915114

ND-2900 D1720

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

CLARENCE READY MIX, SITE NUMBER: 915114
TOWN OF CLARENCE, ERIE COUNTY

February 1990

Prepared for:

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, Commissioner

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

Prepared by:

Ecology and Environment Engineering, P.C.

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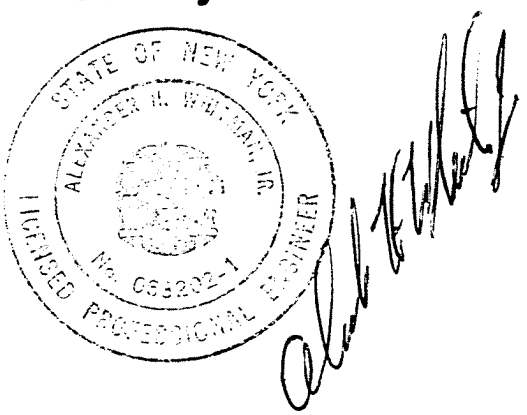

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Prepared by:

ecology and environment
engineering, p.c.
BUFFALO CORPORATE CENTER
368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060

ERRATA

Clarence Ready Mix
Site Number 915114

Page 4-8 Section 4.4 Third sentence should read:

"On March 23, 1982, PCBs were detected (0.11 ug/l) slightly above the New York State groundwater standard (0.10 ug/l) and on March 15, 1983, A-BHC (lindane) was detected (0.07 ug/l)."

The units had been given incorrectly.

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1. EXECUTIVE SUMMARY

1.1 SITE BACKGROUND

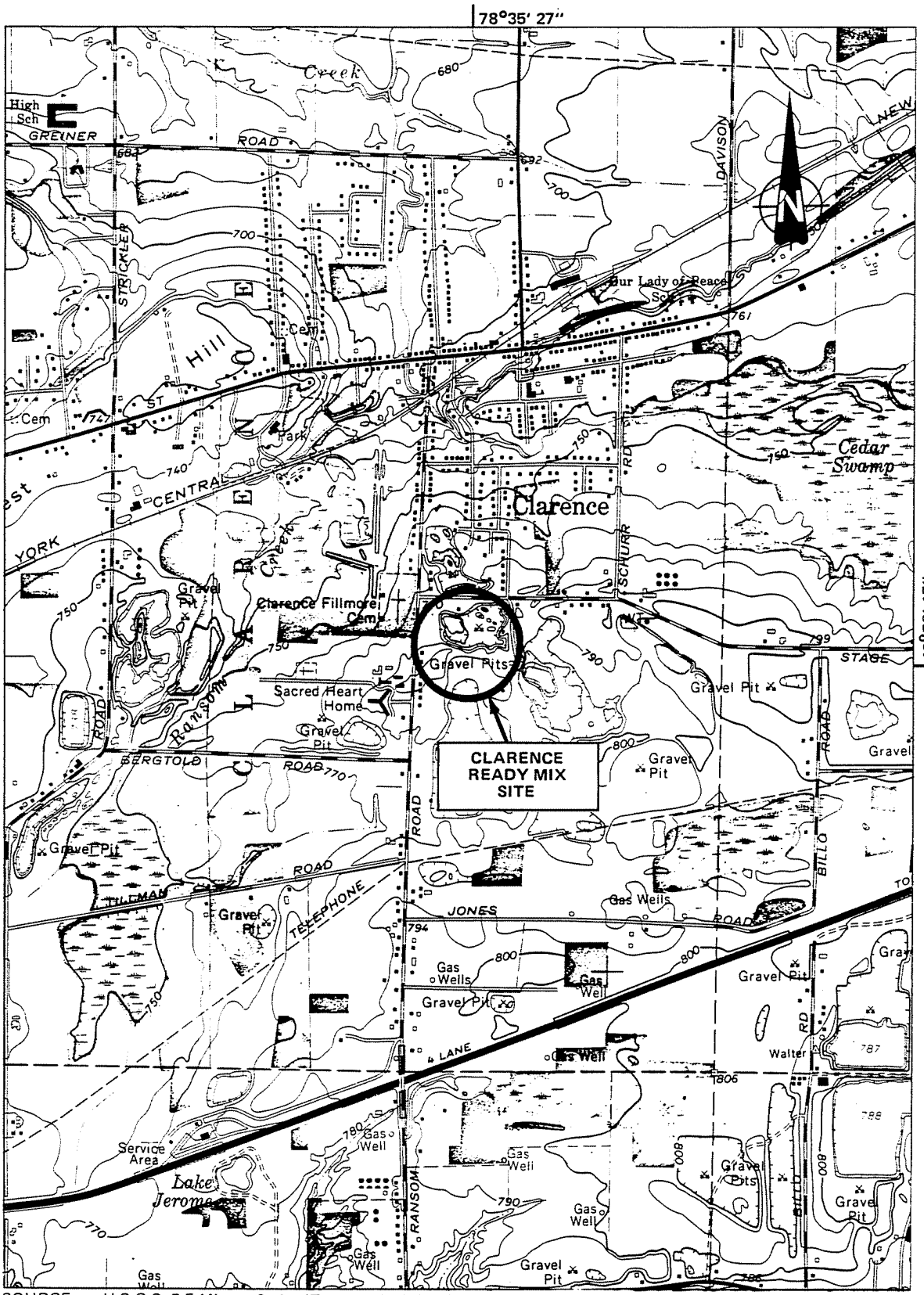
The Clarence Ready Mix site is a former gravel pit owned by Clarence Materials Handling Corporation (formerly Clarence Sand and Gravel, 1975) that was used for the burial of tires, trash, discarded appliances, and roadside cleanup debris. The pit is now capped and vegetation has established itself on the site.

