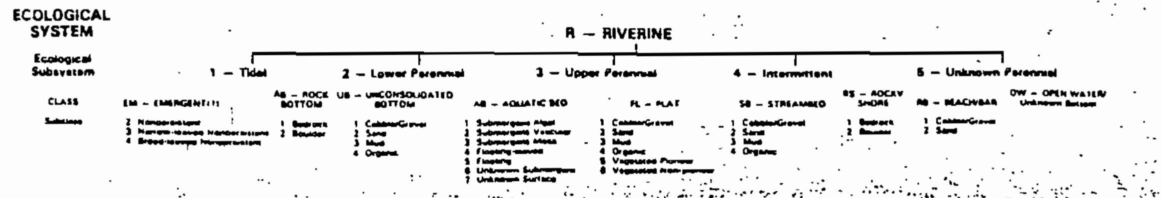
Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

▨ CONTROLLED WATER REGI

WETLAND LEGEND

U – Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.





(1) EM – EMERGENTS are only found in the Riverine Tidal and Riverine Lower Perennial Ecological Subsystems. All other classes are found in all Riverine Ecological Subsystems.

In order to more adequately desc
may be applied at the c

WATER REGIME(1)

Non-Tidal

A Temporary
B Saturated
C Seasonal
D Seasonal Well-drained
E Seasonal Saturated
F Semipermanent
G Intermittently Exposed
H Permanent
J Intermittently Flooded
K Artificial
Z Intermittently Exposed/Permanent
W Intermittently Flooded/Temporary
Y Saturated/Semipermanent/Seasonal
U Unknown

Tid

K Artificial
L Subtidal
M Irregularly Exposed
N Regular
P Irregular

(1) Information on the water regime modifiers found on this legend, but not found i

U.S. [illegible]

FISH AND WILDLIFE SERVICE

Prepared by Office of Biological Services
for the National Wetlands Inventory

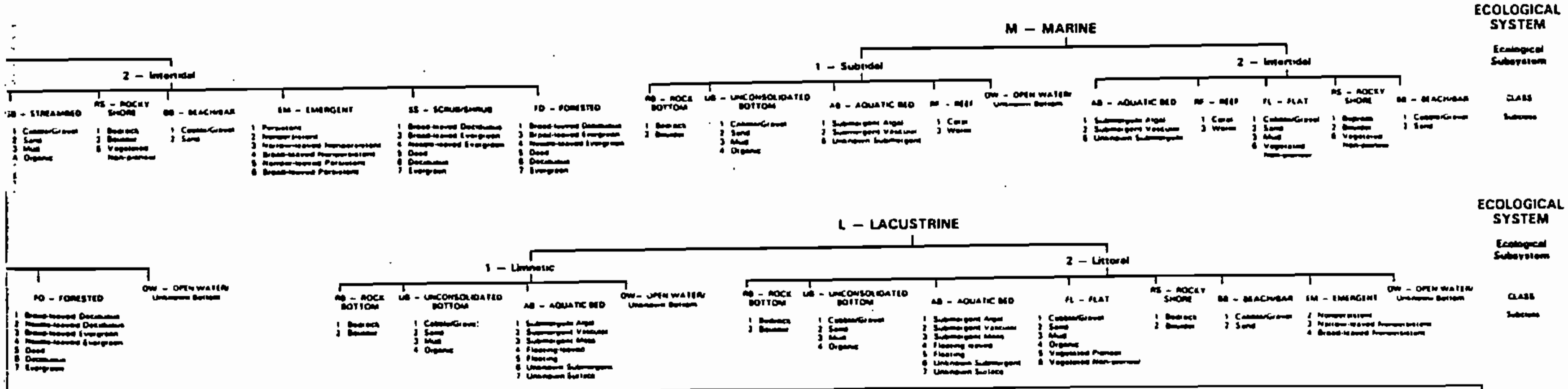
SCALE: __________
TYPE: B-W
DATE: / /
SCALE: __________
TYPE: __________
DATE: / /
SCALE: __________
TYPE: __________

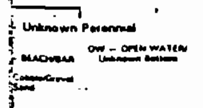
CONTROLLED WATER REGIME

al regulatory agencies with jurisdic- define and describe wetlands in a at used in this inventory. There is e design or products of this inven- s of proprietary jurisdiction of any government or to establish the he regulatory programs of govern- intending to engage in activities in- ithin or adjacent to wetland areas I appropriate Federal, State or local ecified agency regulatory programs ons that may effect such activities.

WETLAND LEGEND

U.— Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.





MODIFYING TERMS

In order to more adequately describe wetland and aquatic habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME(1)				WATER CHEMISTRY			SOIL	SPECIAL MODIFIERS	
Non-Tidal		Tidal		Coastal Salinity	Inland Salinity	pH Modifiers for all Fresh Water			
A Temporary	H Permanent	K Artificial	R Seasonal Tidal	1 Hyperhaline	7 Hypersaline	a Acid	g Organic	b Beaver	h Diked/Impounded
B Saturated	J Intermittently Flooded	L Subtidal	S Temporary Tidal	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral	d Partially Drained/Ditched	r Artificial
C Seasonal	K Artificial	M Irregularly Exposed	T Semipermanent Tidal	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline		f Farmed	s Spoil
D Seasonal Well-drained	Z Intermittently Exposed/Permanent	N Regular	V Permanent Tidal	4 Polyhaline	0 Fresh				x Excavated
E Seasonal Saturated	W Intermittently Flooded/Temporary	P Irregular	U Unknown	5 Mesohaline					
F Semipermanent	Y Saturated/Semipermanent/Seasonal			6 Oligohaline					
G Intermittently Exposed	U Unknown			0 Fresh					

(1) Information on the water regime modifiers found on this legend, but not found in the classification system, may be obtained from the above listed source.

ERIE COUNTY (15)

* * *

○	1	Huckleberry Swamp	
☑	~~1.~~	~~Lower Niagara River Duck Wintering Area~~	~~Aerial-Survey~~
☑	2.	Grand Island & Vicinity of Upper River	Wayne Hadley
☑	3.	*Strawberry Island	Wayne Hadley & Robert F. Andr
■	4.	Tillman Road Swamp	Erie County EMC
☑	5.	Spring Brook	Gordon Deitrich III
⊙	6.	Spooner Creek Valley	Gordon Deitrich III
☑	7.	Times Beach Diked Dredge Disposal Site	Robert F. Andrle (Dr.)
☑	8.	Buckhorn Island Control Dike Gull and Tern Colony	Robert F. Andrle
☑	9.	Donnelley's Pier (North Breakwater) & North End Light Breakwater Gull and Tern Colonies	Robert F. Andrle
☑	10.	Source of the Niagara River Waterfowl, Gull and Tern Concentration Area (International)	Robert F. Andrle
☑	11.	Pinehurst Raptor Migration Observation Site	Robert F. Andrle
☐	12.	Dead Man's Lake Bog	Terry Moore (DEC) and Alan Seidman
☑	13.	Burnt Ship Creek Waterfowl and Marsh Bird Habitat	Dr. Robert F. Andrle
☐	14.	Hemstreet Road Site	Alan Seidman
☐	15.	Vail Road Site	Alan Seidman
☑	16.	Buffalo Bridge to Cattaraugus Creek Duck Wintering Area	Aerial Survey
○	17.	Onondaga Escarpment - Harris Hill - Clarence	

10. Eighteen Mile Creek - Towns of Evans and Hamburg. This scenic gorge area between Old Lake Shore Boulevard and Lake Erie has remained essentially undisturbed from human and commercial development. The only indiscriminate use is by fishermen. The land is protected by a restrictive clause in the deed to prevent any commercial development. The area has lush growth of ferns, and large Eastern Cottonwoods dominate the gorge. Eighteen Mile Creek diffuses into several channels at this delta. Large scale human use and/or pollutants could have a devastating effect on this pristine lakeshore habitat due to its close proximity to Metropolitan Buffalo. Details of the area can be found in the fishing rights acquisition file located in the Olean office.

11. Counterfeiters Ledge - Town of Newstead. This 27 acre area also extends into the County of Genesee. This area is similar to the Onondaga Limestone Escarpment. Calciphilic plants occur here. Wood cutting and residential development represent the only major threats to this area.

12. Newstead Sink - Town of Newstead. The area (200 acres±) is in two parcels located on either side of the New York State Thruway. The Spring flooding provides a stopover for several thousand ducks, geese and swans. It is probably the most highly used waterfowl area in Erie County. The area provides nesting habitat for some resident waterfowl. The most important threat is due to agricultural drainage and encroachment.

E. Niagara County:

Niagara Gorge (Hydroelectric Gull Concentration Area) - Town of Lewiston, Town of Niagara on the Lake. This is one of the largest Gull concentration (10,000+) areas in the Region. They are attracted by the "chumming" of small fish at the hydroelectric plants. The rocky, nearly vertical walls are quite safe from disturbance, except a potential threat exists from additional expansion of power projects by the U.S. or Canada.

F. Wyoming County:

Beaver Meadows Nature Sanctuary - Town of Java. This 226 acre diverse, ecological area is owned by the Buffalo Audubon Society. The area is used as an outdoor laboratory and educational center. The area is unique in providing several diverse communities in close proximity to each other.

Terry L. Moore
Regional Wildlife Manager
Region 9

Attach

is destined to be filled with dredge material. However, the area is very valuable to local and migratory birds and should be maintained in its present state. It has the potential of being lost if the Corps continues its plans to fill the site.

5. Gull and Tern Colony - Buckhorn Island - Town of Grand Island. This man-made (rock) dike is the site of one of the few and largest Gull and Tern nesting colonies in the area. While the area itself will tend to remain, it is subject to visitation by humans. Disturbance during nesting could be disastrous to the reproduction of Gulls and Terns. 15-8

6. Donnelley's Pier and North End Light Breakwater Gull and Tern Colonies - City of Buffalo. These breakwaters provide the only two major Gull and Tern nesting sites in the Buffalo area. Even though these piers are permanent, there is the chance of rehabilitation of the piers which would destroy the nest sites. Also, human disturbance during the nesting period could be detrimental to the reproduction of Gulls and Terns. 15-9

7. Burnt Ship Canal and Buckhorn Island - Town of Grand Island. This large cattail, rush and marsh habitat supports a large variety of aquatic life which provides feeding and nesting habitat for a variety of waterfowl and shorebirds. The area also hosts a large number and variety of migratory waterfowl. In fact, the area serves as the southern terminus of a large number of diving ducks. Buckhorn Island is under control of the Niagara Frontier State Park Commission and should be relatively safe from degradation. 15-13

8. Hempstead Road Site - Town of Marilla - 10 acres. This bog contains rare and unique flora characteristics of the boreal forest. Since the area is on private land, it is subject to filling or draining unless protected under the Freshwater Wetlands Protection Act. Also, the area could be subject to degradation by National Fuel Gas by the laying of a large diameter gas line. 15-14

9. Onondaga Limestone Escarpment - Harris Hill - Clarence. This 27 acre calcareous rock outcrop provides a unique area for calciphilic plants. Due to the rare occurrence of such sites, the area is unique. The site could be degradated by removing rock and/or building sites for residences. 15-17

7. Hoopers Corners Bog - Towns of Machias and Yorkshire. Bog contains at least two rare plant species.

C. Chautauqua County:

1. Chautauqua Creek Gorge - Towns of Westfield and Chautauqua. Scenic gorge with unusual geologic and vegetative interest. Also, historic nest sites for Ospreys and Eagles.

2. Canadaway Creek Gorge - Towns of Arkwright and Pomfret. Unique geologic area with several waterfalls. Also, historic nest sites of Endangered Raptors.

3. Twenty Mile Gulf - Town of Ripley. Scenic, unique geology and vegetation. Historic nest sites of Endangered Raptors.

D. Erie County:

1. Strawberry Island - Town of Tonawanda. This area provides a major waterfowl feeding and resting area, as well as important game fish spawning habitat. This horseshoe-shaped island has been degraded over the years by gravel removal. Although this activity has stopped, there is potential that natural erosion could continue to degrade the island. 15-3

2. Huckleberry Swamp - Town of Holland. This unique area (15 acres±) has rare plants such as Sphagnum Moss, and Larch. The area is part of Erie County Forest #5, so it has a certain degree of protection. The main potential problem is lack of appreciation on the part of Erie County; thereby, it may be improperly managed. 15-1

3. Grand Island Shoreline - Town of Grand Island. This shallow water habitat provides excellent fish habitat and is a major wintering habitat for 10-20,000 ducks. The major species of waterfowl are the rather uncommon Canvasback, common Merganser and Scaup. The shoreline is very vulnerable to degradation by dock and bulkhead construction. 15-2

4. Times Beach - City of Buffalo. This partially filled, shallow-diked disposal site provides an extensive littoral zone. Therefore, waterfowl and shorebirds utilize the area. A total of 186 species of birds have been identified here. The fact that it is located within walking distance of downtown Buffalo gives great potential for high human use. While the area is owned by the City and leased to the Army Corps of Engineers, the area 15-7

SIGNIFICANT HABITAT MAPS

The key below is to be used for interpreting significant habitat overlays at the scale of 1:250,000.

15-10 -

☐ Significant for plants

☑ Significant for wildlife

⊡ Significant for both plants and wildlife

○ Potentially significant for plants

⊙ Potentially significant for wildlife

❂ Potentially significant for both plants and wildlife

▲ Known deer concentration areas

△ Known deer concentration areas not in-use

◬ Aerial survey yards - not field checked

✡ Other - such as unique geological formations

A potentially significant habitat is one that once was occupied, where the potential exists for reestablishing the species. It also applies to unconfirmed sightings in a given area.

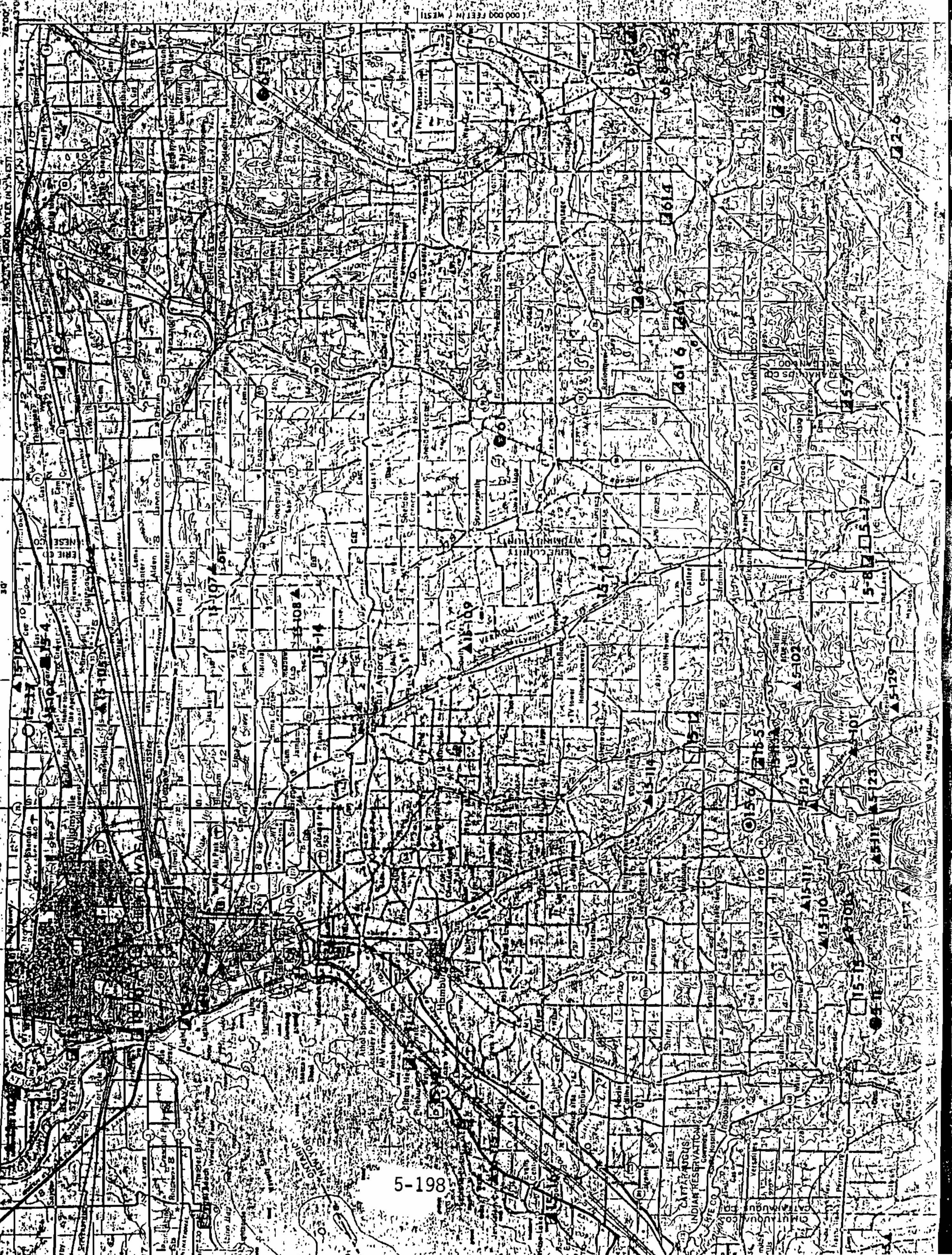
The numbers identify significant habitats. The digits preceding the hyphen are county code numbers (with counties listed aplphabetically). A county code sheet is attached. Numbers following the hyphen ranging from 1 to 99 were assigned to significant habitats as reports were received for each county. Numbers of 101 or more denote deer concentration areas.

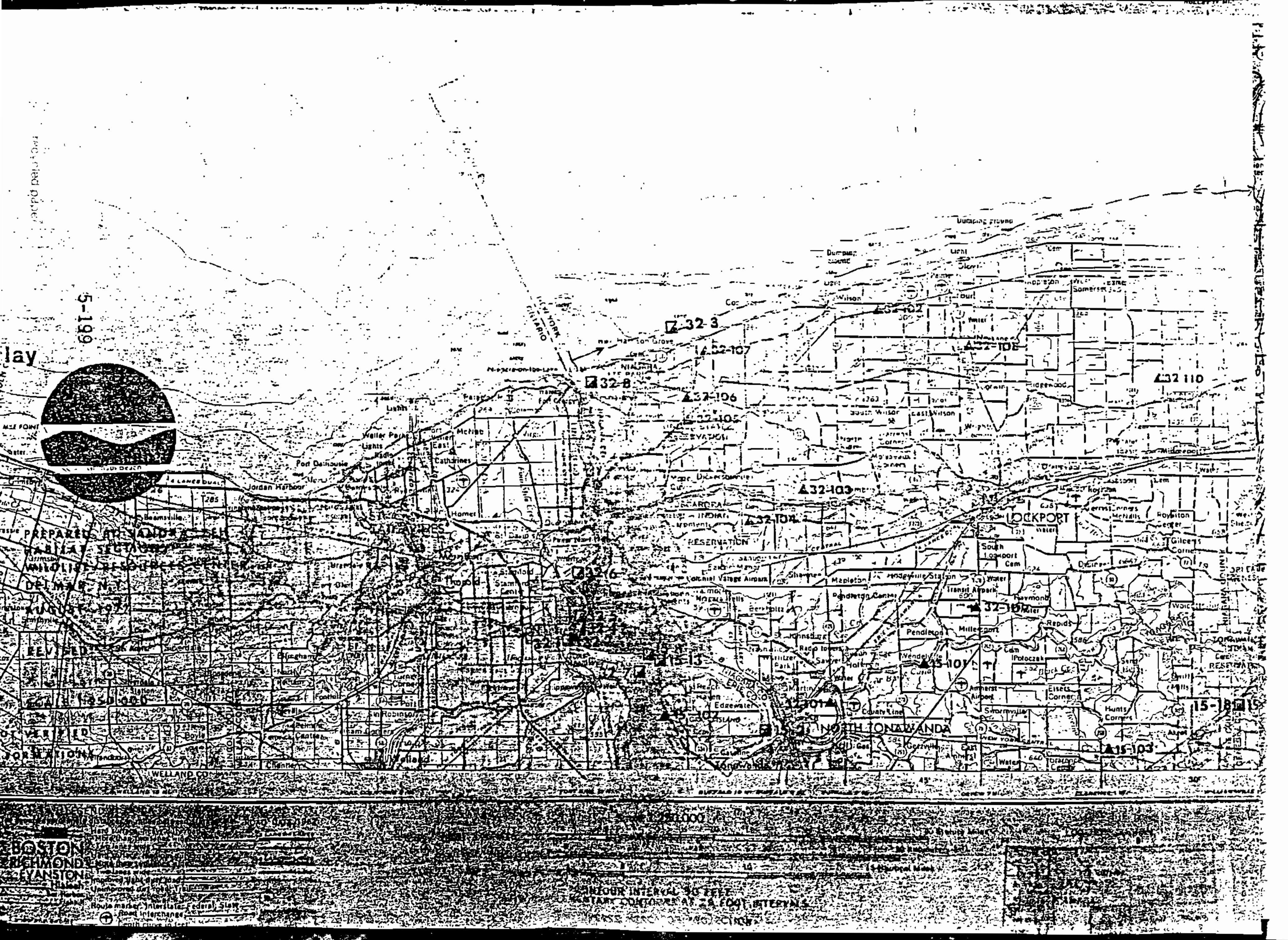
* * *

The significant habitat locations on this map represent initial reports of areas from a variety of people, but usually from those affiliated with a governmental agency (including Department of Environmental Conservation), university, local conservation organization, bird club, etc., and occasionally just knowledgeable individuals. Most locations have <u>not</u> been verified as to exact boundaries, confirmation of data reported, etc., and at this stage the map (overlay) is meant only as an early alert or "red-flag" system strictly for the purpose of identifying potential conflicts. If a potential conflict with a development project is determined from a map location, more information should be obtained from DEC, and a field check may be warranted to resolve the situation. As more accurate information is obtained, and/or locations are verified, the maps will be refined.

The map locations represent only information on hand and are by no means complete. Because an area does not appear on a map, doesn't mean it isn't significant, it probably just hasn't been reported.

/20/77 - New York State Department of Environmental Conservation
Bureau of Wildlife - Wildlife Habitat Section - Significant Habitat Program


ERIE CO
WYOMING CO
ERIE COUNTY
CATTARAUGUS INDIAN RESERVATION
Hamburg
Athol Springs
Alden
West Alden
Vermont Hill
Chaffee
Sardinia
Arcade
Holland
Colden
Boston
Eden
Shirley
Marshfield
Strykersville
Java Center
NEW YORK
ONTARIO
78°00'
79°00'
30'
45'
15-4
15-97
15-108
15-109
15-14
15-1
15-6
15-5
15-102
15-101
15-129
15-123
15-114
15-110
15-111
15-117
5-8
2-6
61-4
61-6


5-199
lay
PREPARED BY
HABITAT SECTION
WILDLIFE RESOURCES CENTER
DELMAR, N.Y.
AUGUST 1977
REVISED
SCALE 1:250,000
FIELD VERIFIED
OR INSPECTIONS
NEW YORK
ONTARIO
32-3
32-8
32-107
32-106
32-105
32-104
32-103
32-102
32-108
32 110
32-6
32-101
15-13
15-101
15-103
15-18
LOCKPORT
NORTH TONAWANDA
TUSCARORA INDIAN RESERVATION
Niagara-on-the-Lake
Port Dalhousie
Jordan Harbour
Beamsville
Thorold
Welland
Pendleton
Millersport
South Lockport
Wilson
South Wilson
East Wilson
Hunts Corners
Gasport
Royalton
BOSTON
RICHMOND
EVANSTON
CONTOUR INTERVAL 50 FEET

REFERENCE NO. 13

DRAFT

GRAPHICAL EXPOSURE MODELING SYSTEM

(GEMS)

USER'S GUIDE

VOLUME 3. GRAPHICS AND GEODATA HANDLING

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
EXPOSURE EVALUATION DIVISION
Task No. 3-2
Contract No. 68023970
Project Officer: Russell Kinerson
Task Manager: Loren Hall

Prepared by:

GENERAL SCIENCES CORPORATION
8401 Corporate Drive
Landover, Maryland 20785

Submitted: December 1, 1986

POPULATION

SITE	1 mile : 1.61 km Pop.	# ⌂'s	2 mile : 3.33 km Pop.	# ⌂'s	3 mile : 5 km Pop.	# ⌂'s
FORASO	3024	1190	0	0	2836	1737
MUENCH	0	0	1369	629	3973	1316
TERVILLINGER	25	10	1583	716	0	0
NORMAN RODGERS	220	50	3014	1133	2022	845
CAMP ARROWHEAD	228	98	1295	523	1959	979
BOEHMER PROPERTY	1174	707	640	234	977	398
MACHIAS LANDFILL	1174	707	640	234	977	398
ROUTE 242 SITE	126	50	1688	891	0	0
MICHAEL WOLFER	1371	495	1236	501	2429	982
WALMORE ROAD	0	0	2632	981	23581	8512
64 ST SOUTH	2327	766	26954	10209	43007	17674
TOWN OF LOCKPORT	2154	672	7526	2979	14761	5807
LASALLE EXPRESSWAY	11100	4229	16372	6092	10665	4016
ROBLIN STEEL	11680	4425	22023	8501	34155	12307
CARBORUNDUM	18758	8661	21039	9049	18866	6945
CARBORUNDUM GLOBAR	8790	3380	32103	12431	18061	7993
STAUFFER CHEMICAL	1273	405	5054	1839	8346	2254
FRONTIER BRONZE	2351	893	38415	15158	41041	17067
DUSSAULT FOUNDRY	16231	6856	12699	4525	7114	2367
SKW ALLOYS	5540	2157	28495	10667	24264	10503
LSB WAREHOUSE	16854	4247	22107	8548	34464	12119
REPUBLIC STEEL	16378	6180	45439	17271	43336	16953
BELL HOPKINS LANDFILL	14719	5507	49981	19153	41841	16444
HI VIEW TERRACE	11261	3575	19409	5583	37186	12641
BERN METAL	21942	11711	62578	31979	105668	45344
FMC CORP	782	318	17331	6686	44012	17829

* POPULATION IS NOT CU

ie. BOEHMER PROPERTY

0-1 mile = 1174

1-2 mile = 640

2-3 mile = 977

HAVE TO SUM FOR TOTAL

WITHIN ENTIRE RING

INCREASES OUTWARD

POPULATION

	1 mile		2 mile		3 mile	
SITE	Pop.	#⌂'s	Pop.	#⌂'s	Pop.	#⌂'s
SCHREIBER	1994	597	2919	913	3558	1333
UNKIST	1151	346	4731	1532	6046	2012
SNYDER TANK	2978	1079	13524	4755	25942	9798
EDEN SANITATION	6	0	5679	1948	3909	1350
AMES FOX	2292	854	1369	555	4763	2010
TAFT - HOPKINS LANDFILL	18596	6674	48674	18217	53208	23583
DIAMOND SHAMROCK	8308	3454	21526	7797	3668	1191
SS STEEL	10995	4320	36207	14154	28361	10375