The site comprises approximately 6 acres and is estimated to be 25 feet deep. It is located to the southeast of the corner of Ransom Road and Stage Road in the Town of Clarence (see Figures 1-1 and 1-2), and is bordered on the south by a pond, on the north by Stage Road, on the west by a field, and the east by the gravel mining operations, which remain in operation.

1.2 PHASE I EFFORTS

On August 21, 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;



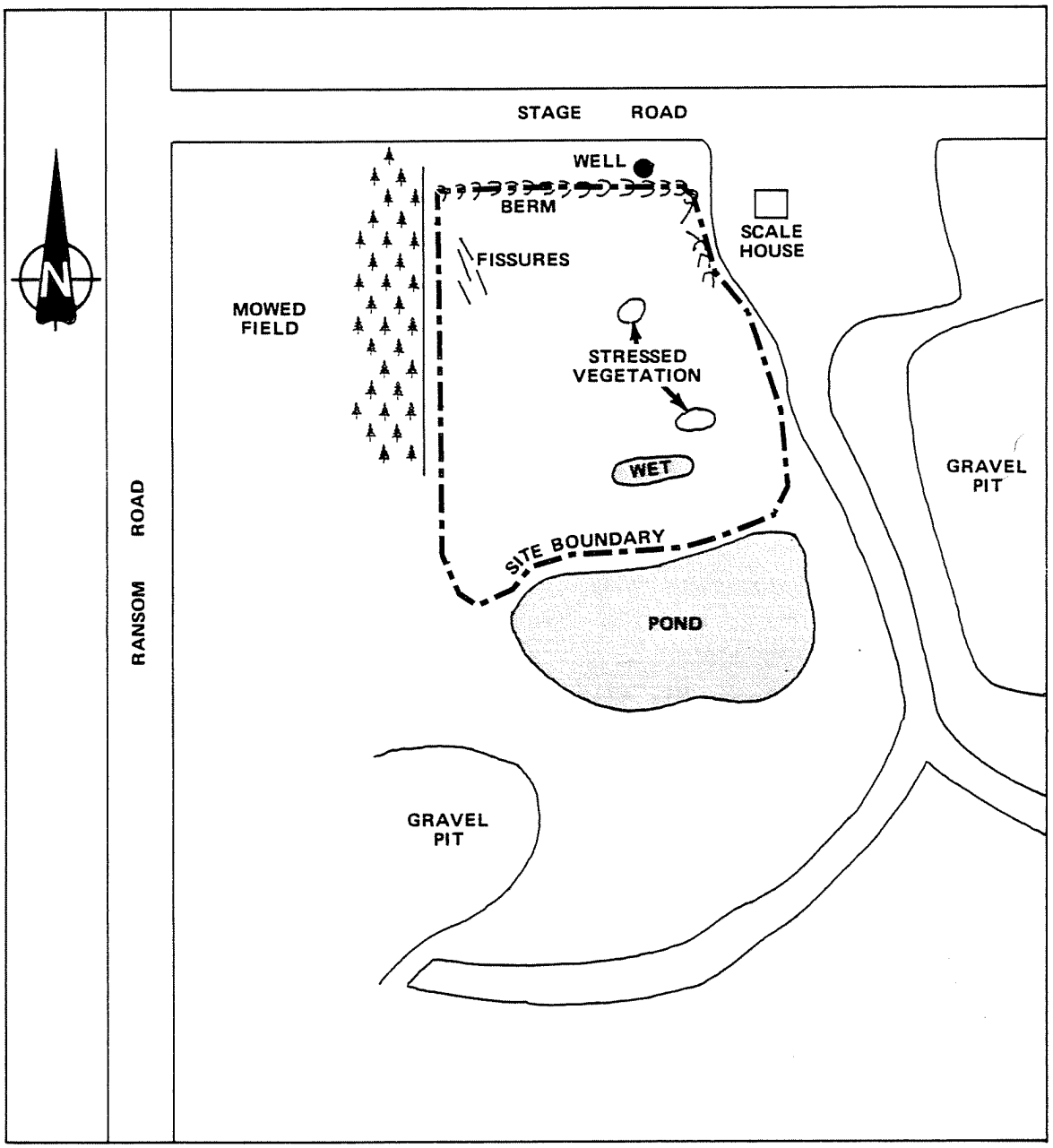
SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle, Clarence, N.Y., 1965.