REFERENCE NO. 14

United States
Department of
Agriculture

Soil
Conservation
Service

In Cooperation with
the Cornell University
Agricultural
Experiment Station

Soil Survey of Erie County, New York

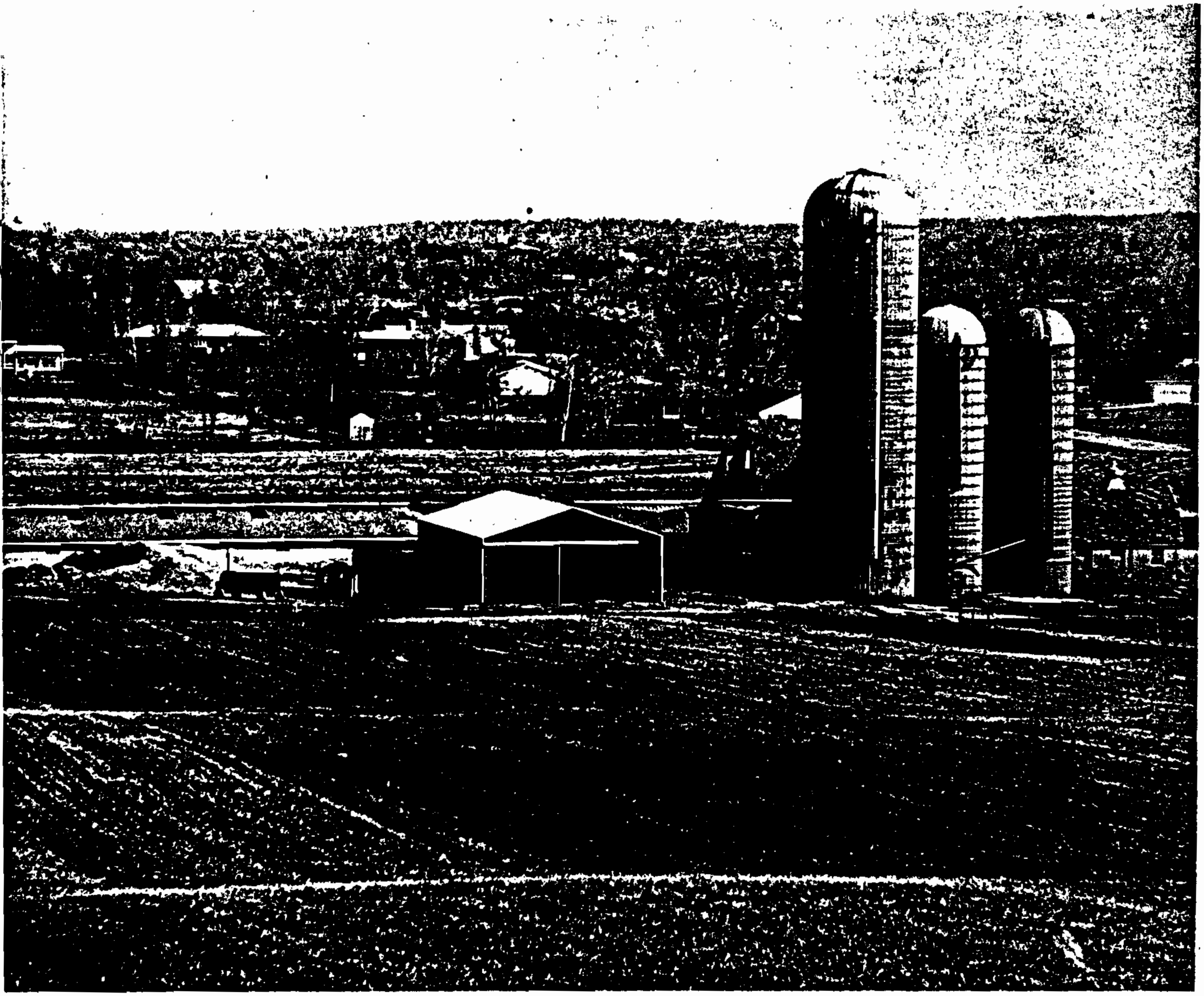


TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay <0.002mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm3	In/hr	In/in	pH				Pct
*:										
Urban land.										
Claverack--------	0-10	1-3	1.20-1.50	6.0-20	0.08-0.09	5.1-7.3	Very low-----	0.17	3	2-6
	10-35	1-3	1.20-1.50	6.0-20	0.05-0.07	5.1-7.3	Very low-----	0.17		
	35-60	30-50	1.15-1.40	<0.2	0.12-0.17	6.6-8.4	Moderate-----	0.28		
*:										
Urban land.										
Collamer---------	0-10	15-27	1.20-1.50	0.6-2.0	0.14-0.21	5.1-7.3	Low-----------	0.49	3	2-5
	10-15	15-27	1.20-1.50	0.6-2.0	0.14-0.20	5.1-7.3	Low-----------	0.43		
	15-32	18-35	1.20-1.50	0.06-0.6	0.16-0.20	5.6-7.8	Low-----------	0.43		
	32-60	4-27	1.45-1.65	0.06-0.6	0.12-0.20	6.1-8.4	Low-----------	0.64		
B*:										
Urban land.										
Colonie----------	0-7	.5-2	1.20-1.50	2.0-20	0.09-0.10	5.1-6.5	Low-----------	0.24	4	1-2
	7-60	.5-2	1.20-1.50	2.0-20	0.06-0.08	5.1-6.5	Low-----------	0.24		
	60-70	.5-2	1.45-1.65	2.0-20	0.02-0.06	5.6-7.3	Low-----------	0.24		
*:										
Urban land.										
Cosad------------	0-9	1-3	1.20-1.50	6.0-20	0.08-0.09	5.1-6.5	Very low-----	0.17	3	3-7
	9-21	1-3	1.20-1.50	6.0-20	0.05-0.07	5.1-6.5	Very low-----	0.17		
	21-24	1-3	1.20-1.50	6.0-20	0.05-0.07	5.6-7.3	Very low-----	0.17		
	24-60	30-50	1.15-1.40	<0.2	0.12-0.17	6.6-8.4	Moderate-----	0.28		
*:										
Urban land.										
Galen------------	0-8	2-8	1.33-1.68	0.6-2.0	0.09-0.17	5.1-7.3	Low-----------	0.28	3	2-4
	8-24	2-8	1.45-1.70	0.6-2.0	0.08-0..1	5.6-7.3	Low-----------	0.28		
	24-36	1-4	1.45-1.70	0.6-2.0	0.06-0.16	5.6-7.3	Low-----------	0.28		
	36-60	1-4	1.45-1.70	2.0-6.0	0.06-0.09	5.6-7.8	Low-----------	0.17		
rA*:										
Urban land.										
Lima-------------	0-9	10-27	1.10-1.40	0.6-2.0	0.12-0.20	5.6-7.8	Low-----------	0.32	3	2-6
	9-26	18-28	1.60-1.85	0.6-2.0	0.07-0.18	5.6-7.8	Low-----------	0.37		
	26-60	10-27	1.70-1.95	<0.2	0.06-0.13	7.4-8.4	Low-----------	0.28		
s*:										
Urban land.										
Niagara----------	0-11	15-25	1.20-1.50	0.6-2.0	0.17-0.22	5.1-7.3	Low-----------	0.49	3	2-6
	11-27	18-35	1.20-1.50	0.2-0.6	0.16-0.20	5.6-7.8	Low-----------	0.43		
	27-72	5-35	1.45-1.65	0.2-0.6	0.12-0.20	6.6-8.4	Low-----------	0.64		
Ut*:										
Urban land.										
Odessa-----------	0-9	20-40	1.00-1.25	0.2-0.6	0.17-0.21	5.6-7.3	Moderate-----	0.49	3	3-9
	9-22	35-60	1.20-1.40	<0.2	0.12-0.17	5.6-7.8	Moderate-----	0.28		
	22-60	35-60	1.15-1.40	<0.2	0.12-0.14	7.4-8.4	Moderate-----	0.28		
Uu*:										
Urban land.										
Schoharie--------	0-9	20-40	1.00-1.25	0.2-0.6	0.17-0.21	5.6-7.3	Moderate-----	0.49	3	3-6
	9-31	35-60	1.20-1.40	<0.2	0.12-0.17	5.6-7.8	Moderate-----	0.28		
	31-60	35-60	1.15-1.40	<0.2	0.12-0.14	7.4-8.4	Moderate-----	0.28		
Uv*:										
Urban land.										

See footnote at end of table.

crops and sod crops in the cropping system the surface from scour when flooding occurs. early level soil is well suited to special crops that e irrigation and a stone-free plow layer.

s soil is also well suited to pasture and hay. grazing can restrict plant growth and cause the loss pasture seeding. Proper stocking, rotation of ures, yearly mowing, and deferment of grazing when soil is wet are the main management concerns. cations of lime are needed for optimum growth of ure grasses.

he potential of this soil for wood crops is good. Only small acreage is wooded. There are few limitations for er production. Trees that require acid conditions do on this soil.

ooding is a serious limitation for most urban uses of s soil. Where the soil is used for septic tank sorption fields, pollution of the water supply can occur cause of flooding and because the substratum is derately to rapidly permeable. Some areas are well ed to recreational uses, such as athletic fields that uire a gravel- and stone-free, nearly level site. This d is an excellent source of topsoil.

This Tioga soil is in capability class I.

Uc—Udorthents, smoothed. These soils formed in ep manmade cuts or fills. Most of these areas are ar industrial sites, urban developments, or construction es. These soils consist of various kinds of excavated rthy material that has been stockpiled for use as fill or pdressing, soil and rock material that has been trucked om other areas and leveled, or soil deposits that are t in areas that have been excavated or deeply alped. Fill material is variable in composition, but amy, earthy material is dominant. In some places, the l is mixed with slag or cinders around abandoned ilroad yards. In other places, the earthy fill contains up 10 percent concrete or asphalt and other trashy astes.

This map unit is mainly nearly level or gently sloping. Some areas are steeper, particularly at the edge of cuts nd along the sides of mounded fill. The areas are ariable in shape, depending mostly on ownership oundaries. They range from 5 to 700 acres or more. The larger areas are in the city of Buffalo and adjacent suburbs near the larger industrial complexes.

Udorthents are too variable to have a typical profile, but in one of the more common profiles the surface layer is brown or grayish brown very gravelly loamy sand to silty clay loam 1 to 8 inches thick. The substratum is commonly light olive brown, brown, or dark yellowish brown and varies widely in texture from very gravelly loamy sand to silty clay.

Most areas are idle and support scattered weeds and grasses. A few areas have reverted to brush and tree saplings. Some areas, particularly around railroad yards, are used for urban development.

These Udorthents are mostly excessively drained to moderately well drained. Often the fill has been placed on very poorly drained to moderately well drained soils. Texture, stone content, soil reaction, and depth to bedrock vary considerably from one area to another. Bedrock, however, is usually at a depth of more than 5 feet. Depth to the seasonal high water table and permeability are variable and depend on topography, degree of compaction, soil texture, and other related factors.

These cut and fill areas are usually poorly suited to farm or recreational uses. Onsite investigation is essential to determine the feasibility of using areas for any purpose.

These Udorthents have not been assigned a capability subclass.

Ud—Urban land. This map unit is a miscellaneous area in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures. It includes parking lots, shopping and business centers, and industrial parks—in the cities of Buffalo and Lackawanna but also the business districts and adjacent shopping centers of villages in the suburban area near Buffalo. These areas generally range from 3 to 500 acres or more and are mostly nearly level to sloping.

Included in mapping are some landfills that have not been built upon or covered with asphalt. In many of these, several feet of fill has been placed over marshes and flood plains. The included areas range up to 3 acres.

It was not practical to examine and identify the soils underlying these impervious Urban land areas. Careful onsite investigation is necessary to determine the suitability and limitations of any abandoned areas for any proposed use. Some abandoned areas are suitable for asphalt-covered playgrounds or other recreation uses requiring a hard, impervious surface.

These Urban lands have not been assigned a capability subclass.

UeB—Urban land-Benson complex, 3 to 6 percent slopes. This complex is made up of gently sloping areas of Urban land and excessively drained and somewhat excessively drained Benson soils. Some areas of the Benson soils have been graded, scalped, or filled during urbanization. This complex is underlain by shallow limestone bedrock. These areas are generally about 5 to 100 acres. Slopes are long and gradual and are occasionally interrupted by ledges of rock outcrop.

A typical area of this complex is about 60 percent Urban land that is covered by concrete, asphalt, buildings, or other impervious surfaces; about 25 percent undisturbed Benson soils; and 15 percent other soils. Urban land and Benson soils occur together in such an seasonally wet, have low strength, and generally cover less than 800 square feet. Some older homes and buildings show signs of settling. Most building activity is on sites of demolished buildings.

Some of the undisturbed areas of Odessa soils are subject to heavy foot traffic and are shaded by tall buildings. Because of seasonal wetness and clayey subsoil texture, lawns and gardens are difficult to establish on these soils. The small size of most undisturbed areas limits their suitability for many uses, such as recreational areas and parks. Onsite investigation is necessary to determine the suitability and limitations of this complex for any proposed use.

This Urban land-Odessa complex has not been assigned a capability subclass.

Uu—Urban land-Schoharie complex. This complex is made up of nearly level areas of Urban land and deep, well drained to moderately well drained Schoharie soils. The Schoharie soils formed in reddish, clayey, lake-laid sediments. This complex is on relatively flat landscapes in the city of Buffalo and its metropolitan area. Areas of this complex are generally about 5 to 800 acres or slightly more and are irregular in shape. Slope ranges from 0 to 3 percent.

A typical area of this complex is about 60 percent Urban land that is mostly covered by concrete, asphalt, buildings, or other impervious surfaces; about 35 percent undisturbed Schoharie soils; and 5 percent other soils. Urban land and Schoharie soils occur together in such an intricate pattern that it was not practical to separate them in mapping.

Typically, Schoharie soils have a surface layer of dark brown silt loam about 9 inches thick. The subsoil extends to a depth of 31 inches. It is brown silty clay loam in the upper part; reddish brown silty clay in the middle part; and mottled, reddish brown silty clay in the lower part. The substratum to a depth of 60 inches is reddish brown varved silty clay. In places the surface layer is silty clay loam.

Included with this soil in mapping are small intermingled areas of the somewhat poorly drained Odessa soils and the gently sloping Schoharie soils. Also included are Udorthents, smoothed, which are areas of deep fills or excavations. Areas of included soils range up to 3 acres.

In the spring, the Schoharie soils have a perched seasonal high water table in the lower part of the subsoil. Permeability is slow or very slow, the available water capacity is moderate to high in undisturbed areas, and runoff is medium. Bedrock is at a depth of more than 5 feet. Reaction is medium acid to neutral in the surface layer. Runoff is rapid in the Urban land areas of this complex.

This Urban land-Schoharie complex is not suited to farming because of the high degree of urbanization. The few areas that are not built up include narrow plots between streets and sidewalks, small yards, courtyards, and small traffic islands and circles. These undisturbed areas are limited for building because they have a clayey subsoil and low strength and generally cover less than 800 square feet. Most building activity is on sites of demolished buildings.

Some of the undisturbed areas are subject to heavy foot traffic or are shaded by tall buildings. These areas are moderately suited to lawns, shrubs, and vegetable gardens. Because of slow or very slow permeability and small size, these areas only have limited suitability for recreational uses and for small parks. Onsite investigation is necessary to determine the suitability and limitations of this complex for any proposed use.

This Urban land-Schoharie complex has not been assigned a capability subclass.

Uv—Urban land-Swormville complex. This complex is made up of nearly level areas of Urban land and somewhat poorly drained Swormville soils. The Swormville soils formed in silty and clayey lake-laid sediments underlain by sandy deposits. This complex is on relatively flat landscapes in the city of Buffalo and its metropolitan area. Areas of this complex are generally about 5 to 100 acres and are irregular in shape. Slope ranges from 0 to 3 percent.

A typical area of this complex is about 70 percent Urban land that is mostly covered by concrete, asphalt, buildings, or other impervious surfaces; about 25 percent undisturbed Swormville soils; and 5 percent other soils. Urban land and Swormville soils occur together in such an intricate pattern that it was not practical to separate them in mapping.

Typically, these Swormville soils have a surface layer of dark brown silt loam about 8 inches thick. The subsoil extends to a depth of 26 inches. It is mottled, yellowish brown silty clay loam in the upper part; mottled, yellowish brown silt loam in the middle part; and mottled, light yellowish brown loamy fine sand in the lower part. The substratum to a depth of 60 inches is mottled, gray fine sand. In places the surface layer is loam or silty clay loam.

Included with this soil in mapping are Udorthents, smoothed, which are areas of deep fill deposits or excavations that are not paved or built upon. Some areas are gently sloping. Areas of included soils range from 1/4 acre to 3 acres.

From November through May, the Swormville soils have a seasonal high water table in the upper part of the subsoil. Permeability is moderately slow to slow in the surface layer and upper part of the subsoil and moderately rapid in the substratum in the undisturbed Swormville soils, the available water capacity is moderate, and runoff is slow. Bedrock is at a depth of more than 5 feet. The surface layer is strongly acid to neutral. Runoff is rapid from the relatively impermeable Urban land areas of this complex.

ERIE COUNTY, NEW YORK — SHEET NUMBER 29

CONTACT REPORT

AGENCY : USDA SOIL CONSERVATION SERVICE
ADDRESS : 21 S. GROVE RD., EAST AURORA, NY
TELEPHONE : (716) 652-8480
PERSON CONTACTED : JOHN WHITNEY
TO : FRED MCKOSKY
FROM : PAM GUNTHER
DATE : AUGUST 25, 1987
SUBJECT : PRIME AGRICULTURAL LANDS THAT HAVE BEEN IN PRODUCTION SINCE 1982 FOR DEC PHASE 1 INACTIVE HAZARDOUS WASTE SITES OF ERIE CO.
XC : M. SIENKIEWICZ, G. FLORENTINO, J. SUNDQUIST, P. FARRELL, FILE ND-2000

John Whitney can provide aerial photos (slides) for all hazardous waste sites in Erie Co. for the following years: 1938, 1958, 1966, 1978, 1981-1987. They cost $1.00 each with a 2 week turnover time. Payment must be received in advance.

To obtain location on prime agricultural lands that have been in production over the past 5 years we looked at enlarged 1978 aerial photos that are updated annually from farmers that maintain crop records with the Agricultural Stabilization Conservation Service (ASCS). To receive federal subsidies the farmers must be in contact with ASCS. Therefore, the ASCS has a good record of who's growing what and where. Truck farmers do not receive federal subsidies and are excluded from ASCS records. Attached is a list of the distances to each prime agricultural farmland from the inactive hazardous waste site and the soil type that classifies the land as prime. Note that ASCS has fewer soil types classified as prime ag. lands than does the New York State classification system. New York State classifies all ASCS prime ag. lands as prime but also includes more soil types. Note this difference for the Gutenkist site. All other sites will have the same ag. land for both state and ASCS. Note this distance was calculated for up to 2 miles away from the site.

Mr. Whitney has also provided me with a bibleography of ground water resources for Erie County which is attached. I have also ordered the attached USGS reports that were recently published.

		Distance	Soil Type
Buffalo - Hopkins		> 2 miles	-
E.I. Dupont		> 2 miles	-
FMC Corp.		> 2 miles	-
Whiting Development Corp.		0	Collamer silt loam, Ag. land adjacent to site
Republic Steel		> 2 miles	-
Snyder Tank Co.		> 2 miles	Varysburg gravelly loam
Village of Springville		300 ft.	Varysburg gravelly loam
James Fox site		300 ft	Manlius shaly silt loam
Gutenkist	State	1600 ft.	Farnham shaly silt loam
	ASCS	6015 ft.	Blasdell shaly silt loam
Eden Sanitation Services		4950 ft.	Niagara silt loam (note: this land is only 2 acre
George Schreiber		700 ft.	Palmyra gravelly loam
Clarence Ready Mix		1700 ft.	-
Central Auto Wrecking		> 2 miles	Hamlen silt loam
Hi View Terrace		5280 ft.	-
Tift and Hopkins		> 2 miles	-
LSB Warehouse		> 2 miles	-
Berns Metals		> 2 miles	-

REFERENCE NO. 15

The
National Register
of Historic Places

1976

William J. Murtagh *Keeper of the National Register*

Ronald M. Greenberg *Editor in Chief*
Sarah A. Marusin *Editor*
Maricca J. Lutz *Photo Editor*

U.S. Department of the Interior National Park Service Washington, D.C.

dows set in almost round recesses, decorative brickwork and bargeboards, stone quoins and trim, 1st-story window with stained glass transom. Original L-shaped structure enlarged and redecorated with Queen Anne elements, late-19th C. *Private.*

Poughkeepsie. **LOCUST GROVE (SAMUEL F. B. MORSE HOUSE)** , 370 South St., 1830. Frame, clapboarding; 2 stories, modified T shape, gabled roof, interior chimneys, bracketed cornice, projecting octagonal wings, 4-story stuccoed end tower with round arched windows, porch with latticework fascia and posts, carriage house extension with large round arched openings; substantially expanded during Morse's ownership. Italianate. Home after 1847 of Samuel F. B. Morse, inventor of the telegraph and a noted artist who had studied and traveled in England and Europe. *Private; not accessible to the public:* NHL.

Poughkeepsie. **MAIN BUILDING, VASSAR COLLEGE,** Vassar College campus, Mid-19th C., James Renwick, architect. Brick, 4 stories with 5-story pavilions, U-shaped, mansard roof punctuated by towers and central convex mansard section. One of the earliest Second Empire buildings in the U.S.; reputedly designed after 16th C. Tuileries Palace. School founded by Matthew Vassar, Poughkeepsie philanthropist who pioneered higher education for women. *Private.*

POUGHKEEPSIE. **MILL STREET-NORTH CLOVER STREET HISTORIC DISTRICT,** 19th–20th C.. Residential area containing primarily 2–3-story brick houses from post-Civil War period in styles ranging from Greek Revival to those of the Victorian period; notable are the numerous Second Empire structures and the Queen Anne Italian Center (see also Italian Center, NY). Eastern section became city's civic and cultural center under direction of the Vassar family. *Multiple public/private.*

Poughkeepsie. **POUGHKEEPSIE CITY HALL,** 228 Main St., 1831. Brick, 2 stories, rectangular, gabled roof, denticulated cornice, front open balustraded frame belfry with hipped roof, rear cupola with pyramidal roof, front center entrance with transom and side lights; brownstone trim including wide belt course between stories, lintels, and sills; 2 brick additions; altered. Greek Revival. Built as market and village hall, presumably with open 1st-floor market area; served as post office, 1865–1886. *Municipal.*

Poughkeepsie. **SECOND BAPTIST CHURCH,** 36 Vassar St., Mid-19th C.. Brick base, frame, flush siding; 1 1/2 stories over high basement, rectangular temple-form, gabled roof, interior end chimneys, entablature surrounding building; front tetrastyle Doric pedimented portico with balustrade, oculus in tympanum, and 2 entrances with shouldered architraves; side pilasters; side rectangular windows, each with cornice and shouldered architrave; altered. Greek Revival. Property originally purchased from Matthew Vassar's family; building has been used for Protestant and Jewish worship. *Private.*

Poughkeepsie. **UNION STREET HISTORIC DISTRICT,** About 8 blocks in downtown Poughkeepsie centered around Union St., 19th C.. Working class urban neighborhood containing 173 historical commercial and residential structures; features numerous 2 1/2-story brick buildings in styles from Federal to those of the Victorian period, long narrow lots, and backyards. City's oldest section; settled largely by German, Irish, Italian, and Slavic immigrants, and by Blacks. *Multiple public/private.*

Poughkeepsie. **VASSAR HOME FOR AGED MEN,** 1 Vassar St., 1880. Brick, 3 stories over high basement, rectangular, low hipped roof with deck, interior end chimney, gabled section rises above cornice line on each side, bracketed cornice with narrow arched corbel tables below, stairway leads to front entrance with transom; 1-story balustraded porch with slender columns, similar side and rear porches with entrances; granite banding connects granite architraves and sills. Italianate. Built on the site of Matthew Vassar's town residence as home for men 65 and over, as established by Matthew Vassar, Jr., and John Guy Vassar. *Public.*

Poughkeepsie. **VASSAR INSTITUTE,** 12 Vassar St., 1882, J. A. Wood, architect. Brick, 2 1/2 stories, rectangular, convex mansard and hipped roof sections, interior chimney, round arched dormers with raised ridge, bracketed cornice with decorative frieze, front center 3-story tower, entrance porch with paired columns, recessed brick paneling, segmental arched openings, granite trim, rear lower wing with round arched windows houses auditorium; tower dome removed. High Victorian Italianate with Second Empire elements. Built for Matthew Vassar Jr. and John Guy Vassar; contained natural history museum and library. *Private.*

Poughkeepsie. **VASSAR, MATTHEW, ESTATE (SPRINGSIDE),** Academy and Livingston Sts., 1850–1852, Andrew Jackson Downing, architect. Rural estate containing a 2-story cottage with board-and-batten siding, gabled roof, bay windows, and decorative bargeboards, shutter trim, and bracketing; a gatehouse in similar style; and the remains of an L-shaped barn complex. Picturesque Gothic Revival. Home of Matthew Vassar, Poughkeepsie brewer and Vassar College founder (see also Main Building, Vassar College, NY). Grounds also designed by early landscape architect Andrew Jackson Downing. *Private; not accessible to the public:* NHL; HABS.

Red Hook. **MAIZEFIELD,** 75 W. Market St., 18th–19th C.. Brick, 3 stories, rectangular main block with later additions, flat roof, 4 interior end chimneys, 1-story front entrance portico with Palladian window above, heavy cornice with block modillions. Federal. Only extant dependency–2-story, hipped roof board-and-batten cottage designed by Alexander Jackson Davis. Residence of Gen. David Van Ness, prominent military and political leader in late-18th and early-19th C. *Private.*

Rhinebeck. **DELAMATER, HENRY, HOUS** 44 Montgomery St., 1844, Alexander Jacks Davis, architect. Frame, board-and-batten s ing; modified rectangle; hipped roof with r gable, each end with finial; interior chi e carved scalloped bargeboards; 3 front Tu arched openings, 1-story 3-bay-wide porch w carved flat posts and brackets forming arches, balustraded deck; center 2nd sto a attic, each with rectangular window under bli pointed arch with tracery; each side with b window; interior designed by architect ha monize with exterior design; rear veran e closed and extended; board-and-batten c ia house. Excellent example of Gothic Revi cottage design advocated by Alexander Jacks Davis and Andrew Jackson Downing. *Pri e.*

Sylvan Lake vicinity. **SYLVAN LAKE ROC SHELTER,** 5000 B.C.–700 A.D.. Undisturb stratified rock shelter; served as winter an for Archaic hunters beginning c. 5000 B. E cavations between 1964 and 1966 reveal n merous remains of the Sylvan Lake Culture (2500 B.C.), elements of the Susquehan Tradition (c. 1500–1000 B.C.), and Midc a Late Woodland deposits. *Private.*

ERIE COUNTY

Buffalo. **ALBRIGHT-KNOX ART GAL R** 1285 Elmwood Ave., in Delaware Par 1900–1905, Edward B. Green, architect. Pa tially marble faced, 2 stories, modified H ap gabled roof sections; E pedimented for e trance portico flanked by colonnaded in ending in pavilions, each with caryatids by A gustus Saint Gaudens; W semielliptical on porch flanked by colonnaded sections; i ri sculpture courtyard. Neo-Classical R va Built to permanently house the collections the Buffalo Fine Arts Academy. *Private.*

Buffalo. **BUFFALO STATE HOSPITAL** 40 Forest Ave., 1871–1890, Henry Hobso Richardson, architect. Random rough ashla sandstone, brick; 3 1/2 stories above high base ment, main block with 5 W wards an 2 wards, gabled and hipped roof sections, le and flared hipped dormers, front entranc recessed under 3-bay arcade flanked by pro jecting pavilion; 2 main-block towers wit steeply hipped roofs, shed dormers, and rne turrets; machicolations, rectangular and seg mental arched windows, wings with projectin cross-gable sections; 3 wards removed, 0's 4 service buildings; site plan by Frederic a Olmsted. Richardsonian Romanesque elements Early development example of Henry Hobso Richardson's work. *State:* HABS.

Buffalo. **DELAWARE AVENUE HIST RI DISTRICT,** W side of Delaware Ave. between North and Bryant Sts., 19th–20th C.. Remaining section of elite residential area of predominantly turn-of-the-century grand dw ngs Era's Neo-Classical and Georgian Reviva les represented in designs by noted architects such as McKim, Mead, and White. Reflects overwhelmingly successful economic development stimulated by Pan-American Exposition, 1901. Prominent residents included Anson C. Goodyear and Millard Fillmore. *Multiple public/private.*

Buffalo. **GUARANTY BUILDING (PRUDENTIAL BUILDING)** , Church and Pearl Sts., 1894–1895, Louis Sullivan, architect. Steel frame, terra cotta sheathing; 12 1/2 stories, U-shaped, flat roof; front and side entrances, each with large lunette at 2nd-story level; first 2 stories topped by narrow cornice form base for upper levels, upper-story fenestration organized in vertical bands under round arches, oculi in coved section below cornice, decorative terra cotta ornament in low relief covers entire building; interior lobby with cast iron and leaded glass skylight, mosaic frieze and cast iron stairway; 1st-story store windows altered 1970 to form flat plane behind piers. Sullivanesque. A milestone in modern skyscraper development by Louis Sullivan, building successfully integrates structural clarity with ornamentation. *Private:* NHL; HABS.

Buffalo. **MACEDONIA BAPTIST CHURCH,** 511 Michigan Ave., 1845. Brick, 1 story, rectangular, gabled roof, enclosed entrance vestibule flanked by round arched windows in recessed rectangular panels, rounded and inscribed stone plaque above entrance; modified meetinghouse plan with apse; 20th C. alterations. Social and religious center for Black community for 125 years. Parish of Dr. J. Edward Nash, a founder of the Buffalo Urban League and the local branch of the NAACP. *Private.*

Buffalo. **PIERCE ARROW FACTORY COMPLEX,** Elmwood and Great Arrow Aves., 1906, Albert Kahn, architect. Factory complex containing 14 major buildings mainly of reinforced concrete steel with brick and glass curtain walls; saw-tooth roof sections, large spans up to 60'; some Arts and Crafts decorative elements on Administration Building front. Represents synthesis of trends foreshadowing developments in factory design; owned and operated by Pierce Arrow Co. until 1938; buildings later converted for diversified commercial use. *Multiple private.*

Buffalo. **ST. PAUL'S EPISCOPAL CATHEDRAL,** 125 Pearl St., 1850–1851, Richard Upjohn, architect. Sandstone ashlar, 1 story, irregular shape, gabled roof sections; cornice sections, some with modillions, some with trefoil arcading; front 3-stage tower with tall spire, entrance porch, transept chapel with entrance and adjacent 3-stage bell tower with spire, nave lancet windows with label molds, buttresses; towers completed 1870's; 1888 fire destroyed interior; new interiors designed by English architect, Robert Gibson; clerestory added. Fine example of Gothic Revival building adapted to unusual triangular site. *Private:* HABS.

Buffalo. **THEODORE ROOSEVELT INAUGURAL NATIONAL HISTORIC SITE,** Delaware Ave., 1838. Site includes Ansley Wilcox house: brick, 2 1/2 stories, modified rectangle; gabled roof sections, some with end returns; interior end chimney; front full-width 2-story pedimented portico, center entrance with fanlight, Palladian window in tympanum; 1863 remodeling, portico moved; 1890's additions; 20th C. interior alterations; restored. Greek Revival. Built for officers' quarters as part of Poinsett Barracks; site of Theodore Roosevelt's inauguration Sept. 14, 1901 after William McKinley's assassination. Museum. *Federal/NPS.*

Buffalo. **U.S. POST OFFICE,** 121 Ellicott St., 1897–1901, James Knox Taylor, architect. Rock-faced granited base, granite ashlar; 4 1/2 stories over high basement, modified rectangle, gabled and pyramidal roof sections, numerous gabled dormers, modillion cornice; front center tall tower with corner turrets, gargoyles, and spire with crockets and finial; front 3 entrances recessed under 3-bay entrance porch with elaborate Gothic detailing, each side with 3-bay entry and 1–3 entrances; rear cast iron porte-cochere, string courses, windows grouped under pointed arches; molded and carved detail including foliate capitals and buffalo heads; 4-story-high central courtyard above 1st floor with steel and glass roof surrounded by galleries with rectangular, segmental, and pointed arched openings; 1936 remodeling included roofing of 1st floor of courtyard and skylight. Later Gothic Revival. Excellent example of late-19th C. dual-nature architecture combining revivalist style with technological innovations; designed by James Knox Taylor, Supervising Architect of the U.S. Treasury. *Federal/GSA:* HABS.

East Aurora. **FILLMORE, MILLARD, HOUSE,** 24 Shearer Ave., 1826. Frame, clapboarding; 1 1/2 stories, modified L shape, gabled roof sections, exterior end chimneys, 1-story full-width front tetrastyle Doric porch, front center entrance; moved, 1915 and 1930; altered, c. 1930. Greek Revival elements. Built by Millard Fillmore, lawyer, state and U.S. representative, and U.S. Vice President who became President upon the death of Zachary Taylor in 1850. *Private; not accessible to the public:* NHL.

East Aurora. **ROYCROFT CAMPUS,** Main and W. Grove Sts., Late-19th C.–1938. Complex containing approximately 9 structures, the majority of which feature crenelated towers, half-timbered gables, and stone or shingled exteriors. Built as part of Arts and Crafts artistic community established in late-19th C. by writer Elbert Hubbard after visiting a similar English community organized by Arts and Crafts movement leader William Morris; utilized Medieval organization and building concepts as inspired by the writings of John Ruskin; in operation until 1938. *Multiple public/private.*

Irving. **THOMAS INDIAN SCHOOL,** NY 438 on Cattaraugus Reservation, 1900, Barney and Chapman, architects. Educational complex consisting of 9 principal brick Georgian Revival buildings and 25 dependencies; notable is the elaborate Administration Building with its ornate stone trim and decorative use of Indian related motifs and subject matter. Built by NY on reservation as a self-sufficient educational facility; school began, mid-18th C., as the Thomas Asylum of Orphan and Destitute Indian Children and developed into a successful, accredited educational institution; in operation until 1958 when closed as result of centralization of the public school system. *Tribal.*

ESSEX COUNTY

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County*

Crown Point. **FORT ST. FREDERIC,** Jct. of NY 8 and 9N, 1731. Limestone ruins of fort established by French to guard Lake Champlain route into Canada. Abandoned in 1759 after Lord Jeffrey Amherst captured nearby Fort Carillon, which the British renamed Fort Ticonderoga (see also Fort Ticonderoga, NY), during the French and Indian War. *State:* NHL.

Crown Point vicinity. **FORT CROWN POINT,** Crown Point Reservation, SW of Lake Champlain Bridge and NY 8, 1760. Limestone walls of 5-sided fort containing 6.5-acre parade ground and 2 of 3 original barracks, and surrounded by dry moat. Constructed by British as Fort Crown Point or Amherst after Lord Jeffrey Amherst who drove French from area during the French and Indian War. Damaged in 1773 when powder magazine exploded; reconstruction interrupted by Revolution was never completed. Occupied alternately by Americans and British during Revolution. *State:* NHL.

Essex vicinity. **CHURCH OF THE NAZARENE,** W of Essex on NY 22, 1855. Frame, board-and-batten siding; gabled roof with double pitch and end returns, front shoulder arched entrance, lancet windows, trefoil in gable; interior wooden arches spring from unengaged wooden posts to form primary roof support. Gothic Revival. Simple design apparently based upon small mission chapel prototype in Richard Upjohn's *Rural Architecture,* published 1852. *Private.*

Essex vicinity. **OCTAGONAL SCHOOLHOUSE,** On Rte. 22 in Bouquet, 1826, Benjamin Gilbert, builder. Rubble sandstone, 1 story, modified octagon, polygonal roof, octagonal open belfry with polygonal roof, front entrance with shed porch, rear entrance leads to frame vestibule addition; porch added. Octagon Mode. Probably state's oldest schoolhouse; served as school until 1952. *Municipal.*

Ironville. **IRONVILLE HISTORIC DISTRICT,** 19th C.. Rural residential area includes focal Penfield Homestead (1828), other houses, church, boardinghouse, Grange Hall, inn, schoolhouse, and ruinous remains of ironworks. Est. 1807; developed major iron industry; pioneered in industrial use of electricity. Museum. *Multiple private.*

REFERENCE NO. 16

CONTACT REPORT

TO: Fred McKosky

CONTACT: Robert Wruck- Pump Operator, Van Dewater Station

AGENCY: Erie County Water Authority
Ellicott Square Building

TELEPHONE: 716-873-8884

DATE: September 23, 1987

RE: Niagara River Water Intake
NYSDEC Phase 1, FMC, DuPont Sites

CONTACT PERSON: A. Mark Sienkiewicz

Mr. Robert Wruck was contacted concerning the location of the Water intake for the Van DeWater station and the population served.

The water intake is located near Motor Island in the East Branch of the Niagara River. The water is pumped ~~into the Ball Tanks located at the U.B. Campus. The water is then pumped into the~~ regular-distribution ~~lines.~~ TO THE VAN DE WATER WATER TREATMENT PLANT, AFTER TREATMENT TO THE BALL PUMPING STATION FOR DISTRIBUTION.

~~He is not sure how many people are served by the system.~~
APPROXIMATELY 150,000 PEOPLE ARE SERVED BY THIS FACILITY.

Signature

4/4/89
Date

djr

RIE COUNTY WATER AUTHORITY
3030 UNION ROAD CHEEKTOWAGA, N.Y. 14227

OBERT A. NIEDERPRUEM JR.
RODUCTION ENGINEER 684-1510

REFERENCE NO. 17

DEC
PUBLICATION

"COMMUNITY RIGHT-TO-KNOW"

VOLUME III

PAST HAZARDOUS WASTE DISPOSAL PRACTICES

January 1952 - December 1981

Appendices I - P

APRIL 1, 1985

New York State/Department of Environmental Conservation

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                                        R T K  -   P R O G R A M
                                 REPORTED  HAZARDOUS  WASTE  DATA  LISTED  BY
                                    REGION  -  SITE CODE  -  WASTE TYPE                              PAGE - 192

*************************************************************************************************************
SITE DESCRIPTION: NATIONAL ANILINE        ** BUFFALO COLOR **                          SITE CODE: 9-15-012
*************************************************************************************************************
                WASTE DESCRIPTION                          QUANTITY  U    L S D          GENERATOR NAME                   ID
               -----------------                          --------- -    - - -   ----------------------------------------
 ANILINE                                                :    564.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 BENZYL ALCOHOL                                         :    356.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 CHLOROBENZENE                                          :    827.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 CRESYLIC ACID                                          :    237.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 ETHANOL                                                :  6,060.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 ISOPROPYL ALCOHOL                                      :  2,580.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 METHANOL                                               :    842.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 N-BUTANOL                                              :  2,270.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 NAPHTHALENE                                            :  4,110.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 NITROBENZENE                                           :  2,320.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 PHENOL                                                 :    112.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE:  ANHYDRIDE TARS                               :    400.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE:  CARB YELLOW G TAR                            :  6,040.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE:  DEA STILL BOTTOMS                            :    291.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE:  DMA STILL BOTTOMS                            :     90.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE:  TETRAPROPYLENE                               :  3,920.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 RESIDUE: GENERAL                                       : 19,600.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 TOLUENE                                                :  7,130.00 T  : - - X : BUFFALO COLOR CORP                G0915248
 1,2 DICHLOROBENZENE                                    :  1,300.00 T  : - - X : BUFFALO COLOR CORP                G0915248

*************************************************************************************************************
SITE DESCRIPTION: CHEMTROL,LAKE AVE,HAMBURG,NY                                         SITE CODE: 9-15-015
*************************************************************************************************************
                WASTE DESCRIPTION                          QUANTITY  U    L S D          GENERATOR NAME                   ID
               -----------------                          --------- -    - - -   ----------------------------------------
 WASTE PCB'S                                            :      0.06 T  : X - X : BELL AEROSPACE COMPANY            G0914885

*************************************************************************************************************
SITE DESCRIPTION: DONNER-HANNA COKE JOINT VENTURE COKE STORAGE AREA                    SITE CODE: 9-15-017
*************************************************************************************************************
                WASTE DESCRIPTION                          QUANTITY  U    L S D          GENERATOR NAME                   ID
               -----------------                          --------- -    - - -   ----------------------------------------
 AMMONIA STILL LIME SLUDGE FROM COKING OPERATION        :  4,050.00 T  : - X - : DONNER-HANNA COKE CORP.           G0914894
 COAL TAR DECANTER SLUDGE                               :              : - X - : DONNER-HANNA COKE CORP.           G0914894

*************************************************************************************************************
SITE DESCRIPTION: DU PONT PLANT, SHERIDAN DRIVE, TONAWANDA, NY  14150                  SITE CODE: 9-15-019
*************************************************************************************************************
                WASTE DESCRIPTION                          QUANTITY  U    L S D          GENERATOR NAME                   ID
               -----------------                          --------- -    - - -   ----------------------------------------
 METHYL METHACRYLATE, METHYLENE CHLORIDE, INERT FILLER  :  1,500.00 T  : X - X : E.I.DUPONT DE NEMOURS & CO.(YERKE  G0914980
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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915019

II. SITE NAME AND LOCATION

01 Site Name (Legal, common, or descriptive name of site) E.I. DuPont Company	02 Street, Route No., or Specific Location Identifier Sheridan Drive, Station B

03 City Tonawanda	04 State NY	05 Zip Code 14207	06 County Erie	07 County Code 029	08 Cong. Dist. 38

09 Coordinates Latitude 42 58 14.	Longitude 78 54 24.	10 Type of Ownership (Check one) [X] A. Private [ ] B. Federal ______ [ ] C. State [ ] D. County [ ] E. Municipal [ ] F. Other ______ [ ] G. Unknown

III. INSPECTION INFORMATION

01 Date of Inspection 9 / 24 / 87 Month Day Year	02 Site Status [ ] Active [X] Inactive	03 Years of Operation 1921 1978 Beginning Year Ending Year [ ] Unknown

04 Agency Performing Inspection (Check all that apply)

[ ] A. EPA [ ] B. EPA Contractor ______ (Name of Firm) [ ] C. Municipal [ ] D. Municipal Contractor ______ (Name of Firm)

[ ] E. State [X] F. State Contractor E & E (Name of Firm) [ ] G. Other ______ (Specify)

05 Chief Inspector	06 Title	07 Organization	08 Telephone No.
Gene Florentino	Geologist	E & E	(716) 684-8060
09 Other Inspectors	10 Title	11 Organization	12 Telephone No.
A. Mark Sienkiewicz	Env. Specialist	E & E	(716) 684-8060
			( )
			( )
			( )
			( )

13 Site Representatives Interviewed	14 Title	15 Address	16 Telephone No.
Dr. Leonard Amborski	CIH	Sheridan Dr., Tonawanda	(716) 876-4420
Craig Walker		Sheridan Dr., Tonawanda	(716) 876-4420
			( )
			( )
			( )

17 Access Gained By (Check one) [X] Permission [ ] Warrant	18 Time of Inspection 1300	19 Weather Conditions Partly cloudy, 65°F, east wind

IV. INFORMATION AVAILABLE FROM

01 Contact Walter E. Demick	02 Of (Agency/Organization) NYSDEC	03 Telephone No. (518) 457-9538

04 Person Responsible for Site Inspection Form Michael Hanchak	05 Agency	06 Organization E & E	07 Telephone No. (716) 684-8060	08 Date 9 / 25 / 87 Month Day Year

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 State	02 Site Number
NY	915019

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States
(Check all that apply)

[X] A. Solid
[ ] B. Powder, Fines
[X] C. Sludge
[ ] D. Other ____________ (Specify)
[ ] E. Slurry
[X] F. Liquid
[ ] G. Gas

02 Waste Quantity at Site
(Measure of waste quantities must be independent)

Tons 90,000
Cubic Yards ______
No. of Drums ______

03 Waste Characteristics (Check all that apply)

[X] A. Toxic
[ ] B. Corrosive
[ ] C. Radioactive
[ ] D. Persistent
[ ] E. Soluble
[ ] F. Infectious
[X] G. Flammable
[ ] H. Ignitable
[X] I. Highly volatil
[ ] 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	9,200	Tons	
OLW	Oily waste			
[✓ SOL]	Solvents	0.5	Tons	
PSD	Pesticides			
[✓ OCC]	Other organic chemicals	80,000	Tons	Mixed product and chemicals
IOC	Inorganic chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy Metals			

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

01 Category	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration	06 Measure of Concentratio
OCC	Tedlar, Corian, Vexar	Unknown	Landfill	Unknown	Unknown
SLU	Polyvinyl alcohol film	Unknown	Landfill	Unknown	Unknown
SLU	Paint Sludges	Unknown	Landfill	Unknown	Unknown
SOL	Methylene Chloride	75-09-2	Landfill	Unknown	Unknown
SOL	Laboratory Chemicals	Unknown	Landfill	Unknown	Unknown
OCC	Rayon	Unknown	Landfill	Unknown	Unknown
OCC	Cellulosic viscose	Unknown	Landfill	Unknown	Unknown

V. FEEDSTOCKS (See Appendix for CAS Numbers)

Category	01 Feedstock Name	02 CAS Number	Category	01 Feedstock Name	02 CAS Number
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

NUS, 1984, Site Inspection Report.
E & E, Inc., 1987, Site Inspection

Sax, 1979, Dangerous Properties of Industrial Materials

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 State	02 Site Number
NY	915019

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. Groundwater Contamination 02 [X] Observed (Date 8/82 7/84) [ ] Potential [X] Alleged
03 Population Potentially Affected 0 04 Narrative Description:

Concentrations of soluble lead, mercury, and barium; and sulfate and chlorides were found to exceed USEPA drinking water standards. It is unknown if this is attributable to the DuPont landfill.

01 [X] B. Surface Water Contamination 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected Unknown 04 Narrative Description:

Potential exists due to toxic nature of material deposited close to the Niagara River.

01 [ ] C. Contamination of Air 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ 04 Narrative Description:

None observed

01 [ ] D. Fire/Explosive Conditions 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ 04 Narrative Description:

Low potential, wastes are buried beneath foundry sand.

01 [ ] E. Direct Contact 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ 04 Narrative Description:

Low potential

01 [X] F. Contamination of Soil 02 [X] Observed (Date 7/10/84) [ ] Potential [ ] Alleged
03 Area Potentially Affected 6-8 (Acres) 04 Narrative Description:

Soil samples showed arsenic present in an amount greater than what would naturally occur in soil. Organic compounds detected included several polycyclic aromatic hydrocarbons.

01 [X] G. Drinking Water Contamination 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected 110,000 04 Narrative Description:

Potential migration of contaminants to the Niagara River, which is a drinking water source.

01 [ ] H. Worker Exposure/Injury 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Workers Potentially Affected ______ 04 Narrative Description:

Low potential, wastes are buried

01 [X] I. Population Exposure/Injury 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected Unknown 04 Narrative Description:

Potential migration to the Niagara River which is used for drinking and recreation

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 State
NY

02 Site Number
915019

II. HAZARDOUS CONDITIONS AND INCIDENTS (Cont.)

01 [ ] J. Damage to Flora 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
04 Narrative Description:

None observed

01 [X] K. Damage to Fauna 02 [ ] Observed (Date ____________) [X] Potential [ ] Alleged
04 Narrative Description:

Potential if contaminants enter surface water

01 [X] L. Contamination of Food Chain 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
04 Narrative Description:

Potential exists if contaminants enter surface water

01 [ ] M. Unstable Containment of Wastes (Spills/Runoff/Standing liquids, Leaking drums) 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
03 Population Potentially Affected ____________ 04 Narrative Description:

None observed

01 [ ] N. Damage to Offsite Property 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
04 Narrative Description:

None observed

01 [ ] O. Contamination of Sewers, Storm Drains, WWTPs 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
04 Narrative Description:

None observed

01 [ ] P. Illegal/Unauthorized Dumping 02 [ ] Observed (Date ____________) [ ] Potential [ ] Alleged
04 Narrative Description:

None observed; site secured with guarded gate

05 Description of Any Other Known, Potential, or Alleged Hazards

None

III. TOTAL POPULATION POTENTIALLY AFFECTED ____________

IV. COMMENTS

Types of wastes and quantities are known. Onsite contamination of soil and groundwater is documented but not necessarily attributable to the landfill. Proper closure and offsite migration needs further investigation.

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

E & E, Inc. 9/24/87, Site Inspection
NUS Corp. 5/5/83, Site Inspection Report for USEPA
ECDEP Report, 2/82
NYSDEC Report, 8/87

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
NY	915019

II. PERMIT INFORMATION

01 Type of Permit Issued (Check all that apply)	02 Permit Number	03 Date Issued	04 Expiration Date	05 Comments
[ ] A. NPDES				
[ ] B. UIC				
[ ] C. AIR				
[ ] D. RCRA				
[ ] E. RCRA Interim Status				
[ ] F. SPCC Plan				
[X] G. State (Specify)	0001601	8/1/85	8/1/90	SPDES Permit
[X] H. Local (Specify)				Tonawanda Sewer
[ ] I. Other (Specify)				
[ ] J. None				

III. SITE DESCRIPTION

01 Storage Disposal (Check all that apply)	02 Amount	03 Unit of Measure	04 Treatment (Check all that apply)
[ ] A. Surface Impoundment			[ ] A. Incineration
[X] B. Piles	1,000	Cu. Yds.	[ ] B. Underground Injection
[X] C. Drums, Above Ground	50	Drums	[ ] C. Chemical/Physical
[ ] D. Tank, Above Ground			[ ] D. Biological
[ ] E. Tank, Below Ground			[ ] E. Waste Oil Processing
[X] F. Landfill	90,000	Tons	[ ] F. Solvent Recovery
[ ] G. Landfarm			[ ] G. Other Recycling Recovery
[ ] H. Open Dump			[ ] H. Other ______ (Specify)
[ ] I. Other ______ (Specify)			

05 Other

[X] A. Buildings On Site

06 Area of Site

30-40 Acres

07 Comments

Piles of demolition debris on landfill, drums located at plant

IV. CONTAINMENT

01 Containment of Wastes (Check one)

[ ] A. Adequate, Secure [X] B. Moderate [ ] C. Inadequate, Poor [ ] D. Insecure, Unsound, Dangerous

02 Description of Drums, Diking, Liners, Barriers, etc.

Natural clay with very low permeability. Foundry sand placed as fill also

V. ACCESSIBILITY

01 Waste Easily Accessible: [ ] Yes [X] No

02 Comments:

Site is secure with fences and monitored. Wastes are buried

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

E & E, 1987, Site Inspection
Amborski, Leonard, 1987, Personal Communication
Empire Soils, 1980, Permeability Report

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 State NY

02 Site Number 915019

II. DRINKING WATER SUPPLY

01 Type of Drinking Supply (Check as applicable)

	Surface	Well
Community	A. [X]	B. [ ]
Non-community	D. [ ]	D. [ ]

02 Status

Endangered	Affected	Monitored
A. [ ]	B. [ ]	C. [X]
D. [ ]	E. [ ]	F. [ ]

03 Distance to Site

A 1.2 (mi

B (mi

III. GROUNDWATER

01 Groundwater Use in Vicinity (Check one)

[ ] A. Only Source for Drinking

[ ] B. Drinking (Other sources available) Commercial, Industrial, Irrigation (No other water sources available)

[ ] C. Commercial, Industrial, Irrigation (Limited other sources available)

[X] D. Not Used, Unuseable

02 Population Served by Groundwater None

03 Distance to Nearest Drinking Water well >2 (mi

04 Depth to Groundwater 6.5 - 40 (ft)

05 Direction of Groundwater Flow West

06 Depth to Aquifer of Concern 3.5 (ft)

07 Potential Yield of Aquifer Unknown (gpd)

08 Sole Source Aquifer [ ] Yes [X]

09 Description of Wells (Including usage, depth, and location relative to population and buildings)

Seven sets of monitoring wells surrounding site. Each set has a deep well approximately 90 ft. and a shallow well approximately 2-6 ft. There are also two intermediate wells approximately 20 ft.