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

Figure 1–1 LOCATION MAP



SOURCE: Ecology and Environment, Inc., 1987.

NOT TO SCALE

Figure 1–2 SITE MAP - CLARENCE READY MIX

- 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 United States Environmental Protection Agency (EPA) Site Inspection Report form.

1.3 ASSESSMENT

The Clarence Ready Mix site was capped with approximately 2 feet of soil which is almost entirely covered with vegetation. The terrain is higher in elevation on the north and west sides and slopes steeply to the south and east. A pond exists at the south end of the landfill.

Some debris was noted on the site, mainly scrap metal and wood. Open fissures in the cap were also noted, approximately 2 to 4 inches wide, as well as woodchuck holes and two areas of stressed vegetation. No visible leachate was observed in the pond.

1.4 HAZARD RANKING SYSTEM 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:

- 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).

- S_{FE} reflects the potential for harm from substances that can explode or cause fires.

- 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 = 17.11 (S_{GW} = 29.59; S_{SW} = 0.67; S_A = 0)
S_{FE} = Not scored
S_{DC} = 50.00

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 CLARENCE READY MIX

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: 5/20/87
Information Gathered: File search for Clarence Ready Mix.

New York State Department of Environmental Conservation
Solid and Hazardous Waste Division and Permitting Division
50 Wolf Road
Albany, New York 12233-0001
Contact: Raymond Lupe
Telephone No.: (518) 457-9538
Date: 6/22/87
Information Gathered: File search for Clarence Ready Mix; no files found.

New York State Department of Environmental Conservation, Region 9
Solid and Hazardous Waste Division and Permitting Division
600 Delaware Avenue
Buffalo, New York 14202
Contact: Lawrence Clare
Telephone No.: (716) 847-4585
Date: 5/8/87, 6/2/87
Information Gathered: File search for Clarence Ready Mix.

New York State Department of Environmental Conservation, Region 9
Division of Environmental Enforcement
600 Delaware Avenue
Buffalo, New York 14202
Contact: Joann Gould
Telephone No.: (716) 847-4582
Date: 6/22/87
Information Gathered: File search for Clarence Ready Mix.

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.: 847-4550
Date: 6/13/87, 8/26/87
Information Gathered: Floodplains, significant habitats, fisheries resources, plant species of concern, wetlands in vicinity of Clarence Ready Mix.

State of New York Department of Health
Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12237
Telephone No.: (518) 458-6310
Contact: Lani Rafferty
Date Contacted: April 5, 6, 1989
Information: File search for site history, correspondence, background information

Table 3-1 (Cont.)