10 Recharge Area

[X] Yes

[ ] No

Comments: Overburden aquifer recharged by precipitation

11 Discharge Area

[ ] Yes

[X] No

Comments:

IV. SURFACE WATER

01 Surface Water (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
Niagara River - Tonawanda Channel	[ ]	0.6 (mi
	[ ]	(mi)
	[ ]	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 Total Population Within

One (1) Mile of Site	Two (2) Miles of Site	Three (3) Miles of Site
A. 9,895 No. of Persons	B. 46,504 No. of Persons	C. 111,344 No. of Persons

02 Distance to Nearest Population 0.4 (mi)

03 Number of Buildings Within Two (2) Miles of Site 18,586

04 Distance to Nearest Off-Site Building 0.05 (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 site is located in a heavily industrialized area. Within 1 mile of the site is a densely populated residential development.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 State: NY

02 Site Number: 915019

VI. ENVIRONMENTAL INFORMATION

01 Permeability of Unsaturated Zone (Check one)

[X] A. 10^{-6} - 10^{-8} cm/sec [ ] B. 10^{-4} - 10^{-6} cm/sec [ ] C. 10^{-4} - 10^{-3} cm/sec [ ] D. Greater Than 10^{-3} cm/sec

02 Permeability of Bedrock (Check one)

[ ] A. Impermeable (Less than 10^{-6} cm/sec) [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: 40-90 (ft)

04 Depth of Contaminated Soil Zone: Unknown (ft)

05 Soil pH: Unknown

06 Net Precipitation: 9 (in)

07 One Year 24-Hour Rainfall: 2.1 (in)

08 Slope

Site Slope: 0-3 %

Direction of Site Slope: Southwest

Terrain Average Slope: 0-3 %

09 Flood Potential

Site is in 500 Year Floodplain

10

[ ] Site is on Barrier Island, Coastal High Hazard Area, Riverine Floodway

11 Distance to Wetlands (5 acre minimum)

ESTUARINE A. >2 (mi)

OTHER B. 0.6 (mi)

12 Distance to Critical Habitat (of Endangered Species)

>2 (mi)

Endangered Species:

13 Land Use in Vicinity

Distance to:

COMMERCIAL/INDUSTRIAL A. 0 (mi)

RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES B. 0.4 (mi)

AGRICULTURAL LANDS

PRIME AG LAND C. >2 (mi)

AG LAND D. >2 (mi)

14 Description of Site in Relation to Surrounding Topography

The site is located on a relatively flat-lying area, 0-3% slope, 0.6 mile from the Niagara River. It is surrounded by many industrial facilities.

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

E & E 9/24/87, Site Inspection
NUS Corp. 5/5/83, Site Inspection for USEPA
USDA SCS, 1986, Soil Survey of Erie County, NY
NYSDEC, 1987, Wetland and Critical Habitat Maps
FEMA, 1982, Flood Insurance Rate Maps

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 State	02 Site Number
NY	915019

II. SAMPLES TAKEN None

Sample Type	01 Number of Samples Taken	02 Samples Sent to	03 Estimated Date Results Available
Groundwater			
Surface Water			
Waste			
Air			
Runoff			
Spill			
Soil			
Vegetation			
Other			

III. FIELD MEASUREMENTS TAKEN

01 Type	02 Comments
HNu	No organic vapors detected above background

IV. PHOTOGRAPHS AND MAPS

01 Type [X] Ground [ ] Aerial

02 In Custody of E & E, Inc., Buffalo, New York
(Name of organization or individual)

03 Maps
[X] Yes
[ ] No

04 Location of Maps
Ecology & Environment, Inc., site inspection logbook of Erie County, New York

V. OTHER FIELD DATA COLLECTED (Provide narrative description of sampling activities)

None

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

E & E, Inc., September 24, 1987 site inspection

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915019

II. CURRENT OWNER(S) / PARENT COMPANY (If applicable)

01 Name E.I. DuPont DeNemours	02 D+B Number		08 Name E.I. DuPont DeNemours	09 D+B Number	
03 Street Address (P.O. Box, RFD #, etc.) Station B, Sheridan Drive	04 SIC Code		10 Street Address (P.O. Box, RFD #, etc.) 1007 Market Street	11 SIC Code	
05 City Tonawanda	06 State NY	07 Zip Code 14207	12 City Wilmington	13 State DE	14 Zip Code 19898
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	
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)

NYSDEC, 1986, Inactive Hazardous Waste Disposal Sites In New York
E & E, Inc., 1987, Site Inspection

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 State
NY

02 Site Number
915019

II. CURRENT OPERATOR (Provide if different from owner)

01 Name
E.I. DuPont DeNemours

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)
Station B, Sheridan Drive

04 SIC Code

05 City
Tonawanda

06 State
NY

07 Zip Code
14207

08 Years of Operation
Est. 70-100 years

09 Name of Owner
Robert Hughes (Manager)

OPERATOR'S PARENT COMPANY (If applicable)

10 Name

11 D+B Number

12 Street Address (P.O. Box, RFD #, etc.)

13 SIC Code

14 City

15 State

16 Zip Code

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

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

08 Years of Operation

09 Name of Owner During This Period

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

08 Years of Operation

09 Name of Owner During This Period

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

08 Years of Operation

09 Name of Owner During This Period

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 Name

11 D+B Number

12 Street Address (P.O. Box, RFD #, etc.)

13 SIC Code

14 City

15 State

16 Zip Code

10 Name

11 D+B Number

12 Street Address (P.O. Box, RFD #, etc.)

13 SIC Code

14 City

15 State

16 Zip Code

10 Name

11 D+B Number

12 Street Address (P.O. Box, RFD #, etc.)

13 SIC Code

14 City

15 State

16 Zip Code

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

E & E, Inc., 1987, Site Inspection
NYSDEC, 1986, Inactive Hazardous Waste Disposal Sites in New York

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 State NY

02 Site Number 915019

II. ON-SITE GENERATOR

01 Name
E.I. DuPont DeNemours

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)
Station B, Sheridan Drive

04 SIC Code

05 City
Tonawanda

06 State
NY

07 Zip Code
14207

III. OFF-SITE GENERATOR(S)

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

IV. TRANSPORTER(S)

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

01 Name

02 D+B Number

03 Street Address (P.O. Box, RFD #, etc.)

04 SIC Code

05 City

06 State

07 Zip Code

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

E & E, Inc., 1987, Site Inspection
NYSDEC, 1986, Inactive Hazardous Waste Disposal Sites in New York

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 State NY

02 Site Number 915019

II. PAST RESPONSE ACTIVITIES

01 [ ] A. Water Supply Closed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] B. Temporary Water Supply Provided 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] C. Permanent Water Supply Provided 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] D. Spilled Material Removed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] E. Contaminated Soil Removed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] F. Waste Repackaged 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] G. Waste Disposed Elsewhere 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] H. On Site Burial 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] I. In Situ Chemical Treatment 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] J. In Situ Biological Treatment 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] K. In Situ Physical Treatment 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] L. Encapsulation 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] M. Emergency Waste Treatment 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] N. Cutoff Walls 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] O. Emergency Diking/Surface Water Diversion 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] P. Cutoff Trenches/Sump 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] Q. Subsurface Cutoff Wall 02 Date ______ 03 Agency ______
04 Description: None reported.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 State	02 Site Number
NY	915019

II. PAST RESPONSE ACTIVITIES (Cont.)

01 [ ] R. Barrier Walls Constructed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] S. Capping/Covering 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] T. Bulk Tankage Repaired 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] U. Grout Curtain Constructed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] V. Bottom Sealed 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] W. Gas Control 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] X. Fire Control 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] Y. Leachate Treatment 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] Z. Area Evacuated 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] 1. Access to Site Restricted 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] 2. Population Relocated 02 Date ______ 03 Agency ______
04 Description: None reported.

01 [ ] 3. Other Remedial Activities 02 Date ______ 03 Agency ______
04 Description: None reported.

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

E & E, Inc., 1987, Site Inspection
NYSDEC, 1987a, File Information

D1721

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915019

II. ENFORCEMENT INFORMATION

01 Past Regulatory/Enforcement Action [ ] Yes [X] No

02 Description of Federal, State, Local Regulatory/Enforcement Action

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

E & E, Inc., 1987, Site Inspection
NYSDEC, 1987a, File Information

6. ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

Chemical analyses of groundwater and soil samples collected from this site indicate the presence of various metals contaminating the groundwater and organic compounds contaminating the soil. The landfill was allegedly covered with foundry sands over a large portion of the site; this does not provide an adequate impermeable cap over the waste material and allows surface water to mix with the wastes and increase the production of leachate.

A Phase II investigation including an extensive groundwater monitoring program is recommended to determine the extent of the contamination plume and the pathways of migration and if the landfill was the source of these contaminants. It is also important to determine if the site has been properly closed.

7. REFERENCES

Blas, Jr. S.J., January 8, 1980, personal communication, Soils and Materials Engineer, Director of Testing Services, Empire Soils Investigations, Inc., Orchard Park, New York, letter to E.I. DuPont DeNemours and Company, Buffalo, New York.

Buehler, E.J., 1966, Geology of Western New York, Guide Book, Department of Geological Sciences, State University of New York at Buffalo, Buffalo, New York.

Buehler, E.J., and I.H. Tesmer, 1963, Geology of Erie County, New York, Bufalo Society of Natural Sciences Bulletin, Buffalo, New York.

Ecology and Environment, Inc., September 24, 1987, Site Inspection, Ecology and Environment, Inc., Buffalo, New York.

Erie County Department of Environment and Planning, 1982, Hazardous Waste Inactive Site Survey Phase I Report, Division of Environmental Control Solid Waste Section, Buffalo, New York.

Evans, J., August 27, 1987, personal communication, New York State Department of Environmental Conservation, Division of Fish and Wildlife, Olean, New York.

Federal Emergency Management Agency, 1982, Flood Insurance Rate Maps, National Flood Insurance Program, Baltimore, Maryland.

General Sciences Corporation, 1986, Graphical Exposure Modeling System (GEMS), Volume 3, Graphics and Geodata Handling, Prepared for USEPA Office of Pesticides and Toxic Substances Exposure Evaluation Division.

Koszalka, E.J., J.E. Paschal, Jr., T.S. Miller, and P.B. Duran, 1985, Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste-Disposal Sites, prepared for the United States Environmental Protection Agency by the United States Geological Survey, Chicago, Illinois.

LaSala, A.M., 1968, Groundwater Resources of the Erie-Niagara Basin, New York, New York State Department of Conservation, Water Resources Commission, Albany, New York.

Murtagh, W.J., 1976, The National Register of Historic Places, USDI National Park Service, Washington, D.C., with updates from the Federal Register in 1979, 1980, 1981, and 1982.

New York State Department of Environmental Conservation, 1986, Inactive Hazardous Waste Disposal Sites in New York State, Volume 9, Division of Solid and Hazardous Waste, Albany, New York.

____________, 1987a, State and Federal Regulated Wetland Maps, Critical Habitats Maps, and File Information, Buffalo, New York.

____________, 1987b, Comparison of 1981-1982 and 1985-1986 Toxic Substance Discharges to the Niagara River, Region 9, Buffalo, New York.

New York State Department of Health, 1982, New York State Atlas of Community Water System Sources 1982, Division of Environmental Protection, Bureau of Public Water Supply Protection, Albany, New York.

Niagara Toxics Committee, 1984, Report of Niagara Toxics Committee, prepared for the United States Environmental Protection Agency, Region II, New York, New York.

O'Neill, M., May 17, 1983, personal communication, NUS Corporation, Edison, New Jersey, Potential Hazardous Waste Site Preliminary Assessment, prepared for the United States Environmental Protection Agency, Region II, Edison, New Jersey.

Owens, D.W., W.L. Pittman, J.P. Wulforst, and W.E. Hanna, 1986, Soil Survey of Erie County, New York, United States Department of Agriculture Soil Conservation Service, Ithaca, New York.

Ryder, C., December 14, 1984, personal communication, Project Manager, NUS Corporation, Edison, New Jersey, Final Draft, Site Inspection Report and Hazardous Ranking System Model, E.I. DuPont, Tonawanda, New York, prepared for the United States Environmental Protection Agency, Region II, Edison, New Jersey.

Sax, N.I., 1982, Dangerous Properties of Industrial Materials, Van Nostrand Reinhold Company, New York, New York.

State of New York, Official Codes, Rules and Regulations Chapter X, 1985, Division of Water Resources, Article 2, Part 609 and Parts 700 through 704, New York, New York.

United States Environmental Protection Agency, 1984, Uncontrolled Hazardous Waste Site Ranking System; A Users Manual, National Oil and Hazardous Substances Contingency Plan, Appendix A (40 CFR 300) (47 FR 31219), July 16, 1982.

United States Geological Survey, 1965, 7.5-Minute Series (Topographic), Buffalo, NW, New York-Ontario Quadrangle, Erie County, New York.

Whitney, J., August 25, 1987, personal communication, United States Department of Agriculture Soil Conservation Service, East Aurora, New York.

APPENDIX A

PHOTOGRAPHIC RECORD

ecology and environment, inc.

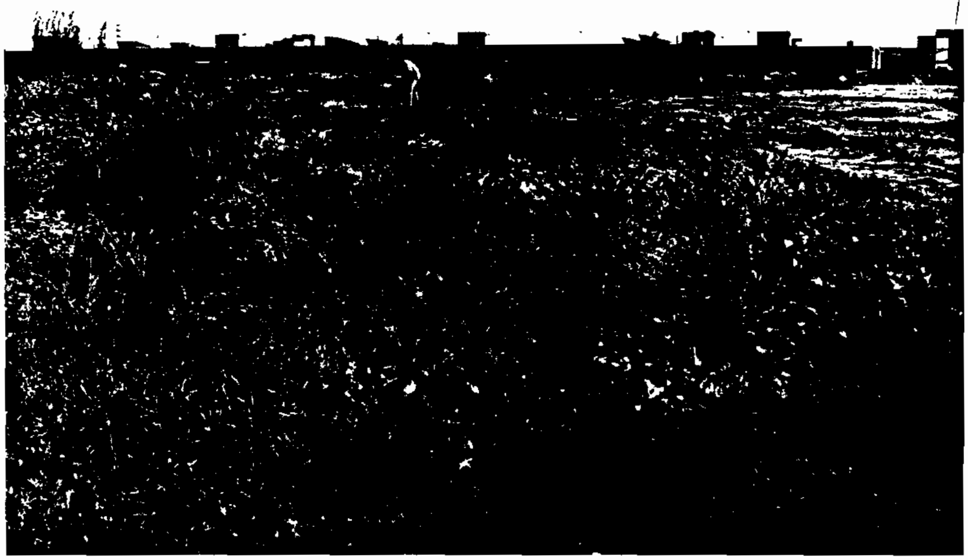
PHOTOGRAPHIC RECORD

Client: NYSDEC

E & E Job No.: ND-2021

Camera: Make Olympus OM-10

SN: 2387486



Photographer: M. Sienkiewicz

Date/Time: 9/24/87 14:00

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 12

Comments*: View to the south at entrance to landfill from access road.

Photographer: M. Sienkiewicz

Date/Time: 9/24/87 14:00

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 13

Comments*: View to west DuPont plant in background. Landfill in foreground is barren, and used for dumping of demolition debris.

*Comments to include location

ecology and environment, inc.

PHOTOGRAPHIC RECORD

Client: NYSDEC

E & E Job No.: ND-2021

Camera: Make Olympus OM-10

SN: 2387486

Photographer: M. Sienkiewicz

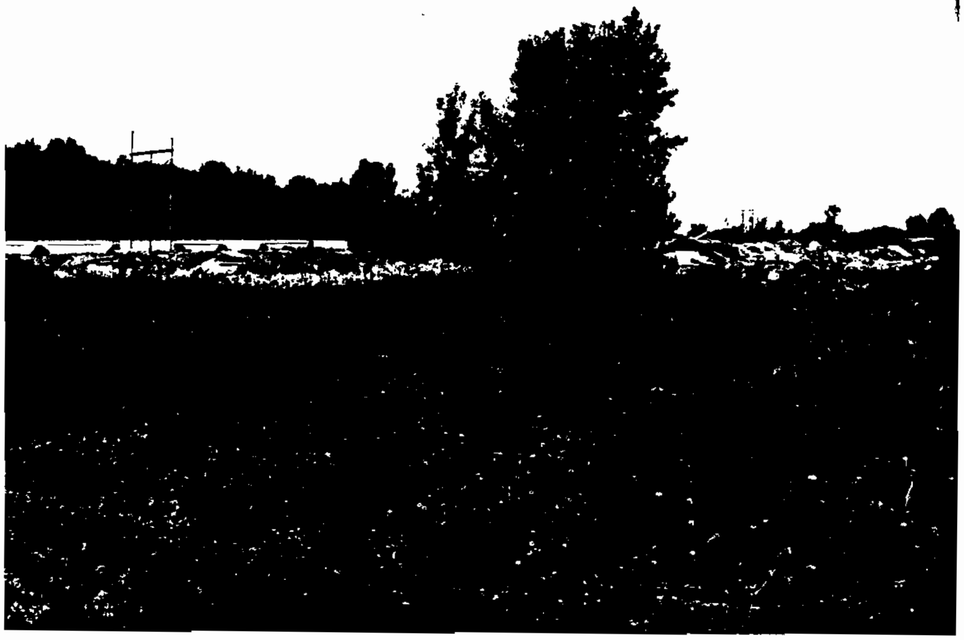
Date/Time: 9/24/87 14:00

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 14

Comments*: Exposed solid waste.



Photographer: M. Sienkiewicz

Date/Time: 9/24/87 14:00

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 15

Comments*: Demolition debris.

*Comments to include location

D1721

APPENDIX B

UPDATED NYSDEC INACTIVE HAZARDOUS WASTE DISPOSAL SITE REGISTRY FORM

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: 2a   Site Code: NY 915019

Name of Site: E.I. DuPont   Region: 9

Street Address: Sheridan Drive and River Road

Town/City: Tonawanda, New York   County: Erie

Name of Current Owner of Site: E.I. DuPont Company

Address of Current Owner of Site: Sheridan Dr., Station B, Buffalo, NY 14207

Type of Site: ☐ Open Dump ☐ Structure ☐ Lagoon
☒ Landfill ☐ Treatment Pond

Estimated Size: 30 to 40 acre(s)

Site Description: The DuPont site is a 30- to 40-acre waste disposal area containing 6 pits, 15 to 20 feet deep, into which the following wastes were dumped: cellulosic viscose, cellophane rayon and sponges, corlan, polyvinyl alcohol film, vexar netting, Tedlar with dimethylacetamide, polyvinyl fluoride film, nylon shutters, methyl methacrylate, methylene chloride, water based paints, and laboratory chemicals. The wastes have been covered with foundry sand. The site is reported to be underlain with 40 feet of clay over rock.

Hazardous Waste Disposed: ☒ Confirmed ☐ Suspected

Type and Quantity of Hazardous Wastes Disposed:

Type	Quantity (Pounds, Drums, Tons, Gallons)
Methyl methacrylate/methylene chloride	1,500 tons
Laboratory chemicals	1 ton

Time Period Site was Used for Hazardous Waste Disposal:

, 1921 To , 1978

Owner(s) During Period of Use: E.I. DuPont Company

Site Operator During Period of Use: E.I. DuPont Company

Address of Site Operator: Sheridan Drive, Station B, Buffalo, New York 14207

Analytical Data Available: [ ] Air [ ] Surface Water [X] Groundwater
[X] Soil [ ] Sediment [ ] None

Contravention of Standards: [X] Groundwater [ ] Drinking Water
[ ] Surface Water [ ] Air

Soil Type: Clay (1.08-1.06 x 10^{-8} cm/s permeability)

Depth to Groundwater Table: 4 to 40 feet

Legal Action: Type: Preliminary assessment/site inspections [X] State [X] Federal

Status: [ ] In Progress [X] Completed

Remedial Action: [ ] Proposed [ ] Under Design
[ ] In Progress [ ] Completed

Nature of Action:

Assessment of Environmental Problems:

Potential groundwater and soil contamination. Further study is needed to determine migration of contaminants.

Assessment of Health Problems:

Low potential. Potential increases if contaminants are found to reach Niagara River, which is used for recreation and as a drinking source.

Person(s) Completing This Form:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION		NEW YORK STATE DEPARTMENT OF HEALTH	
Name:		Name:	
Title:		Title:	
Name:		Name:	
Title:		Title:	
Date:		Date:	

APPENDIX C

PHOTOCOPIED REFERENCES

FM-105 REV. 12-63

DU PONT
ESTABLISHED 1802

E. I. du Pont de Nemours & Company
INCORPORATED
Yerkes Plant
Station B–Drawer L
Buffalo, New York 14207

FILM DEPARTMENT

Specialty Markets Division

CC: W. E. Neff - Film, Wilm.
A. J. Geib - F&F, Wilm.
J. D. Spangler
R. P. Hughes
G. T. Rosenlund
J. D. Schoonover

RDPHE
Water
Air
Gen.
Circ.
File

May 8, 1975

RECEIVED
N. Y. S. DEPT. OF
ENVIRONMENTAL CONSERVATION
REGION 9 HEADQUARTERS

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
584 Delaware Avenue
Buffalo, New York 14202

Attn: Mr. Manuel Feinstein, P.E.
Senior Sanitary Engineer

Dear Mr. Feinstein:

During your inspection of our refuse disposal site on April 11, 1975, you observed conditions which you reported as unsatisfactory, as applied to Part 360 of the Solid Waste Disposal Rules of the State of New York.

Since then we have corrected this condition by bulldozing the plastic waste into the excavation and back-filled. This has been our regular procedure, but at the time of your inspection the soft ground had not permitted our trucks to back up to the edge of the excavation.

Enclosed is completed Form SW-7, Application for Approval to Construct a Solid Waste Management Facility.

The solid waste disposal facility you inspected is restricted to the disposal of our plastic process wastes which exceed our recycling capabilities. All other wastes are hauled away by the Rapid Disposal Service Inc., to commercial land fill areas.

The plastics we dispose of in our facility are as follows:

1. Waste "Tedlar"* PVF (polyvinyl fluoride) film which is inert and non-toxic.
2. Polyolefin "Vexar"** netting wastes, consisting of non-toxic resins of primarily polyethylene and polypropylene.
3. "Corian"*** sheets made of polymethylmethacrylate containing inert inorganic fillers. This inert, non-toxic material represents more than 90% of the total waste.

Our application for Construction of a Solid Waste Management Facility will be forthcoming in the very near future.

Very truly yours,

Leonard E. Amborski

Dr. Leonard E. Amborski
ENVIRONMENTAL COORDINATOR

LEA/mrn

Attachments

*Du Pont's registered trademark for its polyvinyl fluoride film

**Du Pont's registered trademark for its plastic netting and tubing

***Du Pont's registered trademark for its methyl methacrylate building products

-7 (11/73) NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR APPROVAL TO CONSTRUCT A SOLID WASTE MANAGEMENT FACILITY

E APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY

PROJECT NO.

DATE REC

DEPARTMENT ACTION ☐ Approved ☐ Disapproved

DATE

OWNER'S NAME: E. I. Du Pont De Nemours & Co., Inc.

2. ADDRESS (Street, City, State, Zip Code): Sheridan Dr., Station B, Buffalo, N. Y. 14207

3. Telephone No.: (716) 876-44

OPERATOR'S NAME: Same

5. ADDRESS (Street, City, State, Zip Code): Same

6. Telephone No.: Same

. ENGINEER'S NAME: Vernon P. Fruehauf

8. ADDRESS (Street, City, State, Zip Code): Same

9. Telephone No.: Same

. ENGINEER'S N.Y.S. LICENSE NO.: N.Y. #28938

10. TYPE OF PROJECT FACILITIES:
☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☒ Sanitary Landfill ☐ Incineration
☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☐ Other

. Briefly describe the project including the basic process and major components:

Disposal of waste plastic films, sheets and netting

. Describe location of facility. (Attach a USGS Topographic Map showing the exact location of the facility)

3845 ft. East of Niagara River
3260 ft. East of River Road
1300 ft. West of Kenmore Ave.
800 ft. South of N.Y. State Thruway

. County in which facility is located: Erie

14. Environmental Conservation Region in which facility is located: Region 9

Municipalities Served by Facility	County	No. of Municip
N/A	N/A	N/A

. Describe briefly how the proposed facility relates to the Comprehensive Solid Waste Management Plan for the Municipality. Explain any deviation from that Pl

N/A

. If the facility is other than a sanitary landfill, describe the residues in terms of quantities and types. Also indicate the methods and locations of residue dispos or, if recyclable, indicate markets:

N/A

. If the facility is a sanitary landfill, provide the following information:

a. Total useable area – 0.46 Acres
b. Distance to nearest surface water – 3845 Feet
c. Depth to nearest ground water – 130 Feet
d. Depth to nearest rock – 65 Feet
e. Distance to nearest airport – 10 miles
f. Expected life of site – 1 years
g. Is site on a flood plain? ☐ Yes ____ Year Flood ☒ No
h. Predominant type of soil on site CL (Inorganic Clay) (Use Unified Soil Classification System)

. Anticipated construction starting and completion dates
From: October 1974
To:

20. Estimated Population Served
Current: N/A
Design:

. Estimated Cost
Initial: $16,000
Annual:

22. Estimated Daily Tonnages of Solid Waste
Current: 6 Tons/Day
Design:

. Operating Hours per Day: 8 Hours - Monday thru Friday

24. Are attached plans and specifications in substantial conformance with "Content Guidelines for Plans and Specifications"? ☒ Yes ☐ No

. CERTIFICATION:

The undersigned does hereby certify that the information in this application and in other attached statements and exhibits is true, correct and complete to th best of his knowledge and belief.

May 8, 1975
Date

James D Spangler Plant·Manager
Signature and Title

James D. Spangler Plant Manager

Mr. McMahon
Jim
Mr [illegible]

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT AND PLANNING
DIVISION OF ENVIRONMENTAL CONTROL
RATH BUILDING, ROOM 927
95 FRANKLIN STREET
BUFFALO, NEW YORK 14202

RECEIVED
MAR 1 1979
N.Y.S. Dept. of Environmental Conservation
Region 9 Headquarters

Ronald D. Koczaja

March 12, 1979

FILE

File: 1516

Inspection of Abandoned On-Sote Solid Waste Disposal Area

DuPont Incorporated
River Road
Tonawanda, New York

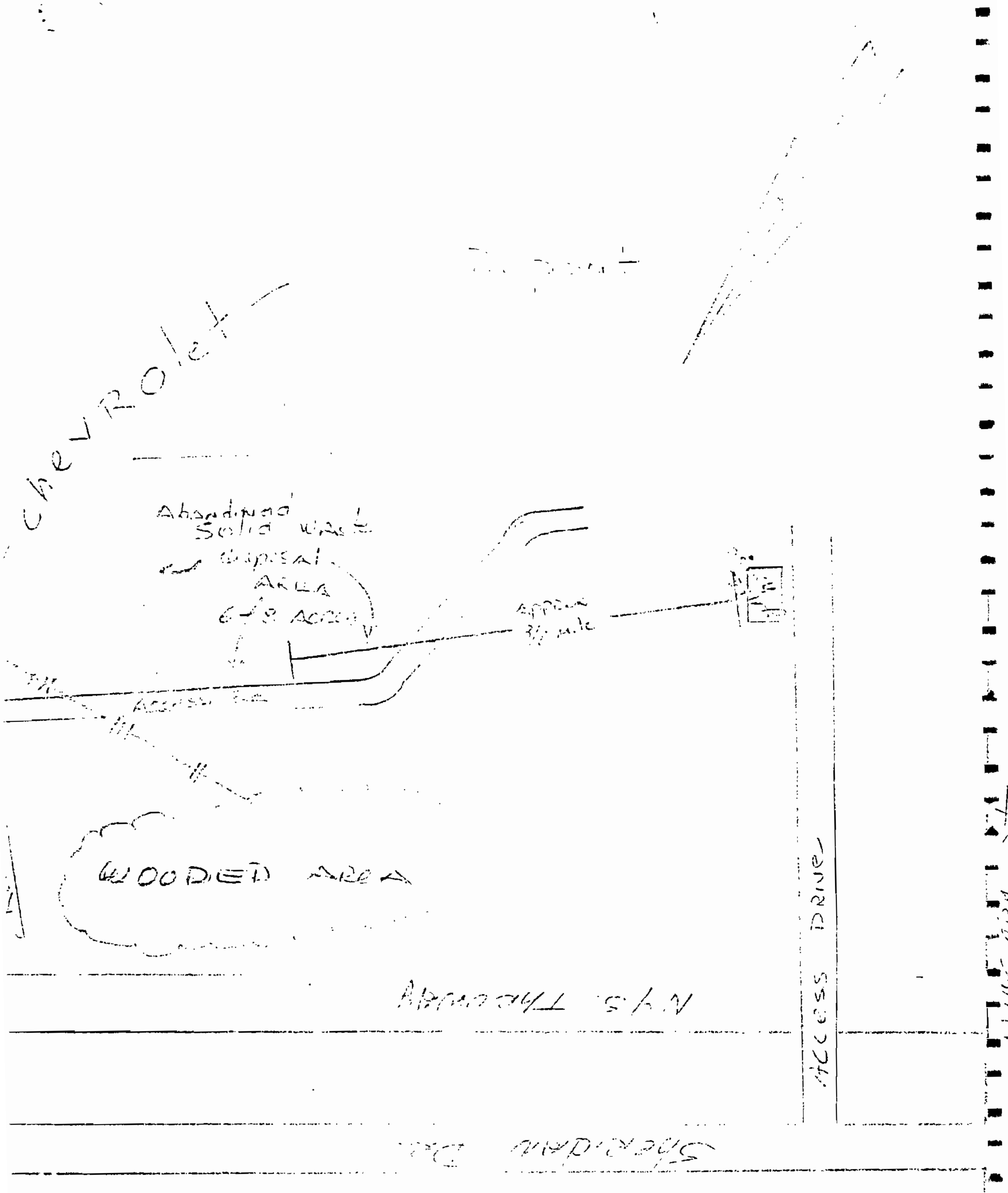
The writer met with Dr. Amborski of Dupont to inspect the plant's on-site disposal area. Dupont last used plant grounds for waste disposal approximately one year ago. A total of 6-8 acres were used over an eight year span. Waste solid Corian (Aluminum oxide filled methyl methacrylate), Vexar (polyethylene, polypropylene), and Tedlar (poly vinyl fluoride) was deposited on-site.

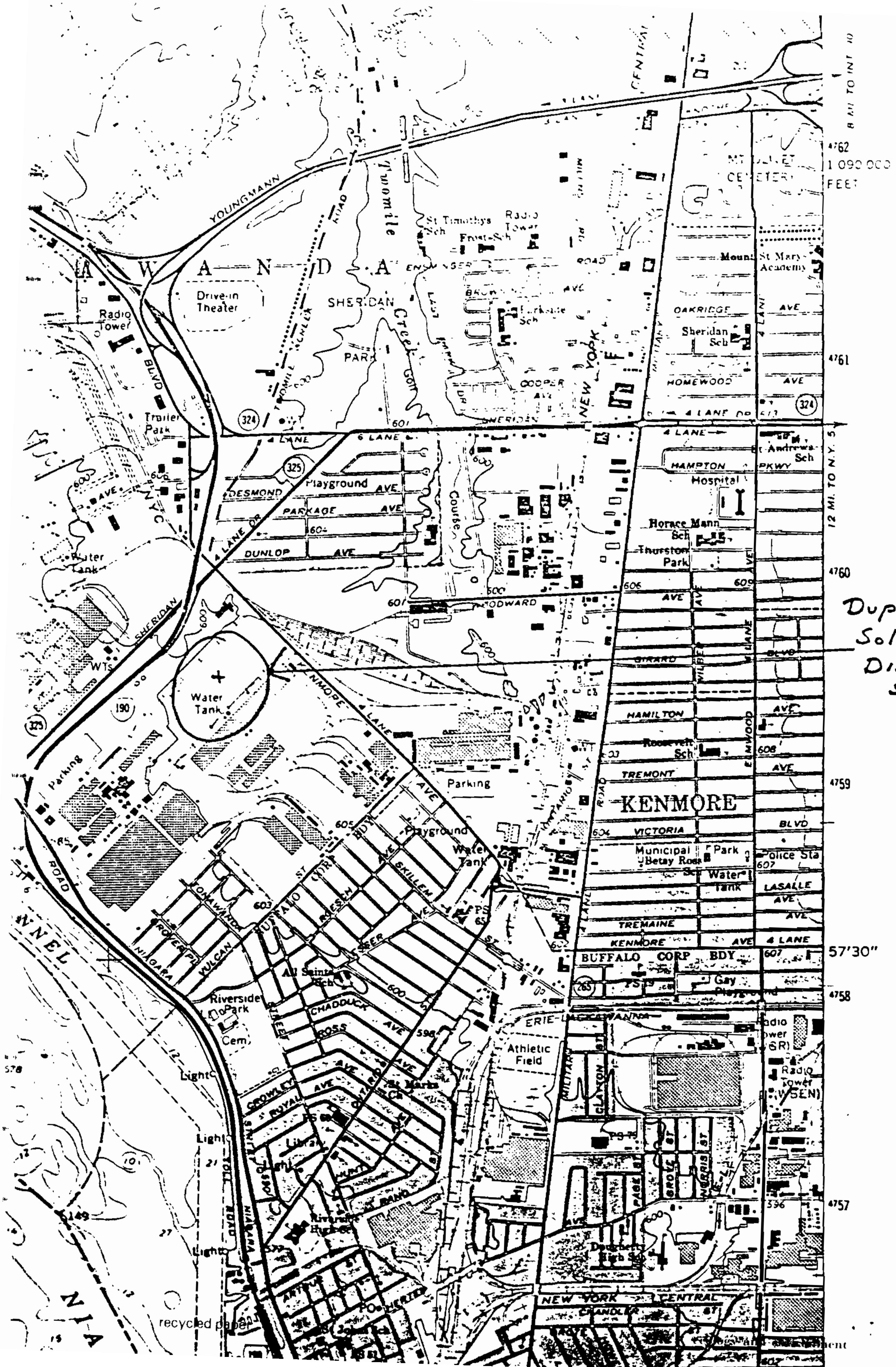
Dr. Amborski reported the soil on site is approximately 40 feet of clay over rock. Pits approximately 15-20 feet deep were dug to receive the waste. There was no intermediate cover used during the period of site use. Once filled the pits were covered with soil and graded. The inspection found that pieces of Corian had worked its way to the surface over the entire area and were visible. Grading of the abandoned site appeared adequate as very little ponding was evident and the site blended into the surrounding contours. The vegetation that surrounds the area on three sides has not yet reclaimed the site. The site is shielded from view of motorists on the Thruway by a patch of woods and industrial lands are located along the other three sides. Dupont currently disposes of its solid waste at the Newco facility in Niagara Falls. Their waste is hauled by Niagara Sanitation.

The solubilities of these polymerized materials are such that leachate should not be a problem. Vegetation should establish itself this coming summer providing both cover and erosion control. As this is an industrial area, the presence of some of the disposed material on the surface is acceptable in the writer's opinion.

RDK:jk

cc: Mr. Campbell
Mr. Voell
Mr. McMahon, NYSDEC


Chevrolet
Abandoned Solid Waste Disposal Area 6-8 Acres
Approx 3/4 mile
Access Rd
WOODED AREA
N.Y.S. Thruway
ACCESS DRIVE
Sheridan Dr.



Dupont Solid Waste Disposal Site 5/8/75 L.E.A.

E I. DuPont 915019 file

600 Delaware Avenue, Buffalo, NY 14202

June 9, 1981

Dr. Leonard E. Amborski
Environmental Coordinator
E.I. DuPont and Company
Yerkes Plant
Buffalo, NY 14207

Dear Dr. Amborski:

During an inspection tour on June 1, 1981 by Mr. Donald Campbell of the Erie County Department of Environment and Planning, and in a letter dated June 3, 1981, you have provided some information regarding several sampling wells installed for monitoring of an inactive landfill, located on your property.

This Department has also been informed that, in the past, water samples from the wells have been analyzed for various parameters by Recra Research, Inc.

Since the subject site is presently under investigation by this office, please arrange to submit the results of all the analyses, previously performed on the samples, to NYSDEC for review and comments.

Thank you for your cooperation, and if you have any questions regarding this matter, please do not hesitate to contact this office at 842-5041.

Very truly yours,

Peter J. Buechi, P.E.
Senior Hydraulic Engineer

AT:amd

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202-1073

Robert F. Flacke
Commissioner

June 18, 1982

Mr. Leonard E. Amborski
E.I. du Pont de Nemours
Sheridan Drive
Station B
Buffalo, New York 14207

RE: Hazardous Waste Site Investigation
E. I. du Pont de Nemours

Dear Mr. Amborski:

This letter is to confirm your telephone conversation with Mr. Robert Senior on June 3, 1982, at which time you granted this Department permission to conduct our sampling program at the above-referenced site. The details of our sampling program were addressed to you in our letter dated June 8, 1982.

We greatly appreciate your cooperation in this matter. If further questions or concerns arise concerning our sampling program, please feel free to contact Mr. Senior or myself at 847-4590.

Yours truly,

Peter J. Buechi, P.E.
Associate Sanitary Engineer

RJS:cag

October 30, 1979

Dr. Len Amborski
E. I. du Pont de Nemours and Co., Inc.
Station B, Drawer L
Buffalo, New York

Re: Well Elevations

Dear Dr. Amborski:

Please find enclosed Recra Research, Inc.'s results of well elevation taken at the Yerkes Plant on October 2, 1979.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

RK Wyeth/Rms

Robert K. Wyeth
Laboratory Director

RKW/pm

Job #826

RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL RESULTS

E. I. DU PONT DE NEMOURS AND COMPANY, INC.
YERKES PLANT

Report Date: 10/30/79
Sample Date: 10/02/79

GROUNDWATER ELEVATION	
SAMPLE IDENTIFICATION	PARAMETER (UNITS OF MEASURE) Water Elevation (Feet)
1-S	4.17
1-D	37.58
2-S	4.17
2-D	38.00
3-S	3.63
3-I	4.38
3-D	42.00
4-S	3.42
4-D	42.00
7-S	4.25
7-D	39.42

COMMENTS: Water elevations were taken by Recra personnel on October 2, 1979 prior to well evacuation for sampling. Water elevation is distance from top of casing to top of groundwater.

FOR RECRA RESEARCH, INC. R K Wyeth / Ras

DATE 10-30-79

New York State Department of Environmental Conservation
584 Delaware Avenue, Buffalo, N.Y. [illegible]
Region 9 Environmental Quality Office

Ogden Reid
Commissioner
W.M.Friedman, P.
Acting Regional Director

August 8, 1975

Dr. Leonard Anborski
E.I. DuPont Company, Inc.
Sheridan Drive
Station B
Buffalo, New York 14207

re: Refuse Disposal Site
E.I. DuPont Company
Tonawanda (T) - Erie County

Dear Sir:

On July 21, 1975, Mr. Feinstein, of this Department, made an inspection of the above solid waste disposal site for the purpose of determining its compliance with Article 27 of the Environmental Conservation Law and Part 360 of the authorized Rules and Regulations.

Based on his report, the following is a list of the unsatisfactory conditions observed and the steps that should be taken to place this facility in a safe sanitary condition and in compliance with appropriate Laws, Rules, and Regulations.

1. Cover has not been applied daily and the refuse has not been spread and compacted properly. Part 360.2(4) states the following:

   Refuse at a refuse disposal area shall be compacted and covered daily with a compacted layer of at least six inches of a suitable cover material; and a final compacted cover of at least two feet of a suitable cover material shall be placed within one week afte the final deposit of refuse.

We trust that your immediate attention will be given the above and that prompt and effective steps will be taken to correct these conditions, and that this office will be kept fully advised of all action taken or contemplate If at any time we may render any advice or assistance, please do not hesitate to call upon us.

Very truly yours,

W M Friedman

W. M. Friedman, P.E.
Regional Engineer for Environmental

7/21/75 1:30 P.M.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

REFUSE DISPOSAL AREA INSPECTION REPORT

NAME OF SITE E.I. DuPONT

LOCATION (Town, Village, City) Town Tonawanda

COUNTY ERIE

REGION NO. 9

OPERATOR E.I. DuPONT

ADDRESS Sheridan

SITE NO.

OWNER E.I. DuPONT

ADDRESS

EXPLAIN YES ANSWERS ON REVERSE SIDE

	YES	NO
1. Burning at Time of Inspection.	☐	☒
2. Evidence of On-site Burning.	☐	☒
3. Dumping into Water.	☐	☒
4. Leachate Observed At The Site.	☐	☒
5. Leaching into a Water Course.	☐	☒
6. Refuse not Confined to a Manageable Area.	☐	☒
7. Unsatisfactory Daily Soil Cover.	☒	☐
8. Refuse Protruding through Completed Areas.	☐	☒
9. Improper Spreading and Compaction of the Refuse.	☐	☒
10. Pooling of Water, Cover Soil Cracking, Soil Erosion, or Improper Slope on Completed Area.	☐	☒
11. Evidence of Rodents and Insects.	☐	☒
12. Blowing Paper Problem.	☐	☒
13. Salvaging of Refuse Creating a Nuisance.	☐	☒
14. Approach Road Impassable to Vehicular Traffic During part of the year.	☐	☒

CONTROL OF SITE

☒ Signs ☐ Fence and Gate ☐ Supervision ☐ None

EQUIPMENT AT SITE

Type HI-LIFT

Size

TYPE OF REFUSE DISPOSED

☐ Residential ☐ Commercial ☒ Industrial ☐ Demolition ☐ Agricultural ☐ Scavenger

PERSON INTERVIEWED DR. LEO AMBERSKI / JOHN KELLER

DATE Month 07 Day 21 Year 75

TIME 1:30 P.M.

INSPECTED BY (Signature)

TITLE San. Eng.

SW-1 (12/71)

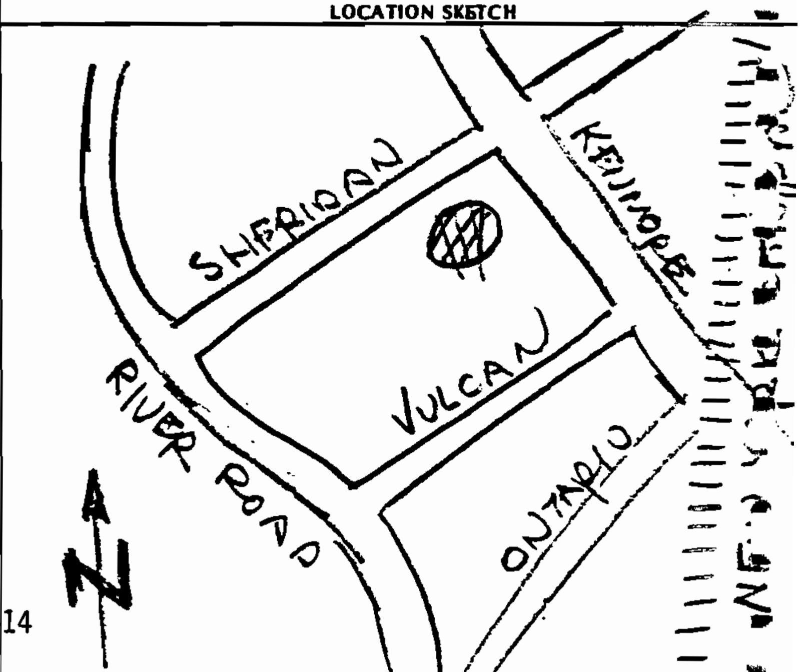
1. INVESTIGATING RECYCLING OF WASTE POLYETHYLENE FILM PRODUCTS

2. RELATIVELY SMALL OPERATION

UESTION NO.	EXPLANATION OF YES ANSWERS
	JOHN KELLOG, SERVICE BUREAU
	J. MARAGLINO
	Regional Dir.
	1. THE LANDFILL IS INHERENTLY ETC. A TRENCH HAS BEEN DUG, [illegible] AND TRASH DUMPED IN.
4	2. USING ADEQUATE COVER WOULD CUT AVAILABLE LAND SPACE IN HALF.

REFUSE SITE SKETCH

LOCATION SKETCH



New York State Department of Environmental Conservation
584 Delaware Avenue, Buffalo, N.Y. 14202
Region 9 Environmental Quality Office

Ogden Reid
~~H[illegible]nd~~,
Commissioner
H. Dale Bossert,
Regional Director

June 2, 1975

Dr. Leonard Amborski
E.I. DuPont Company, Inc.
Sheridan Drive
Station B
Buffalo, New York 14207

re: Refuse Disposal Site
E.I. DuPont Company
Tonawanda (T) - Erie County

Dear Sir:

On May 22, 1975 , Mr. Feinstein , of this Department, made an inspection of the above solid waste disposal site for the purpose of determining its compliance with Article 27 of the Environmental Conservation Law and Part 360 of the authorized Rules and Regulations.

Based on his report, the following is a list of the unsatisfactory conditions observed and the steps that should be taken to place this facility in a safe sanitary condition and in compliance with appropriate Laws, Rules, and Regulations.

> Exposed refuse was observed. Part 360.2(4) states that refuse at a refuse disposal area shall be compacted and covered daily with a compacted layer of at least six inches of a suitable cover material.

We trust that your immediate attention will be given the above and that prompt and effective steps will be taken to correct these conditions, and that this office will be kept fully advised of all action taken or contemplated. If at any time we may render any advice or assistance, please do not hesitate to call upon us.

Very truly yours,
W M Friedman

W. M. Friedman, P.E.
Regional Engineer for Environmental Quality

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

REFUSE DISPOSAL AREA INSPECTION REPORT

NAME OF SITE E. I. DuPont

LOCATION (Town, Village, City) Ton [illegible]

COUNTY Erie

REGION NO. 9

OPERATOR E. I. DuPont

ADDRESS Sheridan Drive

SITE NO.

OWNER

ADDRESS

EXPLAIN YES ANSWERS ON REVERSE SIDE

	YES	NO
1. Burning at Time of Inspection.	☐	☒
2. Evidence of On-site Burning.	☐	☒
3. Dumping into Water.	☐	☒
4. Leachate Observed At The Site.	☐	☒
5. Leaching into a Water Course.	☐	☒
6. Refuse not Confined to a Manageable Area.	☐	☐
7. Unsatisfactory Daily Soil Cover.	☐	☐
8. Refuse Protruding through Completed Areas.	☐	☐
9. Improper Spreading and Compoction of the Refuse.	☐	☐
10. Pooling of Water, Cover Soil Cracking, Soil Erosion, or Improper Slope on Completed Area.	☐	☐
11. Evidence of Rodents and Insects.	☐	☐
12. Blowing Paper Problem.	☐	☐
13. Salvaging of Refuse Creating a Nuisance.	☐	☐
14. Approach Road Impassable to Vehicular Traffic During part of the year.	☐	☐

CONTROL OF SITE DISPOSAL SITE ON COMPANY PROPERTY

☐ Signs ☐ Fence and Gate ☐ Supervision ☐ None

EQUIPMENT AT SITE

Type HI-LIFT

Size

TYPE OF REFUSE DISPOSED

☐ Residential ☐ Commercial ☒ Industrial ☐ Demolition ☐ Agricultural ☐ Scavenger

PERSON INTERVIEWED Leonard Amburski / John Keller / Bob Vogel

DATE Month 5 Day 22 Year 75

TIME 10:00 AM

INSPECTED BY (Signature)

TITLE SW Eng

SW-1 (12/71)

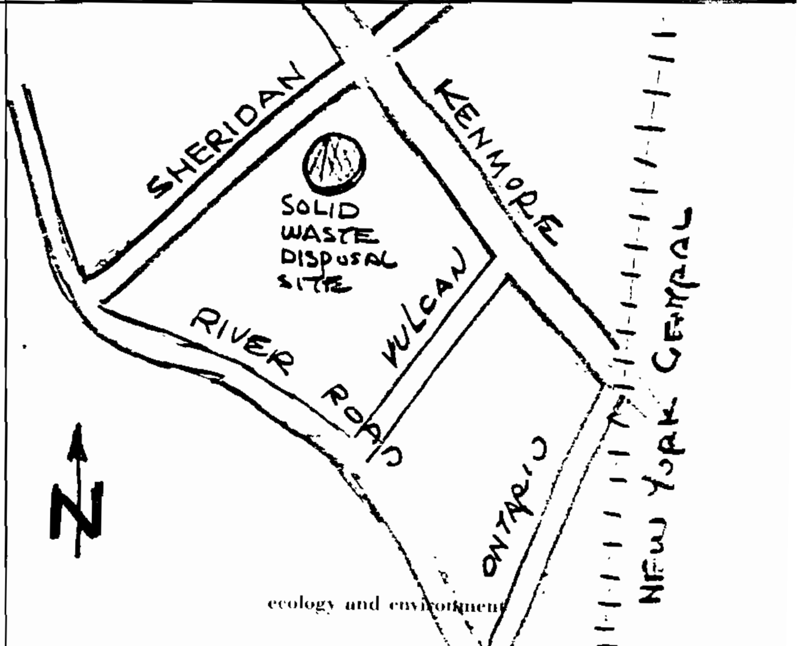
ESTION NO. | EXPLANATION OF YES ANSWERS

NOTE: I WAS TAKEN TO THE SITE BY DR. AMBORSKI, JOHN KELLER + BOB HUGHES. THE SITE WAS VASTLY IMPROVED FROM A PREVIOUS INSPECTION

DR. AMBORSKI ASSURED ME THAT DU PONT WOULD MAKE EVERY EFFORT TO COMPLY WITH PART 360.

REFUSE SITE SKETCH

LOCATION SKETCH



Ogden Reid
xxxxxxxxxx

Region 9 Environmental Quality Office

April 14, 1975

Dr. Leonard Amborski
E. I. DuPont Company, Inc.
Sheridan Drive
Station B
Buffalo, New York 14207

Dear Dr. Amborski:

re: Refuse Disposal Site
E.I. Dupont Company
Sheridan Drive
Tonawanda (T) - Erie County

A representative of this Department inspected the above refuse disposal site on April 11, 1975, to ascertain compliance with Part 360 of the Solid Waste Disposal Rules of the State of New York. We also wish to acknowledge the courteous treatment given the representative.

An analysis of the report indicates the following unsatisfactory conditions:

1. Cover has not been applied daily and the refuse has not been spread and compacted properly. Part 360.2(4) states that refuse at a refuse disposal area shall be compacted and covered daily with a compacted layer of at least six inches of a suitable cover material; and a final compacted cover of at least two feet of a suitable cover material shall be placed within one week after the final deposit of refuse.

   We trust that prompt attention shall be given to correct the unsatisfactory landfill conditions. Also, that this office shall be kept informed of all actions taken.

Enclosed for your information and use are the following:

a. Application for Approval to Construct a Solid Waste Management Facility (SW 7).

b. Content Guidelines for Plans and Specifications - Application for Construction of a Solid Waste Management Facility.

c. Part 360 - Solid Waste Rules of the State of New York.

If at any time we can render advice or assistance please do not hesitate to call.

Very truly yours,

Manuel Feinstein, P.E.
Sr. Sanitary Engineer

MF/nl
Att.
cc: Mr. Michalek - ECDEQ
Mr. Friedman
Mr. Van Epps

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

REFUSE DISPOSAL AREA INSPECTION REPORT

NAME OF SITE E.I. Du Pont Co.	LOCATION (Town, Village, City) Town of Tona.	COUNTY Erie	REGION NO.
OPERATOR E.I. Du Pont Co	ADDRESS Sheridan Drive		SITE NO.
OWNER E.I. Du Pont Co	ADDRESS		

EXPLAIN YES ANSWERS ON REVERSE SIDE

	YES	NO
1. Burning at Time of Inspection.	☐	☒
2. Evidence of On-site Burning.	☐	☒
3. Dumping into Water.	☐	☒
4. Leachate Observed At The Site.	☐	☒
5. Leaching into a Water Course.	☐	☒
6. Refuse not Confined to a Manageable Area.	☐	☒
7. Unsatisfactory Daily Soil Cover.	☒	☐
8. Refuse Protruding through Completed Areas.	☐	☒
9. Improper Spreading and Compaction of the Refuse.	☒	☐
10. Pooling of Water, Cover Soil Cracking, Soil Erosion, or Improper Slope on Completed Area.	☐	☒
11. Evidence of Rodents and Insects.	☐	☒
12. Blowing Paper Problem.	☐	☒
13. Salvaging of Refuse Creating a Nuisance.	☐	☒
14. Approach Road Impassable to Vehicular Traffic During part of the year.	☐	☒

CONTROL OF SITE

☐ Signs ☐ Fence and Gate ☐ Supervision ☐ None

EQUIPMENT AT SITE

Type
None

Size
None

TYPE OF REFUSE DISPOSED

☐ Residential ☐ Commercial ☒ Industrial ☐ Demolition ☐ Agricultural ☐ Scavenger

PERSON INTERVIEWED	DATE Month	Day	Year	TIME
Dr Leonard Ambroski	04	11	75	1:00 P.M

INSPECTED BY (Signature)	TITLE
M. Fenstein	Sanitary Engineer

SW-1 (12/71)

1973

APPROVAL

TO ESTABLISH A NEW REFUSE DISPOSAL AREA

E. I. du Pont de Nemours and Company, Inc.

the operator of a refuse disposal area known as

E. I. du Pont de Nemours and Company, Inc. - Sheridan Drive, Tonawanda

located in the

Town of Tonawanda in Erie County

is granted approval to establish the above-named refuse disposal area, described in the application for approval dated February 28, 1973 as provided by Part 19 of the State Sanitary Code, established by the Public Health Council of the State of New York subject to the condition that the refuse disposal area is operated in conformance with the requirements of Part 19 of the State Sanitary Code.

This approval is granted subject to any and all State, local and municipal laws, ordinances, codes, rules, and regulations. It is not transferrable.

Signature of Issuing Officer David E. Barry, P.E.