New York State Department of Health
584 Delaware Avenue
Buffalo, New York, 14202
Contact: Linda Russen, Cameron O'Connor
Telephone No.: (716) 847-4500
Date: 5/18/87, 4/13/89
Information Gathered: File search for Clarence Ready Mix.

Erie County Department of Environmental Planning
95 Franklin Avenue
Buffalo, New York 14202
Contact: Kermit Studley
Telephone No.: (716) 846-6370
Date: 6/6/87
Information Gathered: File search on Clarence Ready Mix.

United States Department of Agriculture (USDA)
Soil Conservation Service
21 South Grove Road
East Aurora, New York 14731
Contact: John Whitney
Telephone No.: (716) 655-1210
Date: 8/25/87
Information Gathered: Agricultural district lands and distance to productive prime agricultural lands.

Town of Clarence
Real Property Assessor
Clarence Town Plaza
Clarence, New York 14032
Contact: Al Weber, Real Property Appraiser
Telephone No.: (716) 741-2802
Date: 8/21/87
Information Gathered: Property ownership for Clarence Ready Mix.

Town of Clarence Water Department
5635 Goodrich Road
Clarence, New York 14032
Contact: Clerk
Telephone No.: (716) 741-3263
Date: August 21, 1987
Information Gathered: Water supplies.

Interviews

Contact: Albert Gilewitz, P.E.
Agency: Calocerinos and Spina
69 Delaware Avenue
Buffalo, New York 14202
Telephone No.: (716) 847-1630
Date: 8/21/87
Information Gathered: Site Status and Remediation Plans.

Contact: Gerase Spangler
Agency: Resident
4720 Sawmill Road
Clarence, New York 14031
No phone listed
Date: 8/26/87
Information Gathered: Well water information.

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4. SITE ASSESSMENT

4.1 SITE HISTORY

The Clarence Ready Mix site is a gravel pit formerly owned by Eric Krehbidl (1950) and presently owned by Clarence Materials Handling Corp. (1954), which changed its name from Clarence Sand and Gravel in 1975. The pit was used to dispose of tires, trash, discarded appliances, and roadside cleanup debris from 1970 to 1978. Before 1970, the site was used as a gravel pit. A 1978 NYSDEC inspection of the site resulted in the issuance of a consent order requiring proper site closure. The site consists of a 6-acre inactive gravel pit used for the disposal of construction trash in the 1970s. The landfill material is approximately 25 feet thick. The filled gravel pit is now capped, and vegetation has established itself on the site.

Calocerinos and Spina, the current consultant for the Clarence Materials Handling Company, has submitted a Feasibility Study and Remedial Action Plan to Jack Tygert of NYSDEC, Region 9. According to the plan, remedial investigations will be conducted and wastes will be exhumed and entombed in a permitted construction and demolition debris landfill.

4.2 SITE TOPOGRAPHY

The Clarence Ready Mix site is located within the Erie-Niagara Basin in the Erie-Ontario lowlands physiographic province, approximately 500 feet southeast of the corner of Stage and Ransom Roads, Town of Clarence, Erie County, New York. The Erie-Ontario Lowlands are characterized as having relatively low relief and the elevation of the site is approximately 760 feet above mean sea level (LaSala 1968).

The site itself is approximately 25 feet higher on the north and west than on the south and east. It is presently covered with an

estimated 2 feet of soil which has proliferating vegetation. The soil appears to be slumping and cracking in some areas (E & E 1987).

Directly south of the site is a small pond. Farther south and southeast is the Clarence Ready Mix gravel operations which contain gravel pits and processing equipment. North of the site is Stage Road and a sparse residential area. West of the site is a mowed field, Ransom Road, and a cemetery. The Village of Clarence is located 2,000 feet north of the site.

4.2.1 Soils

The soil type in the area is classified as a Palmyra gravelly loam complex, 0-3% slope (Owens et al. 1986). This soil complex is characterized by nearly level, deep, and well-drained outwash deposits that have a relatively high content of sand and limestone. It typically has a 9-inch surface layer of brown gravelly loam, followed by a mix of brown gravelly loam, brown gravelly heavy loam, and brown gravelly light clay loam. The substratum is composed of gravelly loamy sand in the upper part and very gravelly sand in the lower part.