Title **David E. Barry, P.E.**
Deputy Commissioner

Department **Erie County Health Department**
Environmental Health Services

Address **95 Franklin Street**
Buffalo, New York 14202

Date **March 16, 1973**

ADDENDUM: DISPOSAL OF THE FOLLOWING ONLY!

1. Waste Tedlar (polyvinyl fluoride) film which is inert and non toxic. A small portion of this film will contain solvent.
2. Polyolefin "Vexar" netting wastes, consisting of non-toxic resins of primarily polyethylene and polypropylene.

San 240 (4/63) NYSDH

3. "Corain" sheets made of polymethylmethacrylate containing inert filler such as alumina.

NEW YORK STATE DEPARTMENT OF HEALTH
APPLICATION FOR APPROVAL TO OPERATE A NEW REFUSE DISPOSAL AREA

Operator E. I. du Pont de Nemours & Co., Inc.

Address Sheridan Drive Sta. B, Bflo.N.Y. 14207

Days and hours attendant on duty None

Owner E. I. du Pont de Nemours & Co., Inc.

Address "

Total usable area 5 acres

Attendant "

Address "

Type of soil Clay

Municipalities to be served None Used exclusively for our own industrial waste - plastic materials only.

Detailed site location and distance to centers of communities served on Du Pont plant property

Total population - per cent served -

Depth to rock 65 Ft.

Depth to water 130 Ft.

Will a gate and sign (showing rules) be provided at entrance* Yes ☐ No ☒

Will area be locked when closed Yes ☒ No ☐

Days and hours site to be open during plant working hours

What precautions will be taken to prevent burning and to extinguish fires* Burning prohibited - plant fire crew available

Describe method to be used for confining dumping to a narrow face and for compacting and covering all refuse daily.* Include source of cover material, type and number of equipment and times of operation. The dump is an open pit (see map) which is being back filled with foundry sand.

What measures will be taken to control insects and rodents? None

What means will be used to confine paper and refuse to site? Plant site is fenced

Will salvaging be permitted Yes ☐ ** No ☒

What measures will be taken to keep approach road passable to vehicular traffic during all seasons of the year? Road is plowed

Attach a plot plan of the refuse disposal area sufficient to locate area with certainty, and include the following information: boundaries, habitation within 1500 ft., prevailing wind, access road, nearest public highway, sequence of dumping areas to be used, distance to nearest public water supply source, watercourses, direction of surface slope and rock slope, natural drainage channels, swamps, areas subject to flooding, fences and gates, topography (include contours at 2-5 ft. intervals or spot elevations, road elevations, final elevation of fill, flood level), portable shed for tools and maintance equipment, movable snow fences for paper and snow control, future use, final grade slope (1/2% to 1%), proposed seeding.

Signature of Operator - E. I. du Pont de Nemours & Co., Inc.

Date

Signature of Owner Lavelle, Plant Mgr.

Date 2-28-73

* If an exemption to this requirement is requested, it must be accompanied by adequate justification to show that a public health nuisance will not be created thereby.

**Explain on reverse side what means will be taken to prevent a nuisance.

THE HEALTH OFFICER MAY REQUIRE SUCH PLANS, REPORTS, SPECIFICATIONS AND OTHER DATA AS IS NECESSARY FOR HIM TO DETERMINE WHETHER THE SITE IS SUITABLE AND THE PROPOSED METHOD OF OPERATION FEASIBLE.

February 26, 1973

Mr. Robert Roesser

Mr. Conrad C. Tota

Dupont Chemical Corporation
River Road
Tonawanda, New York

On Tuesday, February 2, 1973, a meeting was held in your office with Mr. Kelly, Mr. Tota, and Mr. Amborski of Dupont Chemical Corporation, with reference to the application for permit to operate a refuse disposal area on Dupont property.

The material to be disposed of on the property is an inert film. Mr. Amborski submitted blue prints and indicated the depth of excavation is only 14' deep, and soil would be purchased for the application of cover material.

After we discussed the proposed operation of the landfill site, Mr. Amborski indicated that there also exists the possibility of hauling this film material out of the plant by the refuse haulers presently under contract, therefore, totally eliminating the need for a landfill site.

Mr. Amborski indicated he will discuss this possibility with his superiors and notify the Erie County Health Department of the decision within two (2) weeks.

You will be advised of the current situation when the information is available.

CCT:wb

cc: Mr. Kelly

FM-103

DU PONT
ESTABLISHED 1802

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
YERKES PLANT
STATION B
BUFFALO 7, NEW YORK

FILM DEPARTMENT

RECEIVED
MAY 20 1964
ERIE COUNTY DEPT.
OF HEALTH
TONAWANDA OFFICE

May 19, 1964

County of Erie Health Department
32 North Niagara St.
Tonawanda City, N. Y.

Attention: Mr. James F. Stubbe, District Supervisor

Re: Application for Permit to Dispose of Offensive Material - River Road - Town of Tonawanda, N. Y.

Gentlemen:

As requested in your letter of May 6, 1964, addressed to Mr. Herbert Knoll, Service Supervisor, enclosed are two application forms, duly signed, to cover operation of disposal area on our plant property.

Yours very truly,

E. I. DU PONT DE NEMOURS & CO., INC.

D. G. Cushing

D. G. CUSHING
PLANT MANAGER

DGC/EDS
Encs

Erie County Health Dept.
32 No. Niagara Street
Tonawanda, N.Y.
Tel. -8868

~~remove~~ Non- and non-putrescible
Application for Permit to ~~transport~~/Offensive/Material
dispose of
(Cross out term not applicable)

To the Erie County Commissioner of Health:

SIR: Under the provisions of Section 4, Article VIII of the Sanitary Code of Erie County, New York

~~remove~~- Non- and non-putrescible
Application is hereby made to ~~transport~~ / offensive/material concerning which the
dispose of
following is submitted.

Name of Applicant: **E. I. du Pont de Nemours & Co., Inc.**

Address: **River Road - Station B, Buffalo 7, New York**

Description of Material: **Cellophane - wood - paper - polyethylene - "Tedla**

Storage:
(If stored prior to disposal, indicate in what manner)

Location of Storage:
(Address)

Transport Vehicle or Vehicles: **Plant trucks and Dempster-Dumpster units**
(Describe as to type of capacity)

Vehicles, Equipment, etc. stored at: **Plant garage**
(When not in use)

Method of Disposal of Material: **Cellophane, wood and paper - burned in a steel**
(Describe in detail, giving location)
and wire incinerator. Non-burnables, wet cellophane waste, polyethylene,
and "Tedlar"* are buried.

Area in which Applicant operates or proposes to operate: **On plant premises -**
Tonawanda, New York
(Cities, Townships, Villages)

Date: **5/19/64** Signature: D. G. Cushing
(Owner or responsible head of organization)
D. G. CUSHING, PLANT MANAGER

NOTE:
An application for permit or renewal of permit must be sent each year to the Erie County Commissioner of Health by the person or firm proposing to operate this business. Applications should reach the Commissioner's Office not later than December 15th for a permit for operation during the subsequent year.

***Du Pont registered trademark for its PVF film**

32 North Niagara Street
Tonawanda City, New York

May 6, 1964

E. I. Dupont Company
River Road
Tonawanda, New York

Attention: Mr. Herbert Knoll, Service Supervisor

Re: Application for Permit to
Dispose of Offensive Material
River Road
Town of Tonawanda, New York

Gentlemen:

In accordance with your conversation with Mr. Samuel G. Moscato of this department, we are enclosing two applications to cover operation of your disposal area.

Kindly fill out in duplicate and return the original to this office for processing.

Very truly yours,

James F. Stubbe,
District Supervisor

JFS:hh

enclosures 2.

CC: File ✓
Circ. File

April 29, 1964

TO: Mr. James F. Stubbe

FROM: S. G. Moscato

SUBJECT: E. I. Dupont Company Refuse Disposal
River Road
Town of Tonawanda
Interviewed: Mr. Herbert Knoll, Service Supervisor
Mr. Louis Marinella, Service Foreman
Date of Inspection - April 28, 1964

On April 28, 1964 an inspection of the above dump was made and Mr. Herbert Knoll, Service Supervisor, and Mr. Louis Marinella, Service Foreman, were interviewed relative to the above subject.

This dump is located in the rear of the plant on Kenmore Avenue. I was informed that all the industrial waste consisting of garbage, papers, cellophane, polyethelene, Tedlar, Bexar (co-products) and the foundry waste are dumped on these grounds. The garbage which is collected in dumpsters, and consisting mostly of coffee grounds, milk cartons, and empty cans, is picked up daily and taken to the dumps where it is burned in a cage. The cellophane is also burned. The remaining waste, consisting of Tedlar, Bexar, and foundry waste, is dumped into a pit and buried with a bulldozer.

The additional waste which is collected in the cafeteria is washed down into two disposal units; one of which is located in the kitchen and the other in the dish-washing room. Mr. Herbert Knoll stated that a man is stationed at the dump site during the time that it is in operation. However, I did not see him during this inspection. On questioning Mr. Enoll, he stated that he was out to lunch.

A hydrant with a hose station is available for the dump in case of fire. In addition to this they also have permission from the General Motors Company to use their hydrants, which are located closer to the dump~~s~~. Dupont Company also has a service building where a hose reel with 700 ft. of fire hose is also available. The dumping grounds are not enclosed, and Mr. Knoll was told that this will have to be done.

Mr. Knoll asked that they be allowed to continue to burn the cellophane because of the large amounts collected. They will bury the remaining wastes, etc. The prevailing winds are westerly, and smoke is blown into empty fields and lots.

SGMoscato:hh

CC: Circ. File

Priority 2 Site Name E. I. Dupont Co. Region 9

15019/01 County Erie

A

INITIAL EVALUATION OF INDUSTRIAL AND HAZARDOUS WASTE SITES

I. General Site Information

1. Site Location Shesidan Dr., Station B., Buffalo, NY 14207

2. Current owners ☐ or operators ☐ : __________

Address __________

Contact __________ Phone __________

3. Time during which site was used: 1921 to 1978

4. Type of Site: Industrial Disposal ☐ Mixed Disposal Area ☐

Drum Storage ☐ Lagoon ☐ Other (specify) ☐ inactive

5. Size of Site (approx.) __________ acres, and/or dimensions __________

6. Exposed waste: yes ☐ no ☐

II. Waste Characterization (See Section III for more details.)

1. Generator __________ Waste Types Dry "Tedlar" Waste Film

Composition __________ Total Quantity __________ Bulk ☐ Drum ☐

2. Generator __________ Waste Types "Corian" Sheet & Bowls

Composition __________ Total Quantity __________ Bulk ☐ Drum ☐

3. Generator __________ Waste Types Vexar

Composition __________ Total Quantity __________ Bulk ☐ Drum ☐

4. Generator __________ Waste Types Viaflow

Composition __________ Total Quantity __________ Bulk ☐ Drum ☐

Report prepared by: FM Phone __________

__________ Phone __________

III. Waste Stream Information

Waste Stream # 1

Generator

Name ____

Address ____

Contact ____ Phone ____

Hauler

Name ____

Address ____

Contact ____ Phone ____

Average Percent Solids ____ % pH range ____ to ____

Physical State: liquid ☐ , slurry ☐ , sludge ☐ , solid ☐ ,

other ☐ specify ____

Annual Volume 50,000# Total Volume ____ Bulk ☐ Drum ☐

Component Avg. Concentration (Wet ☐ or Dry ☐ Weight).

1. "Tedlar" ____ wt.% ☐ ppm ☐
2. ____ ____ wt.% ☐ ppm ☐
3. ____ ____ wt.% ☐ ppm ☐
4. ____ ____ wt.% ☐ ppm ☐
5. ____ ____ wt.% ☐ ppm ☐

Waste Stream # 2

Generator

Name ____

Address ____

Contact ____ Phone ____

Hauler

Name ____

Address ____

Contact ____ Phone ____

Average Percent Solids ____ % pH range ____ to ____

Physical State: liquid ☐ , slurry ☐ , sludge ☐ , solid ☐ ,

other ☐ specify ____

Annual Volume 5,000T Total Volume ____ Bulk ☐ Drum ☐

Component Avg. Concentration (Wet ☐ or Dry ☐ Weight)

1. "Corian" Sheet ____ wt.% ☐ ppm ☐
2. ____ ____ wt.% ☐ ppm ☐
3. ____ ____ wt.% ☐ ppm ☐
4. ____ ____ wt.% ☐ ppm ☐
5. ____ ____ wt.% ☐ ppm ☐

III. Waste Stream Information

Waste Stream # 3

Generator

Name __________

Address __________

Contact __________ Phone __________

Hauler

Name __________

Address __________

Contact __________ Phone __________

Average Percent Solids 100 % pH range _____ to _____

Physical State: liquid ☐ , slurry ☐ , sludge ☐ , solid ☑ ,

other ☐ specify __________

Annual Volume 150T Total Volume __________ Bulk ☐ Drum ☐

Component Avg. Concentration (Wet ☐ or Dry ☑ Weight).

1. Polyethylene or Polypropylene 100 wt.% ☐ ppm ☐
2. __________ __________ wt.% ☐ ppm ☐
3. __________ __________ wt.% ☐ ppm ☐
4. __________ __________ wt.% ☐ ppm ☐
5. __________ __________ wt.% ☐ ppm ☐

Waste Stream # 4

Generator

Name __________

Address __________

Contact __________ Phone __________

Hauler

Name __________

Address __________

Contact __________ Phone __________

Average Percent Solids 100 % pH range _____ to _____

Physical State: liquid ☐ , slurry ☐ , sludge ☐ , solid ☑ ,

other ☐ specify __________

Annual Volume 2-3 T Total Volume __________ Bulk ☐ Drum ☐

Component Avg. Concentration (Wet ☐ or Dry ☑ Weight)

1. Polyethylene 100 wt.% ☐ ppm ☐
2. __________ __________ wt.% ☐ ppm ☐
3. __________ __________ wt.% ☐ ppm ☐
4. __________ __________ wt.% ☐ ppm ☐
5.

IV. Owners/Operators (Specify) During Use

1. Name ______ Time Period ______ to ______

Address ______

Contact ______ Phone ______

2. Name ______ Time Period ______ to ______

Address ______

Contact ______ Phone ______

3. Name ______ Time Period ______ to ______

Address ______

Contact ______ Phone ______

V. Sketch of Site

U.S.G.S. Quadrangle ______

______ Lat. ______ Long.

(attach photocopy of appropriate area)

VI. Field Inspection

1. Type of Area in which site is located: Rural ☐ , Industrial ☐ , Residential ☐ , Commercial ☐ , Agricultural ☐ .

2. a. Distance to nearest dwelling (feet) ____________

   b. Number of dwellings within 500 feet ____________

3. a. Distance to nearest water body downgradient from site (feet) ____________

   b. Name of water body ____________

   c. Type of water body ____________

   d. Classification of water body ____________

4. a. Nearest public or private water supplies ____________
   (Indicate on attached map)

   b. Names, addresses, and phone numbers of home owners or water companies if available.

   ____

   ____

   ____

5. Approximate distance to groundwater (feet) 130'

6. Is site above or near a known aquifer? yes ☐ no ☐

7. a. Number of drums exposed ____________
   (attach appropriate information from any drum labels)

   b. Number or percent of drums filled with liquid ____________, sludge ____________, solids ____________, mixed ____________.

8. Describe other exposed waste material and estimate volume ____________

   ____

9. Leachate (estimate volume, flow direction, receiving watercourse) ____________

   ____

10. Soil Characteristics:

1. Underlying Soil

a) Description Inorganic Clay 65'; Rock 65'

b) Soil Classification

2. Cover Material

a) Description

b) Soil Classification

11. a. Topography: Hillside(slope) ☐ , Ravine ☐ , Flat ☐ .

b. Geological Terrain

12. Vegetation (note dead vegetation or lack of vegetation)

13. Is access limited (fencing)

14. Nearby industrial discharges (air or water)

SPDES or NPDES Permit yes ☐ no ☐

15. Odors

16. Eye, nose, or skin irritation during site investigation

17. Samples taken: yes ☐ no ☐ (attach protocol)

18. Other field notes

Field Inspection Performed By

Date

Photographs taken

VII. Sampling and Monitoring

VIII. Sources of Information (Include interviews, names, addresses, phone numbers)

IX. Involvement of Other Agencies

X. Other Remarks

Prior to 1962 – suphan process → dumped acids in pit which is now covered.

XI. Recommendations

1. *Minimum level of sampling to determine the hazards posed by materials at the site.*

2. *Enforcement action to abate problems at the site.*

3. *Containment actions to prevent further environmental threats at the site.*

4. *Comprehensive cleanup, or abatement of hazards posed by materials at the site.*

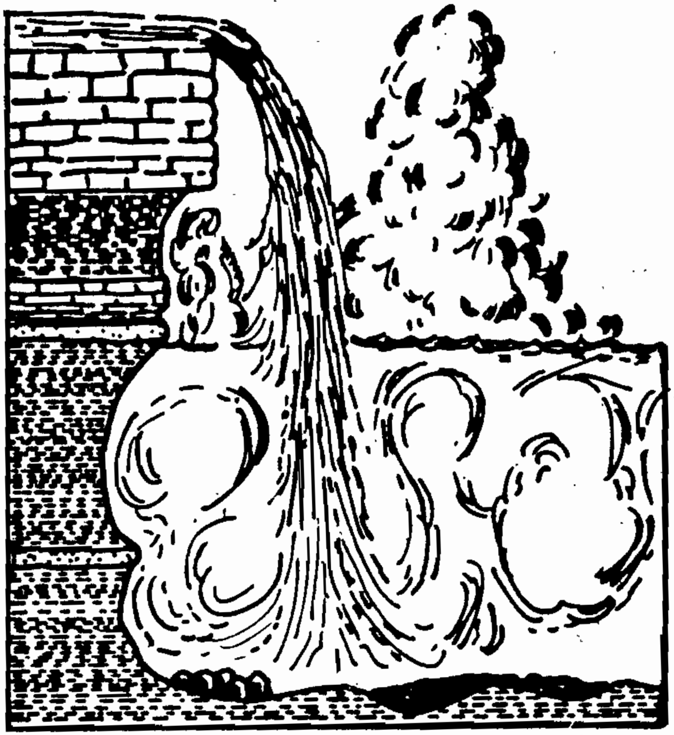
5. *Formal determination of Imminent Health Hazard by the State Health Department.*

6. *Other Recommendations*

[redacted]

GEOLOGY OF WESTERN NEW YORK

GUIDE BOOK



NEW YORK STATE GEOLOGICAL ASSN.
38th ANNUAL MEETING
1966

DEPARTMENT OF GEOLOGICAL SCIENCES
STATE UNIVERSITY OF NEW YORK AT BUFFALO
BUFFALO, N. Y.

C-36

E. J. Buehler, Editor

NEW YORK STATE GEOLOGICAL ASSOCIATION

38th Annual Meeting

April 29 - May 1, 1966

GUIDEBOOK

Geology of Western New York

Edward J. Buehler, Editor

Department of Geological Sciences
State University of New York at Buffalo

Additional copies are available from the permanent secretary of the New York State Geological Association: Dr. Kurt E. Lowe, Department of Geology, City College of the City University of New York, 139th St. at Convent Ave., New York, N. Y.

Throughout most of the subsurface and presumably along the outcrop belt as well, the Vernon may be subdivided into three parts. Significant facies changes occur. In all three divisions these changes involve the lateral replacement of red shale in the east by mixed red and green shale, then green or gray shale and dolomites, and finally dolomites with anhydrite and halite in the west.

Syracuse Formation

The Syracuse Formation of Clarke, 1903, has recently been redefined, described and traced along the Silurian outcrop belt by Leutze (1955, 1959). The name originally was proposed for the subsurface salt beds of the Salina Group, but it is now also applied to the associated dolomites, anhydrites and shales. Thus the formation can be recognized along the outcrop belt where the salt beds have been dissolved by ground water.

In Onondaga County, Leutze subdivided the Syracuse into five members, some of which are exposed in the standard reference section, a railroad cut near Manlius Center. These consist of gray shales and gray or brown dolomites with interbedded clay (leached salt beds) and gypsum. The formation is about 160 feet thick. Leutze discovered fossils in several horizons within the formation and assembled a collection of brachiopods, pelecypods, ostracodes, gastropods, cephalopods, and eurypterids. He was able to map the Syracuse Formation and to recognize its subdivisions eastward into southernmost Herkimer County but was unable to carry his detailed work west of Cayuga Lake where the formation is virtually unexposed.

In the vicinity of Buffalo, the Syracuse consists of dolomites and anhydrite but lacks significant beds of salt. It is about 100 feet thick and is not known to be exposed in the Niagara Frontier.

In the subsurface the Syracuse is a readily recognizable portion of the Salina Group but it cannot be subdivided into the five members distinguished by Leutze along the outcrop. The majority of the halite and anhydrite beds of the subsurface Salina Group occur in the Syracuse Formation. Thicknesses in excess of 1000 feet are attained in the center of the Salina basin.

Camillus Shale

The upper portion of the Salina Group in Onondaga County and eastward consists of a chunky green shale, unfossiliferous, with some red beds in southernmost Herkimer County. Leutze (1959) restricted the application of the name Camillus (Clarke, 1903) to this portion of the Salina. It is about 200 feet thick in the type area, somewhat thinner both east and west of there.

In the Niagara Frontier the Camillus is 80-100 feet thick and includes the O-atka beds of Chadwick (1917), formerly assigned to the overlying Bertie Formation. The Predominate lithology is a green shale, but dolomite, anhydrite and siltstone, also occur. Eurypterids have been reported from a dolomite bed near the top of the formation in

Chadwick's O-atka beds. This uppermost portion of the Camillus is exposed at Akron Falls, Indian Falls, Morganville and Oatka Falls. Another exposure of the Camillus is a small section along Murder Creek north of Akron.

At several localities along the Silurian outcrop belt there are underground mines for gypsum formed by conversion of the subsurface anhydrite of the Salina Group to gypsum through hydration by ground water. The National Gypsum Company has a mine at Clarence Center, the Bestwall Gypsum Company at Akron and the United State Gypsum Company at Oakfield. The stratigraphic position of the gypsum beds mined by these companies has, in the past, been assigned to the Camillus. They are located about 200 feet below the base of the Onondaga Limestone. In nearby gas wells, the Camillus is anhydritic but significant beds of anhydrite occur only in the Syracuse Formation, 150 to 200 feet below the Onondaga. Further study is needed but it appears that the gypsum mines may be in the Syracuse rather than the Camillus. The thickness of the Camillus in the subsurface appears to be quite uniform but the formation has several facies. Dolomite and anhydrite comprise significant portions of the Camillus in the center of the Salina basin; red shales become predominate in the east.

Bertie Formation

The type section of the Bertie Formation (Chapman, 1864) is located in Bertie township, Welland County, Ontario. In an abstract Chadwick (1917) subdivided the Bertie of western New York into four members, in descending order: Buffalo cement bed, Scajaquada shale and dolomite, Falkirk dolomite and O-atka shale (here included in the underlying Camillus). Chadwick later (see Clarke, 1918, p. 42) renamed the upper member Williamsville as the term Buffalo was preoccupied. The Bertie of western New York is everywhere underlain by the Camillus Shale and overlain, where complete sections are found, by the Akron Dolomite. Owing to the relief of a pre-Onondaga unconformity, however, exposures are found where the Onondaga Limestone directly overlies the Williamsville Member of the Bertie or some lower member. Chadwick was first to point this out.

The thickness of the Bertie Formation in western New York is uncertain because few exposures continue downward into the underlying Camillus Shale. It is believed to be about 50 feet thick where all members are present. Its thickness will, of course, vary from place to place depending upon the amount removed by erosion prior to deposition of the Onondaga Limestone. The contact of the Bertie with the overlying Akron Dolomite is gradational. Its contact with the underlying Camillus is much less clearly understood because of the lack of good exposures. Some authors (Grabau, 1901, p. 115) and Alling (1928, pp. 27-28) have suggested that this contact possibly is disconformable.

The Falkirk Member of the Bertie is composed of massive beds of dark gray dolomite, weathering yellowish brown, which are characterized by coarse conchoidal fracturing, a small marine fauna and a basal eurypterid horizon. Owing to its greater resistance the Falkirk commonly produces a waterfall where exposed in streambeds. Its thickness varies from 18 to 25 feet. The overlying Scajaquada Member consists of dark shales or blocky waterlimes, less resistant than the Williamsville above or the Falkirk below, and presumably contains more argillaceous material than those two members. It varies from 3 to 10 feet in thickness and, in southern Ontario, eurypterids occur near its base ("Bridgeburg horizon").

The Williamsville Dolomite, because it formerly was mined for natural cement in the vicinity of Buffalo, is perhaps the best known member of the Bertie. It consists of laminated, fine-grained dolomite, up to 5 or 8 feet thick, which weathers light gray. Its pronounced conchoidal fracture, among other criteria, serves to distinguish it from the overlying Akron Dolomite which has an irregular fracture. According to Monahan (1931, p. 379) most of the fossils, especially the eurypterids, of the Bertie Formation cited by Ruedemann (1925) and others have been obtained from the Williamsville Member.

The Bertie Formation is noted for its abundance of well-preserved eurypterids, most of which apparently were obtained from the upper or Williamsville Member. In addition to these, bryozoans, brachiopods, gastropods, cephalopods, ostracodes, and graptolites also have been found.

Exposures of the Bertie Formation and the overlying Akron Dolomite are fairly common in the Niagara Frontier region. Outcrops in Buffalo are located near the Main Street entrance to Forest Lawn Cemetery, in the storm sewer on East Amherst (old Bennett quarry), and in a New York Central Railroad cut between Kensington and Morris Avenues. East of the city important localities are in Ellicott Creek at Williamsville, in the Louisville Cement quarry near Clarence, at the falls in Akron Falls Park, at Indian Falls, at Morganville and along Route 19 and in Oatka Creek at North LeRoy.

Akron Dolomite

The highest rock unit of the Silurian in the Niagara Frontier is the Akron Dolomite (Lane and others, 1908). The type section is an outcrop in Murder Creek, at Akron, New York, where the formation is about 8 feet thick. Other exposures are cited in the discussion of the Bertie (except Indian Falls, Morganville and North LeRoy).

The Akron consists of gray to buff, mottled and banded dolomite, fine-grained and often pitted by the solution of fossil corals. The lower contact with the Bertie is gradational and difficult to identify. The upper contact with the Onondaga Limestone is a conspicuous disconformity broadly undulating, with occasional channels or "dikes" of sandstone or arenaceous limestone extending down into the underlying Akron (or Bertie where the Akron is absent). Although not an abundantly fossiliferous rock, the Akron is the most fossiliferous portion of the entire Cayugan Series in western New York. Its fauna includes corals, brachiopods, gastropods, cephalopods, and ostracodes. Eurypterids and graptolites also have been reported but are relatively rare.