The United States Department of Agricultural Soil Conservation Service (USDA SCS) has designated the Palmyra gravelly loam as prime farmland (Owens et al. 1986). The nearest prime agricultural land that has been in production over the past five years is 1,700 feet from the site (Whitney 1987).

4.2.2 Wetlands

Numerous state- and federally designated wetlands are located near the Clarence Ready Mix site. State 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. State wetlands are a minimum of 12.4 acres.

There are three federally designated wetlands located 3,000 feet south and east of the site. These wetlands appear to be former gravel pits that have filled with water.

There are four major state-designated wetlands within 1 mile. The Roth Wetland, No. CL-5, located 1,500 feet to the northwest, is 21 acres in size, and is a Class II wetland.

The Cedar Swamp, No. CL-11, 208 acres in size, is designated as a Class I wetland, and is a state wilderness area. The Cedar Swamp is located 3,500 feet to the northeast.

An unnamed wetland, No. CL-1, which is 31 acres in size, is classified as a Class II wetland, and is located 4,000 feet to the southeast.

The Tillman Road Swamp, No. CL-2, is a 100-acre Class I wetland located 4,700 feet to the southwest and is part of the proposed Tillman Road Wildlife Management Area, which is 240 acres in size. This wetland is designated as a critical and sensitive wildlife and plant habitat area by NYSDEC (NYSDEC 1987).

4.2.3 Surface Waters

There are numerous small ponds in the vicinity of the site which were former gravel pits that have filled with water. These ponds are not hydraulically connected via surface water with the exception of the ponds which are located adjacent to the site on the south side.

The nearest flowing surface water, Ransom Creek, intersects the state wetlands identified in Section 4.2.2 and is located north and west of the site. The site is not hydraulically connected to Ransom Creek via surface water (USGS 1965).

4.2.4 Land Use

The land use in the vicinity of the Clarence Ready Mix site is primarily commercial (gravel processing and the Clarence Fillmore Cemetery), light residential, and agricultural. The nearest prime agricultural land in use is 1,700 feet away (USDA SCS 1976) and the population within a 1-mile radius is 2,298 people (General Sciences Corporation 1986).

4.2.5 Critical and Sensitive Habitats

The nearest critical and sensitive habitat is the Tillman Road Swamp, which is part of a proposed 240-acre Tillman Road Wildlife Management Area. The Tillman Road swamp contains a 100-acre Class I

wetland. No endangered or rare plant or animal species were noted in the wetland (NYSDEC 1987).

4.3 SITE HYDROLOGY

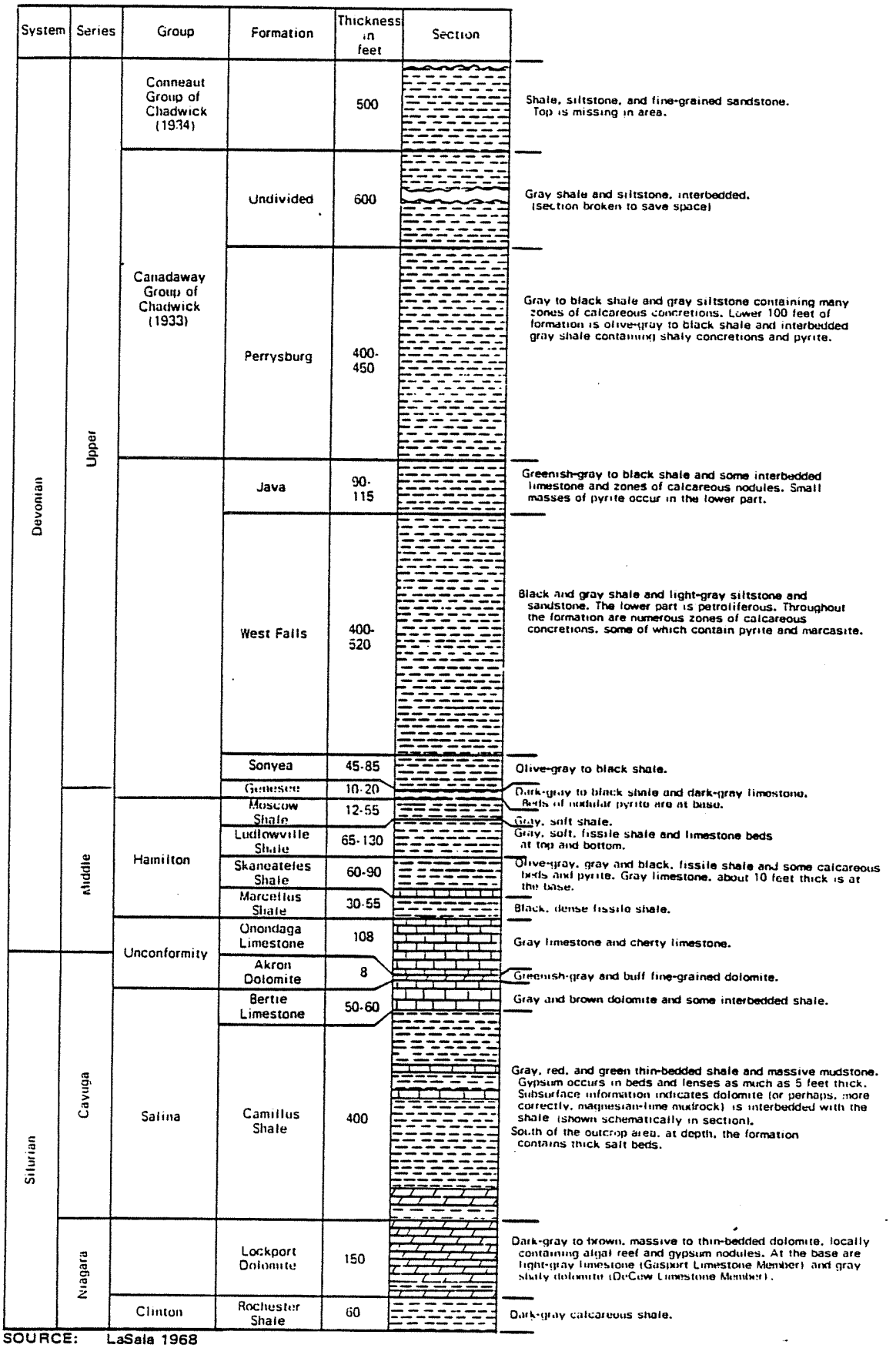
4.3.1 Regional Geology and Hydrogeology

The Clarence Ready Mix 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 100 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.



SOURCE: LaSala 1968

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

The unit comprises three distinct members that cumulatively are approximately 140 feet thick (Buehler 1966).

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 Clarence Ready Mix site is in an area having a soil type classified as Palmyra gravelly loam. These soils are nearly level, deep, well-drained outwash deposits containing a relatively high content of sand and limestone. Permeability in this soil type is high, ranging from 0.6 to greater than 20 inches per hour (Owens et al. 1986).

A study of the Onondaga aquifer in eastern Erie County was performed by the United States Geological Survey (USGS) and the Erie County Department of Environment and Planning (ECDEP) due to declining groundwater levels since 1982. The study presents a considerable amount of data concerning wells and groundwater fluctuations in the Clarence area (Staubitz and Miller 1987).

The uppermost bedrock is the Onondaga Limestone, which contains groundwater in bedding planes, vertical joints, and fractures, some of which have been widened by dissolution. The upper 5 to 15 feet of the limestone contain the most joints. The Akron and Bertie Dolomite formations underlie the Onondaga Limestone and are relatively impermeable (Staubitz and Miller 1987). This is underlain in turn by Camillus Shale.

Three wells which are drilled into the Onondaga Limestone are located just north of the site. The wells range from 40 to 50 feet deep. Groundwater is reported to be encountered from 24 to 39 feet below the ground surface (Staubitz and Miller 1987).

One monitoring well was drilled to greater than 100 feet into the Akron and Bertie Dolomite formations. The groundwater level was reported at 52 to 74 feet below the ground surface (Staubitz and Miller 1987).

The surface water in the pond located south of the site is likely to be at the same level as the local groundwater due to an equilibrium between groundwater and surface waters resulting from flow through the highly permeable overburden. This pond is located approximately 35 feet below the grade of the terrain in the area (E & E 1987).