The Akron Dolomite of western New York appears to be a continuation of the Cobleskill Limestone of Eastern New York. Doubts regarding the tracing and correlation of these units, particularly the Akron, across Ontario, Monroe and Genesee Counties persist despite the efforts of several stratigraphers (Schuchert, 1903; Hartnagel, 1903; Alling, 1928; Hoffman, 1949; Rickard, 1953; Leutze, 1959). In the subsurface it frequently is not possible to separate the Akron-Cobleskill from the underlying Bertie in sample logs because the lighologic differences are slight. However, where the Cobleskill is a fossiliferous limestone, the separation is more easily made. Radioactivity logs provide an additional means of differentiating these formations in some parts of the subsurface.

THE HAMILTON GROUP IN WESTERN NEW YORK

By Edward J. Buehler

State University of New York at Buffalo

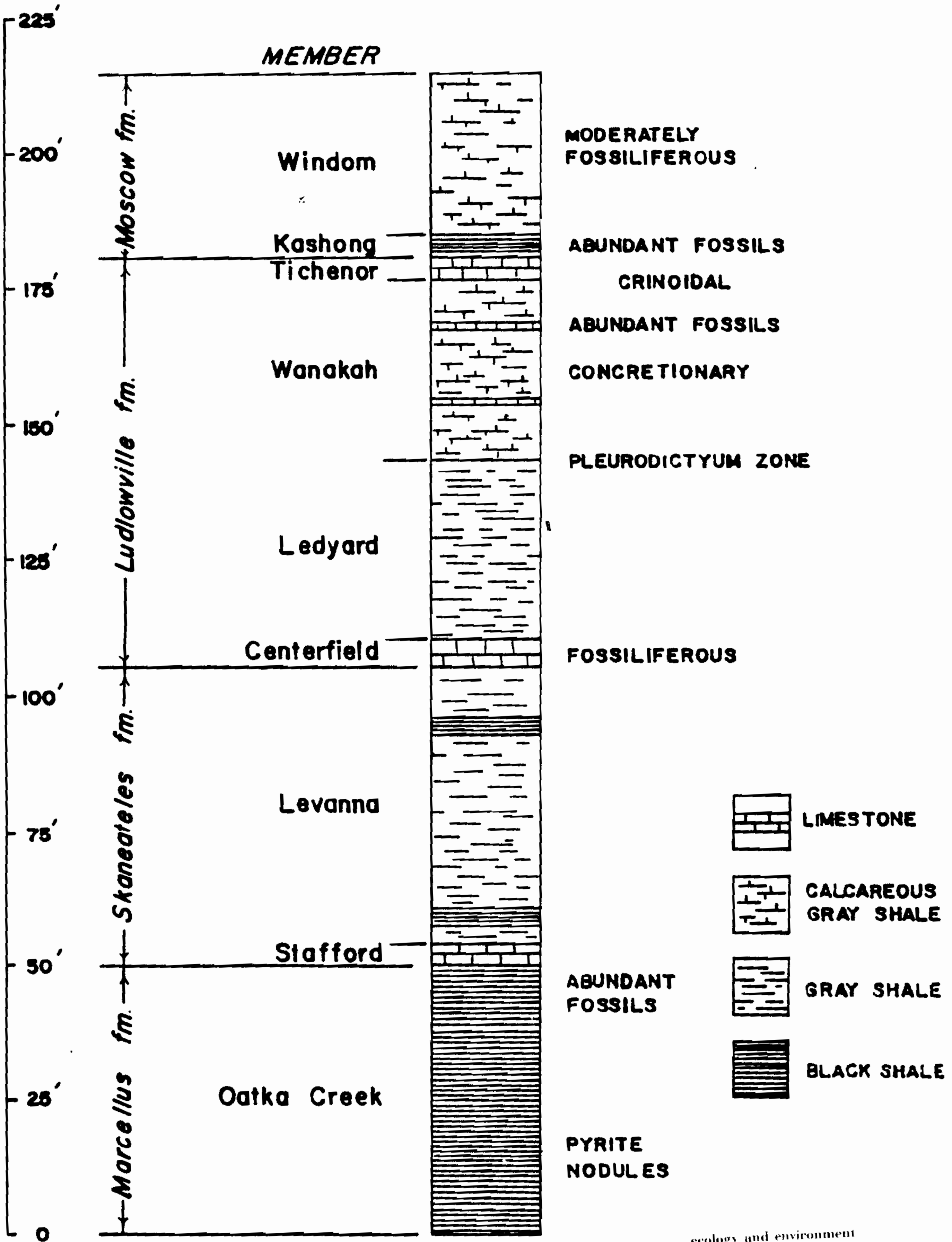
Circumstances which developed at the last minute left us without a paper on the Hamilton Group of Western New York. There was, of course, no intent to slight this most interesting and richly fossiliferous section of rock. Therefore, a column (fig. 1) a few notes and references are inserted here.

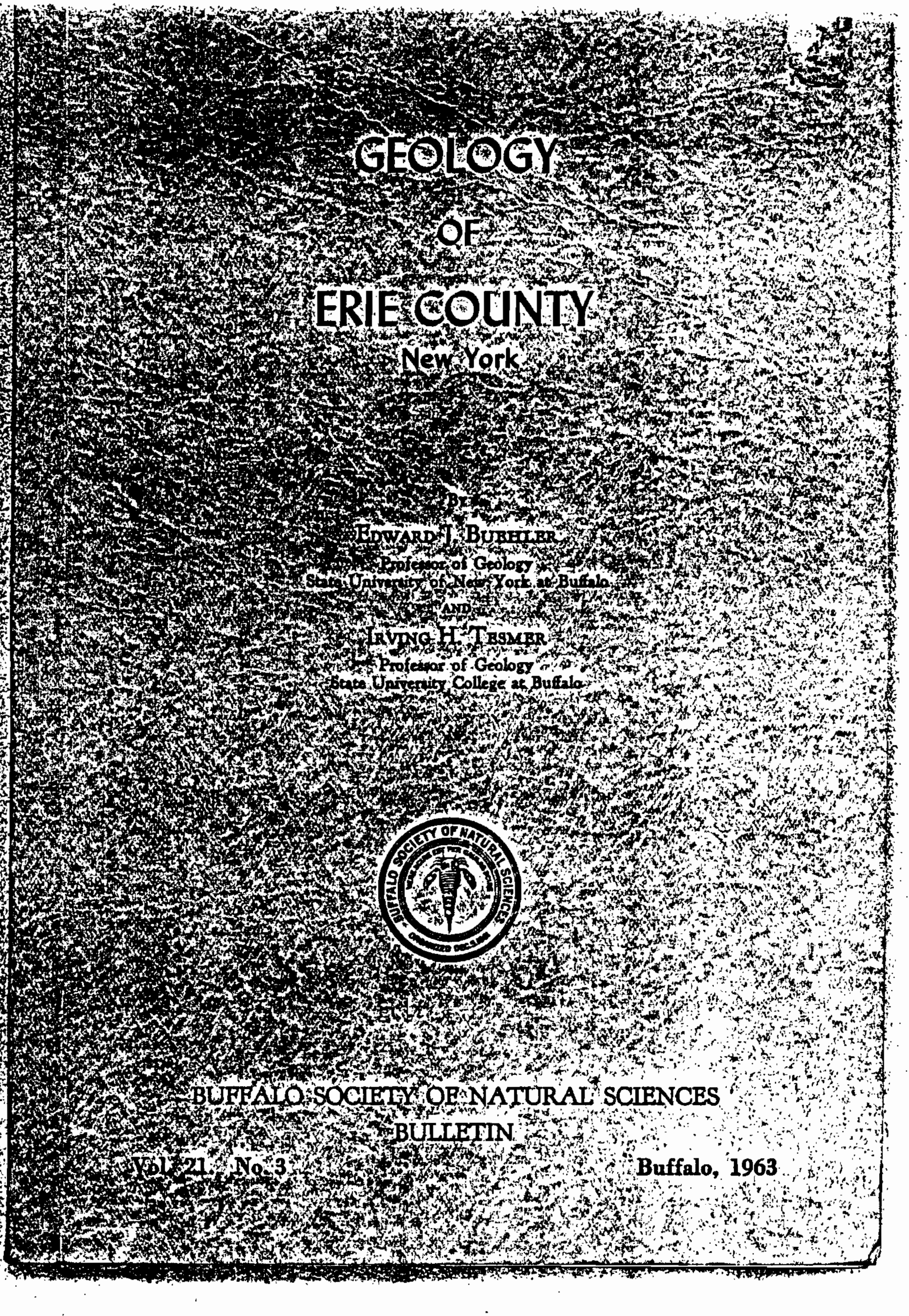
The two post-Hall classical works on the Hamilton are Grabau's (1898) Geology and Paleontology of Eighteen Mile Creek, and Cooper's (1930) Stratigraphy of the Hamilton Group of New York. deWitt (1956) describes the upper Hamilton of the Eden quadrangle. Buehler and Tesmer (1963) summarize the data on the paleontology and stratigraphy of the Hamilton group in Erie County. The chart "Correlation of the Devonian in New York State" by Rickard (1964) gives correlation across the state and the depositional phases as well as other stratigraphic information.

The Hamilton sediment of western New York was deposited at the western, seaward extremity of the Catskill Delta. This facies situation is described, with varying degrees of accuracy, in every textbook on stratigraphy and historical geology and should be familiar to all. The Marcellus and Skaneateles Formations are black and bluish-gray shale with thin limestone beds. They are separated by the Stafford Limestone, regarded as the base of the Skaneateles. Large pyrite nodules are common near the base of the Oatka Creek Shale and the brachiopod *Leiorhynchus limitare* is abundant near the top. Portions of these units, especially near the top of the Oatka Creek, are fossiliferous; other are not.

The Ludlowville and Moscow Formations consist of calcareous gray shale which may weather to a clayey consistency. Concretionary layers and thin limestone beds are common. Two of these limestones, the Centerfield and Tichenor are used as key beds in correlation and subdivision of the Hamilton Group. The upper Hamilton, especially the upper part of the Ludlowville, is richly fossiliferous. The fauna is predominantly one of corals, bryozoans, and brachiopods. Some of the particularly abundant species are *Stereolasma rectum, Athyris spiriferoides, Mucrospirifer mucronatus,* and *Favosites, hamiltoniae.* The tabulate *Pleurodictyum americanum* is common at the base of the Wanakah shale and the brachiopod *Ambocoelia umbonata* is abundant at the base of the Moscow shale. Some beds contain common specimens of the trilobite *Phacops rana.* The Tichenor is a crinoidal limestone. Molluscs, ostracodes and tentaculitids are also common in the upper Hamilton and there is a modest amount of plant material. Many of the fossils are extremely delicate and show little or no evidence of transportation. The fossiliferous pyrite (?) concretions occur in the Ledyard member. The Middle Devonian is separated from the Upper Devonian by the lensatic Leicester Pyrite.

Hamilton Group of Western New York





GEOLOGY

OF

ERIE COUNTY

New York

BY

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AND

IRVING H. TESMER
Professor of Geology
State University College at Buffalo

BUFFALO SOCIETY OF NATURAL SCIENCES
BULLETIN

Vol. 21, No. 3 Buffalo, 1963

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FIGURES

PLATES

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Surficial Geology

PHYSIOGRAPHY

Both the altitude and relief of the land surface tend to increase from north to south. The lowest elevation is 565 feet above sea level at the northern tip of Grand Island and the highest, 1,945 feet above sea level, is in Sardinia township, southeastern Erie County. On the basis of physiography the county may be divided into three parts: the flat Lake Tonawanda plain in the north, followed by the Lake Erie plain, and the Allegheny plateau in the south.

The Onondaga escarpment is a conspicuous topographic feature. This north-facing cliff, formed by the outcropping northern edge of the resistant Onondaga Limestone and Upper Silurian dolostone, can be traced from Buffalo eastward through Akron. In Erie County it seldom exceeds 40 feet in height. Some of the streams which cross the escarpment form waterfalls, but many of the smaller streams disappear in fissures and caves and reappear on the plain to the north.

Between the Onondaga escarpment and the parallel Niagara escarpment to the north is the Lake Tonawanda plain, so named because in late Pleistocene time it was occupied by now extinct Lake Tonawanda. This plain actually is a shallow east-west trending trough, 10 to 15 miles in width, which is drained along its axis by Tonawanda Creek.

The Lake Erie plain, so called because it was covered by glacial lakes ancestral to the present Lake Erie, is an area 6 to 12 miles in width between the Onondaga escarpment and the hilly region to the south. This plain is smooth or gently rolling and rises in elevation toward its southern border where much of it is 900 to 1,000 feet above sea level.

The southern third of the county lies within the maturely dissected Allegheny plateau, the northern border of which is sometimes referred to as the Lake Erie or Portage escarpment. The hilly topography of this region appears to be largely the result of stream erosion for there are no appreciable folds or faults. Glacial erosion has modified the shape of some of the larger valleys and has produced a general rounding of the topography. The amount of glacial drift is commonly so great as to obscure the topography of the underlying bedrock.

Erie County has no large lakes other than bordering Lake Erie. The major streams, all of which flow west or northwest into Lake Erie, are Tonawanda, Ellicott, Cayuga, Buffalo, Cazenovia, Eighteenmile, and Cattaraugus Creeks. Tonawanda Creek, part of which coincides with the Erie Barge Canal, flows over the flat bottom of extinct Lake Tonawanda. Ellicott Creek crosses the Onondaga escarpment at Williamsville where it forms a waterfall, as does Murder Creek at Akron. Cayuga, Buffalo, Cazenovia, and Eighteenmile Creeks flow northwest from the hills of the Allegheny plateau to the Lake Erie plain and cut post-glacial gorges which expose thick sections of Middle and Upper Devonian rock. Cattaraugus Creek flows essentially westward, part of it through the picturesque gorge known locally as Zoar Valley.

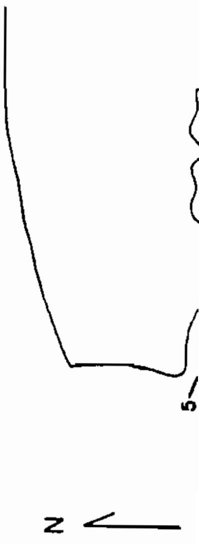
PLEISTOCENE GEOLOGY

INTRODUCTION

The surficial geology of Erie County consists largely of the effects of the Pleistocene glaciation (Fig. 2). The Pleistocene geology of western New York provides a fertile field for research, not only from the scientific viewpoint of understanding more of this last phase of geologic history, but also from the practical aspect of engineering geology and sand and gravel resources.

Following is a list of the glacial and interglacial stages of the Pleistocene Epoch. Although erosion by earlier glacial stages undoubtedly played a role in shaping the topography of Erie County, all the identified features date from the Wisconsin Stage, and a more detailed breakdown of that stage is provided. The most conspicuous of these features are the moraines deposited by the retreating ice sheet and the strand lines of the late Wisconsin lakes. Hough (1958, pp. 90 - 109) describes the subdivisions given below:

- Wisconsin Glacial Stage
  - Valders Substage
  - Two Creeks Interval
  - Mankato (Port Huron) Substage
  - Cary Substage
  - Tazewell Substage
  - Iowan Substage
  - Farmdale Substage
    - Sangamon Interglacial Stage
- Illinoian Glacial Stage
    - Yarmouth Interglacial Stage
- Kansan Glacial Stage
    - Aftonian Interglacial Stage
- Nebraskan Glacial Stage



Erie-Niagara Basin

Ground-Water Resources

ERIE-NIAGARA BASIN REGIONAL WATER
RESOURCES PLANNING BOARD

THE NEW YORK STATE WATER RESOURCES COMMISSION

CONSERVATION DEPARTMENT • DIVISION OF WATER RESOURCES

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
in cooperation with
THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3
1968

GEOLOGY AND TOPOGRAPHY

The Erie-Niagara basin is underlain by layers of sedimentary bedrock which are largely covered with unconsolidated deposits. Descriptions of the various bedrock units are given in figure 2. The bedrock consists mainly of shale, limestone, and dolomite; the Camillus Shale contains a large amount of interbedded gypsum. All the bedrock units were built up by fine-grained sediments deposited in ancient seas during the Silurian and Devonian Periods and, therefore, are bedded or layered. The dip of the rocks (inclination of the bedding planes) is gently southward at from 20 to 60 feet per mile, but the average dip is between 30 and 40 feet per mile. The dip is so gentle that it is hardly perceptible in outcrops.

The unconsolidated deposits are mostly glacial deposits formed during Pleistocene time about 10,000-15,000 years ago when an ice sheet covered the area. The glacial deposits consist of: (1) till, which is a nonsorted mixture of clay, silt, sand, and stones deposited directly from the ice sheet; (2) lake deposits, which are bedded clay, silt, and sand that settled out in lakes fed by the melting ice; and (3) sand and gravel deposits, which were laid down in glacial streams. The glacial sand and gravel deposits are of both the ice-contact and outwash types, as will be explained later in the report. The glacial deposits generally are less than 50 feet thick in the northern part of the basin. They are considerably thicker in some valleys in the southern part and reach a maximum known thickness of 600 feet near Chaffee. Other unconsolidated deposits are alluvium formed by streams in Recent times and swamp deposits formed by accumulation of decayed plant matter in poorly drained areas.

Relief of the present land surface is due to preglacial erosion of the bedrock and subsequent topographic modification by glaciation. In contrast to the southward dip of the rocks, the land surface rises to the south largely because preglacial erosion was more vigorous in the northern part of the basin. The shale in the southern part of the basin is somewhat more resistant to erosion than the rocks in the northern part of the basin but not significantly so. Figure 3 shows the relationship of the topography and rock structure and delineates the two topographic provinces of the basin: the Erie-Ontario Lowlands and the Appalachian Uplands. The rocks crop out in belts which trend generally east-west. The bedrock geologic map, plate 2, shows that the outcrop belts bend around to the southwest near Lake Erie. They assume this direction mainly because relatively intense erosion in the Erie-Ontario Lowland near Lake Erie has exposed the rock at lower elevations than farther east. The Lockport Dolomite and the Onondaga Limestone, because they are relatively resistant to erosion, form low ridges in the northern part of the basin. Tonawanda, Murder, and Ellicott Creeks descend the escarpment of the Onondaga at falls and cataracts.

In the hilly southern half of the basin (the Appalachian Uplands), preglacial valleys, deepened by glacial erosion, are cut into the shale. The valleys are partly filled with glacial deposits so that some of the present streams flow 200 to 600 feet above the bedrock floors of the valleys as shown in figure 3.

DUPONT

DEC
PUBLICATION

Comparison of 1981-82 and 1985-86 Toxic Substance Discharges to the Niagara River

August 1987

recycled paper

Operational changes were made at the facility since the DEC 1981-82 sampling which affect the quality characteristics of the wastewater discharge. The greatest impact was from cessation of the foundry discharge which formerly contributed wastewater containing phenols, cyanides and metals. Additionally, onsite painting and plating of engine parts was greatly reduced. Seventy-five percent of this work is now being performed prior to delivery to the assembly plant.

<u>E.I. du Pont de Nemours & Company,(Tonawanda Plant)</u> - This plant manufacturers polyvinyl fluoride film and simulated marble sheets, sinks and monolithic sink/countertop units. Du Pont has their own river water intake and rapid sand filtration plant that provides treated water for process, sanitary purposes and about 2.5 MGD for cooling.

The analytical results from the DEC 1985-86 compliance sampling indicated no EPA priority pollutants at or above cutoff criteria. The loadings for this facility as reported for the 1981-82 sampling in the Niagara River Toxics Committee Report were in error. Flow data used in the loading calculations were an order of magnitude too high. All parameters at that time were below the cutoff criteria.

<u>Dunlop Tire & Rubber Corporation</u> - This facility in the Town of Tonawanda manufactures motor vehicle tires. The results of the DEC 1985-86 sampling at or above cutoff levels are shown along with the 1981-82 data as follows:

Parameter	1981-82 lb/day	1985-86 lb/day
Lead	8.2	-
Nickel	1.0	-
Zinc	1.0	-

REPORT OF

The Niagara River Toxics Committee

OCTOBER 1984

REPORT TABLE OF CONTENTS

1.1 Pollution in the Niagara River

On its route from Lake Erie to Lake Ontario, the Niagara River passes through a complex of steel, petrochemical, and chemical manufacturing industries. The Niagara Frontier's proximity to a source of cheap electrical power and water for use in industrial processing has caused it to become a highly industrialized area, particularly on the U.S. side.

Historically, decisions about the development of the Niagara Frontier have been based solely on economic factors, such as the creation of jobs and the production of cheaper materials. These decisions have proven to be the cause of environmental problems both in the Niagara River and the surrounding area.

More recently, environmental degradation and its impact on human health has become a pervailing consideration in decisions regarding use and management of the Niagara River. Over the last decade, high levels of bacteria, phenols, oil, iron, phosphorus, chloride, mercury, and color have been reduced significantly.

Currently, toxic substances and their effects on human health and the ecosystem are being focussed on. Major toxic waste disposal sites have been identified along the Niagara River corridor, and toxic substances have been measured in the effluents of industrial and municipal facilities discharging into the river.

With increased research, the link between the discharge of toxic substances into the Niagara River and the subsequent effects on the ecosystem has become more clear. In some cases, conditions in Lake Ontario can be attributed directly to substances from the Niagara River; the occurrence of mirex and dioxin in Lake Ontario fish is an example of such a direct relationship. Certain species of fish from specific areas of the lake are banned for commercial fishing as a result of mirex and PCB levels, attributable, in part, to Niagara River contaminants. In other cases, the linkage is less direct but nonetheless real; chemicals originating in the Niagara River combine with other sources to Lake Ontario to contaminate the water, sediment, and biota in the lake.

The presence of toxic chemicals in the Niagara River is not new; these substances have probably been in the river for years. The development of more sophisticated analytical equipment and methodology has led to greater detection capability, enabling scientists to find chemicals at very low concentrations. Unfortunately, the ability to detect these compounds has outstripped our ability to correlate their concentrations with direct adverse effects on human health and the environment.

Existing long term data show a decline in many contaminants, and, for the chemicals for which drinking water standards exist, monitoring shows that they are within current Canadian and United States limits. The development of drinking water standards is an on-going process, however, and there are chemical compounds presently being identified in the Niagara River for which no standards have as yet been established.

Many members of the public feel that there has been a lack of government concern and action in assessing and solving the problems in the Niagara River. In fact, pollution in the Niagara River has been a major concern of federal, state and provincial governments since the early 1950's.

Millions of dollars have been, and are continuing to be spent by government and industry in implementing clean-up programs, determining the effectiveness of river clean-up programs, and identifying additional contamination sources requiring action. Significant progress has already been made in alleviating the sources of many of the earlier problems, largely through the control of municipal and industrial waste discharges.

A continuing effort is now being directed at solving the more complex problems of toxic substance contamination in the Niagara River. In many cases, the scientific basis for understanding the environmental and human health significance of these chemical compounds, either individually or in combination, does not exist and will have to be developed. This is by no means an easy or inexpensive task, nor can it be accomplished in a short time frame. In the mean time, responsible Canadian and U.S. agencies have accepted the premise that they will have to make decisions regarding the control of toxic substances in the absence of all the evidence that might be scientifically desirable.

In summary, the occurrence of toxic chemicals in the Niagara River is a major public concern in both countries. While much has been accomplished, toxic substances remain a problem. The task is to assess what is there, identify the sources, implement additional appropriate abatement strategies, and monitor the effectiveness of these strategies.

1.2 The Niagara River Toxics Committee

The mutual concern of both Canadian and United States environmental agencies regarding the water quality of the Niagara River resulted in a decision to cooperate in a joint investigation of toxic chemicals entering the Niagara River. There had been previous investigations and reports on water quality in the river; however, no investigation had attempted a coordinated study on toxic substances pollution. In February, 1981, the Niagara River Toxics Committee (NRTC) was established to oversee and coordinate such a program. The committee consisted of representatives from:

- Environment Canada
- Ontario Ministry of the Environment
- United States Environmental Protection Agency
- New York State Department of Environmental Conservation

The Committee was co-chaired by representatives of Environment Canada and the New York State Department of Environmental Conservation. Funding for the investigation was provided by the four cooperating agencies.

The Niagara River Toxics Committee had three objectives:

1. Identify sources of toxic pollutants entering the Niagara River.
2. Recommend control programs where necessary.
3. Recommend long term water monitoring programs for the Niagara River that would allow evaluation of the effectiveness of control programs.

1.2.1. Project Activities

One of the primary functions of the NRTC was to integrate ongoing investigative programs along the river. At the program's inception, agencies on both sides of the border were to a large extent "locked in" to planned activities. As a result, the Niagara River Toxics Project consolidated a series of sub-projects that had been individually designed to fulfill certain specific agency objectives. A review of these ongoing activities identified specific areas with deficiencies or gaps in data. To address these concerns, various sub-project activities were augmented and others developed specifically for this study within the limits of available funding.

As a result of these projects, over 3000 water samples and 135 bottom sediment samples were collected for analysis. Biotic life sampled and analyzed included Spottail Shiners, Cladophora, caged freshwater clams, and sports fish.

Both water and suspended sediment samples were collected at the Lake Erie input to the river and at the outflow to Lake Ontario. This allowed an assessment to be made on the contribution of 52 substances to the Niagara River and the river's contribution to Lake Ontario. The discharges to the river and its tributaries from the major industries and municipal treatment plants were sampled to estimate the relative loading of toxic chemicals to the river from these sources. Fifty-five industries and fourteen municipal plants on both sides of the river were sampled and the samples analyzed for a wide range of chemicals.

An attempt was made to estimate the impact of landfills on the river. All landfills within three miles of the river on the U.S. side (164 sites) and all landfills within the Niagara River drainage basin on the Canadian side (17 sites) were investigated. Wells were sunk to bedrock at eleven locations on the U.S. side to intercept and sample area-wide groundwater.

Over 40 storm sewers were sampled to assess chemical transport to the river by this route.

The information on toxic substances from these studies is described in considerable detail in the report that follows. This information, combined with data from previous studies on the river, was the basis for the conclusions and recommendations in this report.

In addition, a number of Canadian research projects were carried out at the outlet of the Niagara River and adjacent parts of Lake Ontario to develop a historical picture of toxic chemical entry into Lake Ontario. Information from these studies has been published separately in the Journal of Great Lakes Research (Volume 9(2), 1983).

1.2.2 Data Quality Review

After the project was underway the Niagara River Toxics Committee became concerned with the comparability of data generated by different laboratories. To assist in assessing the numerous data sets, the Committee formed the Data Quality Sub-committee made up of participating agency laboratory and quality assurance staff who had not been involved in planning or carrying out the Project. This group was charged with evaluating the sampling and analytical procedures used in each of the sub-projects and advising the Committee on the results of their evaluation. The sub-committee was also requested to make recommendations to assure that quality data would be collected in any long-term monitoring program recommended by the Niagara

River Toxics Committee. The Sub-committee findings and recommendations are contained in a report which has been published separately[1]. Data quality discussions are included in all appropriate chapters of this report.

1.3 The Niagara River - Background and Overview

1.3.1 General Description

The 58 kilometre (37 mile) Niagara River, with an average flow of 5,700 cubic metres per second (cms) or 200,000 cubic feet per second (cfs), connects Lake Erie to Lake Ontario. Divided into the upper and lower reaches by Niagara Falls, it provides 83 percent of the total tributary flow to Lake Ontario. The river drains an area of about 227,000 square kilometres (88,000 square miles). Between Lake Erie and Lake Ontario, the river drops about 100 metres (328 feet) with about one-half of the drop occurring at Niagara Falls.

For both Canada and the United States, the Niagara River provides municipal and industrial water supplies and a source of power generation, commerce, recreation, and tourism.

As a source of municipal drinking water, it serves a combined Canadian/United States population of more than 400,000 people. The City of Buffalo municipal water plant, which obtains water at the junction of Lake Erie and the Niagara River, services an additional 530,000 people. The river, in return, receives the treated waste from these same populations.

From Lake Erie to Strawberry Island (off the southern tip of Grand Island), a distance of about eight kilometres (5 miles), the Niagara River drops about two metres (6 feet). At Strawberry and Grand Islands, the river divides into two channels, the Chippawa Channel and the Tonawanda Channel, located west and east of Grand Island, respectively.

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[1] Niagara River Toxics Committee, Data Quality Sub-committee, <u>Final Report to the Niagara River Toxics Committee</u>, March, 1984.

The Chippawa Channel is approximately 18 kilometres (11 miles) long and carries about 57 percent of the total river flow, while the Tonawanda Channel is about 24 kilometres (15 miles) long and carries the remaining portion of the river flow. During the navigation season (April/May through November/December), the New York State Barge Canal withdraws water from the Tonawanda Channel at Tonawanda, New York and discharges it into Lake Ontario at several points in the State of New York. Average diversions by the Barge Canal in recent years during the navigation period have been about 30 cms (1100 cfs).

At the north end of Grand Island, the Chippawa and the Tonawanda Channels unite to form the Chippawa-Grass Island Pool. The fall between Strawberry Island and the Pool is about one metre (3 feet).

In 1950, Canada and the United States signed the Niagara River Treaty to preserve the scenic spectacle of Niagara Falls, and to make more efficient use of the Niagara River for power generation purposes. To fulfill the objectives of the Niagara River Treaty, Ontario Hydro and the New York Power Authority constructed a control structure at the lower end of the Chippawa-Grass Island Pool. The structure consists of eighteen gates and extends from the Canadian shore part way across the river. It is operated by the two power entities under the direction of the International Joint Commission's International Niagara Board of Control.

The Niagara River Treaty requires that a minimum flow of 2830 cms (100,000 cfs) be maintained over the Falls during the daylight hours of the tourist season (April through October). At all other times, the minimum required flow over the Falls is 1410 cms (50,000 cfs). The control structure permits a relatively quick change over from daylight to night-time flow (and vice versa) during the tourist season. It also regulates the water level in the Chippawa-Grass Island Pool to facilitate power diversions within limits established by the Niagara Board. The present procedure requires that the water level in the Pool be maintained as nearly as may be practicable to its long-term average elevation of 170.99 metres (561 feet) . The operation of the control structure has a negligible effect on the outflows of Lake Erie.

The Canadian plants include the Canadian Niagara, Ontario Power, and Sir Adam Beck I and II Power Plants. Total Canadian diversion capability is about 2350 cms (84,000 cfs). The Robert Moses Niagara Plant is the only plant on the Niagara River in the United States and has a diversion capacity of about 3115 cms (110,000 cfs). Each of these power plants withdraws water from the upper Niagara River and discharges it downstream of Niagara Falls. During the tourist season, the additional water made available for power purposes during night-time hours is diverted and stored in the pump-storage reservoirs and released during the daylight hours when the power demand is high. This is also the case during the non-tourist season, when the additional water is available on a continuous basis. The excess water is stored during periods of lower energy demand, such as nights and week-ends, and released during periods of high energy demand. Thus, there is a persistent within-the-day variation in flow in the lower Niagara River between the Falls and Queenston, Ontario, due to discharge from these plants.

At Niagara Falls, water drops about 56 metres (182 feet) over the Falls into the Maid-of-the-Mist Pool. In the next five kilometres (3 miles), the river drops about 23 metres (75 feet) through the Whirlpool Rapids. The fall in the 11 kilometre (6 mile) reach from the foot of the Whirlpool Rapids to Lake Ontario is about 0.2 metres (0.6 feet).

1.3.2 Local Inflows and Outflows

1.3.2.1 Surface Water

The flow of the Niagara River between Buffalo and Queenston is increased by the local inflow from streams tributary to the upper river and by the water diverted into the Welland River from the Welland Canal. It is reduced by the diversion of the New York Barge Canal, which has an average flow of about 30 cms (1100 cfs) during the navigation season. Local tributaries generally have a very mild slope and small drainage areas and, as a result, their flows are not large except during times of heavy runoff. The flow of water diverted to the Welland River from the Welland Canal is about 20 cms (700 cfs). The flow al the mouth of the Welland River (located in the Chippawa-Grass Island Pool) has been reversed as a result of the diversion by the Beck Power Plant and is discharged by the Beck Plant into the lower river. Figure 1.1 in schematic form shows the complete flow regime between Lake Erie and Lake Ontario.

1.3.2.2 Groundwater

The geologic zones of the Niagara Frontier are the result of a succession of sedimentary deposits. The relatively flat formations dip to the south-southeast at a rate of about 6 metres per kilometre or 30 feet per mile. The formations cut across the Niagara River at almost 90° and are essentially the same latitude on the Canadian and U.S. sides of the river.

The oldest deposit in the region is the Queenston Shale. This Shale is overlain by a series of sandstone, shale, and calcareous deposits, including the Lockport and Guelph formations. The transition between the Queenston Shale and overlying deposits is marked by the Niagara Escarpment. The overlying deposits farther to the south are limestone.

Throughout the region, the bedrock is overlain by clay, silt, sand, or mixtures thereof. On the Canadian side, the thickness of the overburden generally decreases from north to south, varying from 30 metres (98 feet) thick at Niagara-on-the-Lake to as little as two metres (6 feet) at Fort Erie. On the U.S. side, the overburden thickness increases from approximately 3.5 metres (10 feet) in the Niagara Falls area to about 20-25 metres (65-80 feet) in the Buffalo area.

In most cases the zone between the overburden and the bedrock is not distinct. Rather it is a transition zone consisting of unconsolidated overburden and highly fractured or weathered bedrock. In general terms, the

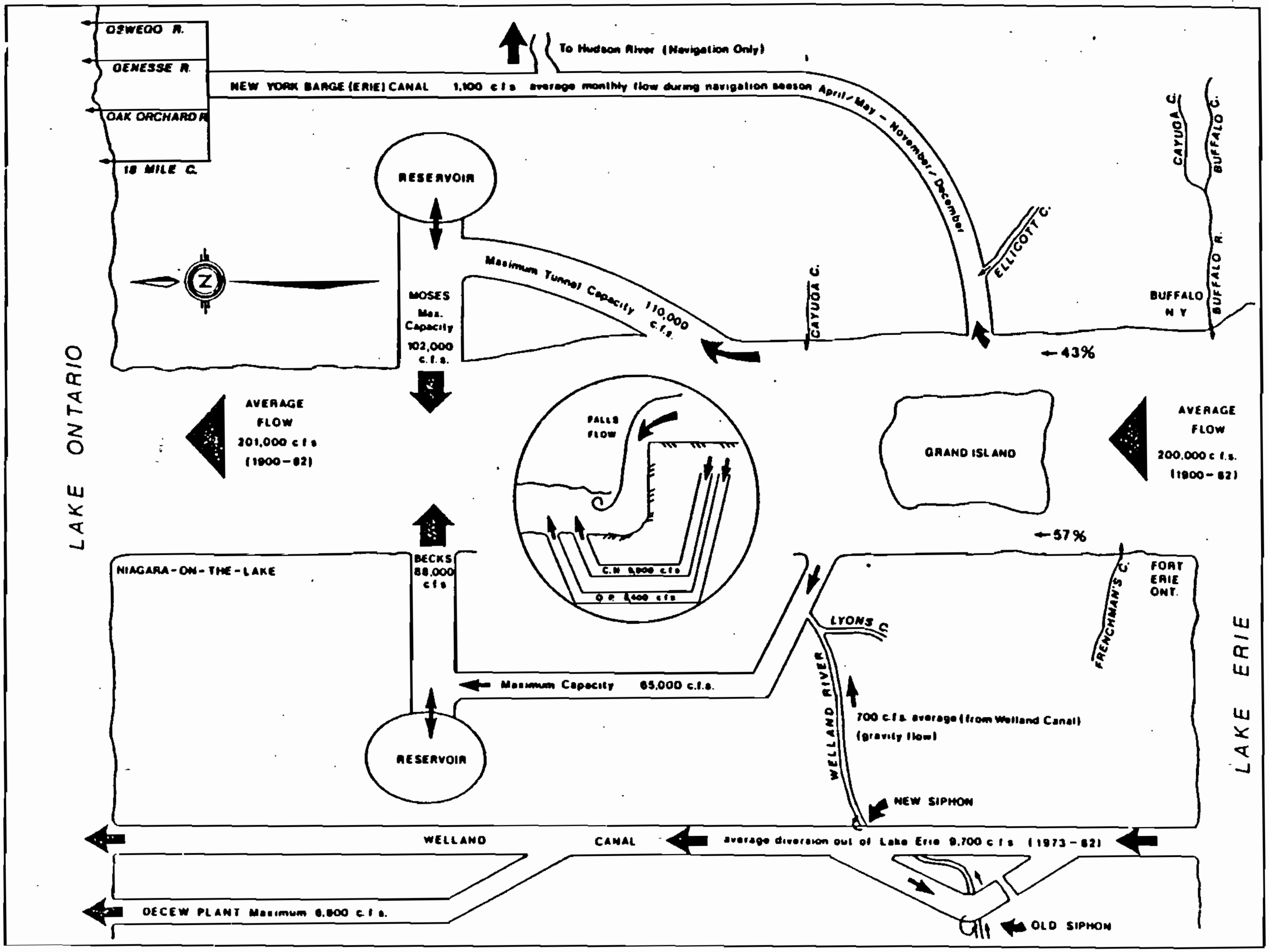

FIGURE 1.1 SCHEMATIC DIAGRAM SHOWING FLOWS AND HYDRO-ELECTRIC CAPACITIES OF THE NIAGARA RIVER, WELLAND CANAL, AND NEW YORK BARGE CANAL

upper aquifers of the region will be found in the unconsolidated overburden and upper fractured portion of the bedrock. On a macro scale, the groundwater or aquifer flow patterns tend to follow those of surface water courses.

The hydrologic properties of the bedrock aquifers vary considerably. The rate at which the water moves through an aquifer can vary up to three orders of magnitude within the region. Generally, the limestones and dolomites tend to be the most permeable, especially in their highly weathered and solutioned zones. The shales are inherently much less permeable, but in some areas, especially near the Niagara River, horizontal bedding plain fractures and vertical pressure fractures allow for some groundwater movement in this zone.

1.3.3 River Inlet Conditions

A rock ledge at the head of the Niagara River acts as a natural weir which controls the flow of Lake Erie into the Niagara River. Water entering the Niagara River from Lake Erie is influenced by circulation patterns in the lake.

In the central and eastern basins of Lake Erie, circulation patterns during the open water period are largely created by the wind, which blows parallel to the lake axis (Figure 1.2). In the shallow areas close to the shore, the water moves in the same direction as the wind, creating a predominant shoreline current. The larger water mass in the deep interior basin is less affected by the wind than water in the shallow zones. As a result, currents are many times weaker than shoreline currents, and move against the wind.

In the eastern basin, the strong eastward transport along the shore is followed by a compensating westerly return flow. Since only about one-tenth of the eastward transport leaves Lake Erie through the Niagara

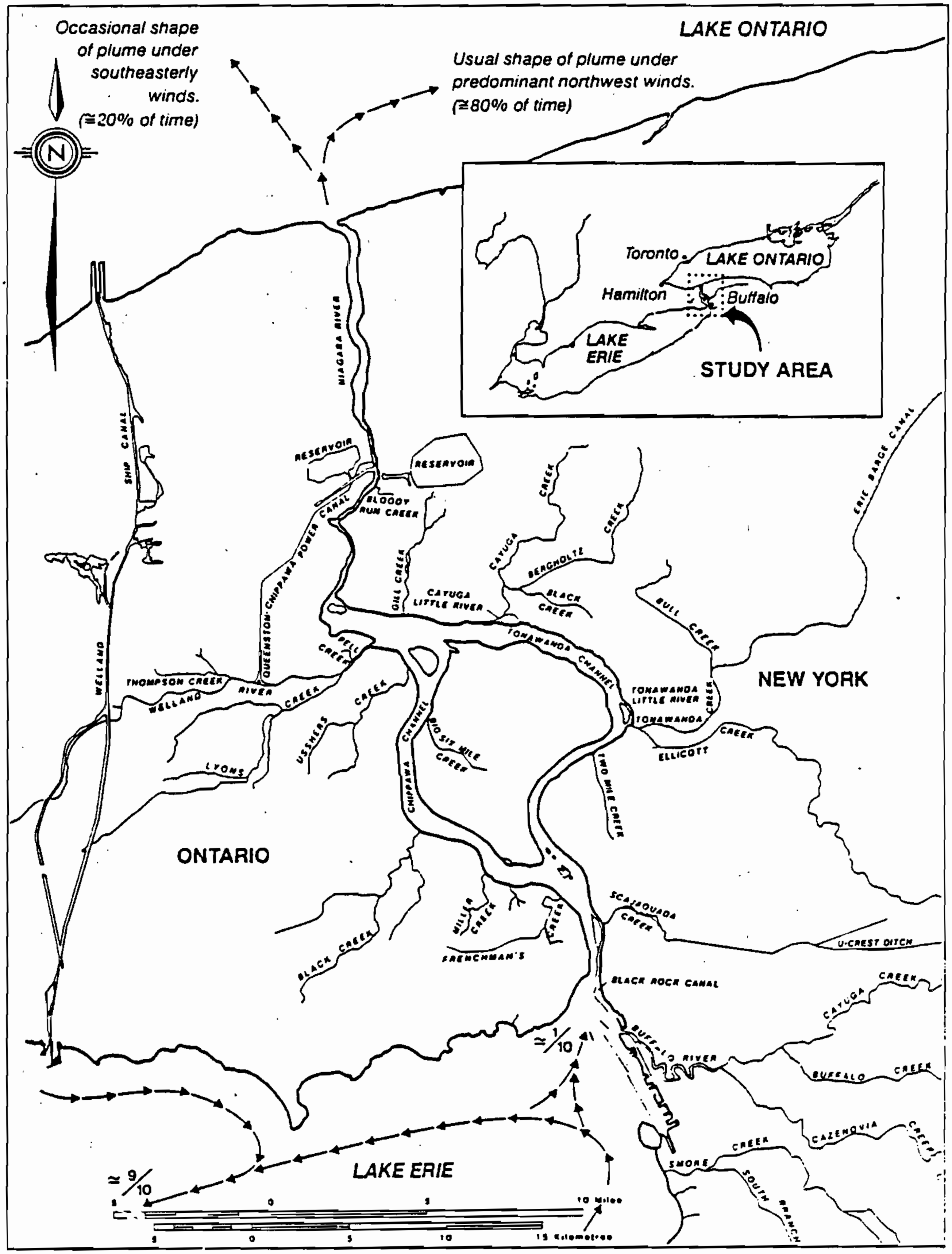

FIGURE 1.2 INLET/OUTLET CONDITIONS OF THE NIAGARA RIVER

River, most of the eastward flowing water returns in the deep westerly current.[2]

1.3.4 River Outlet Conditions

Vertical profiles taken at locations along the outlet plume edge in a band that extended from river water through the interface to lake water showed that within the first 2 - 3 km (1 - 2 miles) from the mouth of the Niagara River, the flow is hydraulically controlled, and the dynamics of the plume are jet-like (Figure 1.2). After this stage, the plume is directed eastward by lake circulation and prevailing winds, and is eventually caught up in the strong easterly coastal current. Horizontal velocity fields computed from a hydrodynamic model confirm this general picture of Niagara River plume behavior.[3]

1.3.5 Sub-Area Definition

For the purposes of illustrating and discussing the results of the source and ambient data in a consistent fashion, both the Canadian and the United States sides of the Niagara River have been divided into sub-areas. The American sub-areas have been further subdivided into segments. Subsequent discussions in this report will be under these general sub-area and segment headings.

The sub-areas and segments are listed in Table 1.1 and illustrated in Figure 1.3

The Buffalo-Lackawanna sub-area consists of four segments: Lake Erie (Bethlehem Steel to Buffalo River mouth), Buffalo River (Buffalo River watershed), Black Rock Canal (parallels Niagara River from Buffalo River mouth to a ship lock at the north end of Squaw Island), and Bird Island-Riverside

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[2] Dr. R. Murthy, NWRI, Personal Communication, 1983.

[3] Dr. J. Carey, NWRI, Personal Communication, 1983.

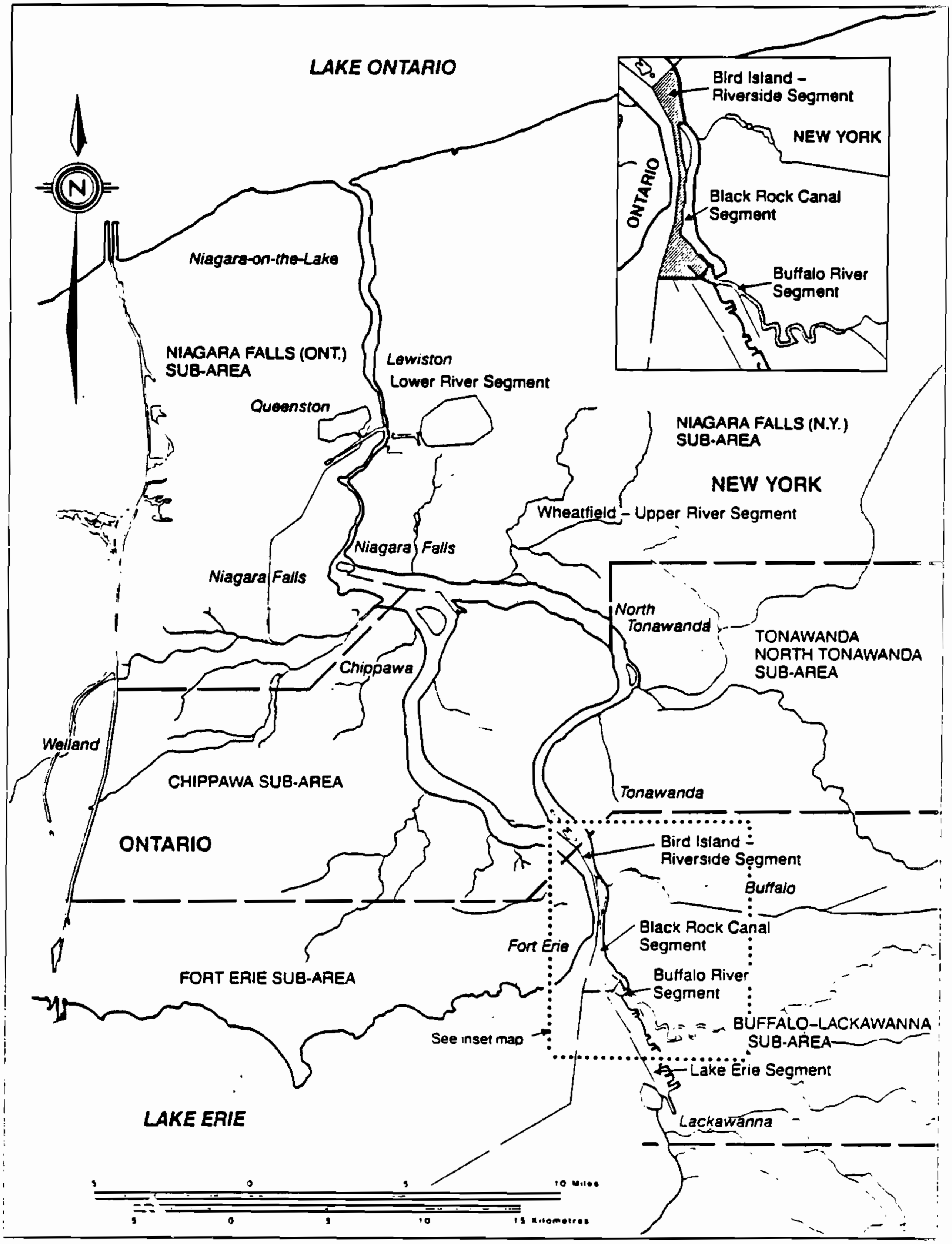

FIGURE 1.3 SUB-AREAS AND SEGMENTS ALONG THE NIAGARA RIVER

NEW YORK WATER CLASSIFICATIONS AND QUALITY STANDARDS

(Official Codes, Rules, and Regulations of the State of New York, Chapter X—Division of Water Resources, Article 2, Part 609 and Parts 700 through 704; Adopted April 28, 1972; Amended February 25, 1974; September 20, 1974; August 2, 1978; Effective September 1, 1978; November 5, 1984; July 3, 1985, Effective August 3, 1985; July 5, 1985)

Quality Standards for Fresh Surface Waters

Item: 1. Turbidity.

Specifications: No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Item: 2. Color.

Specifications: None from man-made sources that will be detrimental to anticipated best usage of waters.

Item: 3. Suspended, colloidal or settleable solids.

Specifications: None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Items: 4. Oil and floating substances.

Specifications: No residue attributable to sewage, industrial wastes or other wastes nor visible oil film nor globules of grease.

Items: 5. Taste and odor-producing substances, toxic wastes and deleterious substances.

Specifications: None in amounts that will be injurious to fishlife or which in any manner shall adversely affect the flavor, color or odor thereof, or impair the waters for any best usage as determined for the specific waters which are assigned to each class.

Item: 6. Thermal discharges.

Class AA

Best usage of waters. Source of water supply for drinking, culinary or food processing purposes and any other usages.

Conditions related to best usage of waters. The waters, if subjected to approved disinfection treatment, with additional treatment if necessary to remove naturally present impurities, will meet New York State Department of Health drinking water standards and will be considered safe and satisfactory for drinking water purposes.

Quality Standards for Class AA Waters

Item: 1. Coliform.

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 50 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 240 for 100 ml of sample.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: Shall be kept as low as practicable to maintain the best usage of waters, but in no case shall it exceed 500 milligrams per liter.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

Item: 5. [Repealed]

Item: 6. [Repealed]

Note 1: [Repealed]

CLASS A

Best usage of waters. Source of water supply for drinking, culinary or food processing purposes and any other usages.

Conditions related to best usage of waters. The waters, if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities will meet New York State Department of Health drinking water standards and will be considered safe and satisfactory for drinking water purposes.

Quality Standards for Class A Waters

Item: 1. Coliform.

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 5,000 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 20,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: Shall be kept as low as practicable to maintain the best usage of waters, but in no case shall it exceed 500 milligrams per liter.

Item: 4. Dissolved oxygen.

Specifications: For cold waers suitable for trout spawning, the DO concentration shall not less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

Item: 5. [Repealed]

Item: 6. [Repealed]

Note 1: [Repealed]

CLASS B

Best usage of waters. Primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes.

Quality Standards for Class B Waters

Item: 1. Coliform.

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

Note 1: [Repealed]

CLASS C

Best usage of waters. Suitable for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation.

Quality Standards for Class C Waters

Item: 1. Coliform.

Specifications: The monthly geometric mean total coliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 2,000 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

Note 1: [Repealed]

CLASS D

Best usage of waters. These waters are suitable for secondary contact recreation, but due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support the propagation of fish.

Conditions related to best usage of waters. The waters must be suitable for fish survival.

Quality Standards for Class D Waters

Item: 1. pH.

Specifications: Shall be between 6.0 and 9.5.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than three milligrams per liter at any time.

Note 1: [Repealed]

Quality Standards for Saline Surface Waters

Items: 1. Garbage, cinders, ashes, oils, sludge or other refuse.

Specifications: None in any waters of the marine district as defined by Environmental Conservation Law (§17-0105).

Item: 2. pH.

Specifications: The normal range shall not be extended by more than 0.1 pH unit.

Item: 3. Turbidity.

Specifications: No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Item: 4. Color.

Specifications: None from man-made sources that will be detrimental to anticipated best usage of waters.

Item: 5. Suspended, colloidal or settleable solids

Specifications: None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Items: 6. Oil and floating substances.

Specifications: No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.

Item: 7. Thermal discharges.

Specifications: (See Part 704 of this Title.)

CLASS SA

Best usage of waters. The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation.

Quality Standards for Class SA Waters

Item: 1. Coliform.

Specifications: The median MPN value in any series of samples representative of waters in the shellfish growing area shall not be in excess of 70 per 100 ml.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than 5.0 mg/l at any time.

Items: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for primary contact recreation or that will be injurous to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SB

Best usage of waters. The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes.

Quality Standards for Class SB Waters

Item: 1. Coliform

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than 5.0 mg/l at any time.

Item: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for primary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof. or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof, or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SC

Best usage of waters. The waters shall be suitable for ishing and all other uses except for primary contact ecreation and for the taking of shellfish for market ırposes.

Quality Standards for Class SC Waters

Item: 1. Coliform

Specifications: The monthly geometric mean total oliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform alue for 100 ml of sample shall not exceed 2,000 from a ninimum of five examinations. This standard shall be net during all periods when disinfection in practiced.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than 5.0 mg/l at any ime.

Item: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere vith use for secondary contract recreation or that will be njurious to edible fish or shellfish or the culture or ropagation thereof, or which in any manner shall idversely affect the flavor, color, odor or sanitary condiion thereof or impair the waters for any other best usage s determined for the specific waters which are assigned o this class.

CLASS SD

Best usage of waters. All waters not primarily for recreational purposes, shellfish culture or the development of fish life and because of natural or man-made conditions cannot meet the requirements of these uses.

Quality Standards for Class SD Waters

Item: 1. Dissolved oxygen.

Specifications: Shall not be less than 3.0 mg/l at any time.

Item: 2. Toxic wastes and deleterious substances.

Specifications: None alone or in combination with other substances or wastes in sufficient amounts to prevent survival of fish life or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.