The groundwater flow in the Onondaga Limestone ranges from a direction of west in the fall to northwest in the spring (Staubitz and Miller 1987).

4.3.3 Hydraulic Connections

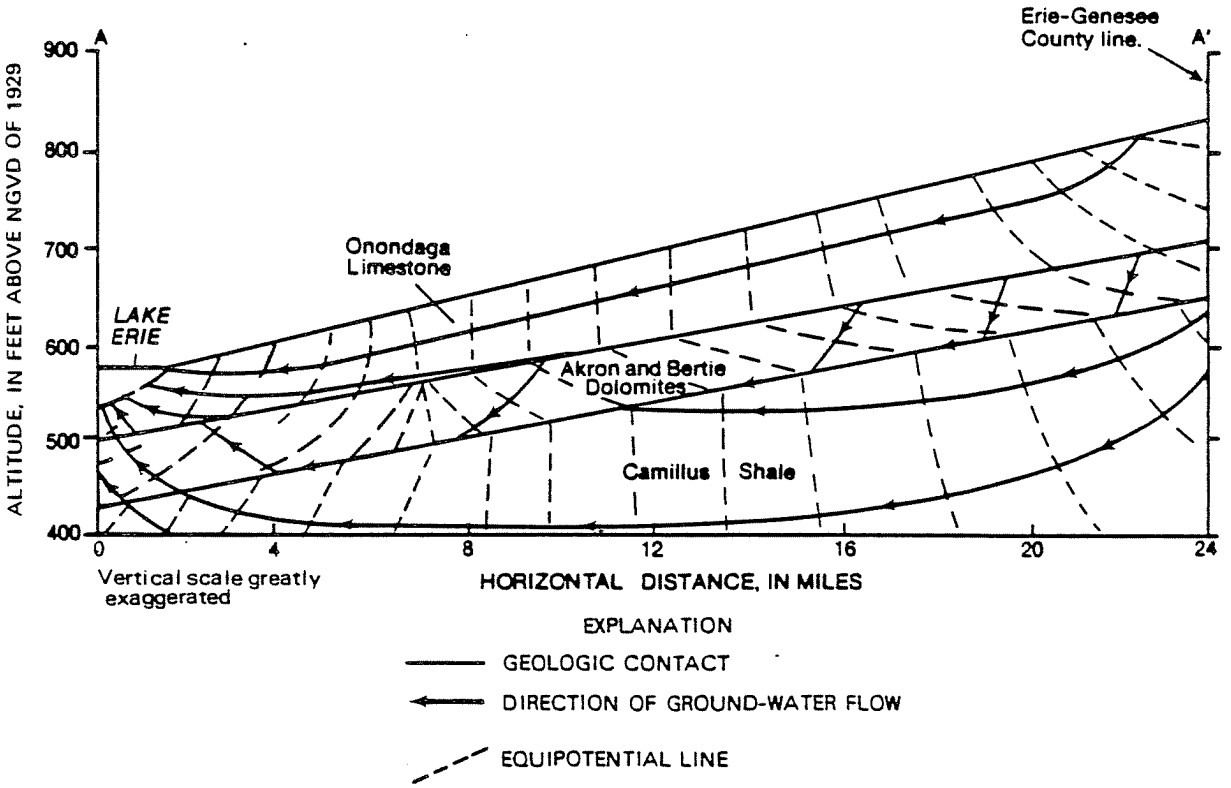
The site is most likely hydraulically connected to the Onondaga Limestone Aquifer due to the high permeability of the overburden and the relatively small distance between the site and groundwater. Groundwater movement in the Onondaga Limestone occurs in both a vertical and horizontal direction. Although the underlying Akron and Bertie Dolomite formations are relatively impermeable, some passage of groundwater from the limestone into the dolomite occurs. Groundwater does not flow into the Camillus Shale, but rather follows the interface between the dolomite and the shale (Staubitz and Miller 1987). The flow of groundwater in the bedrock units is illustrated in Figure 4-2.

4.4 SITE CONTAMINATION

The USGS groundwater monitoring well located at the northern border of the site has been sampled six times (11/19/81, 3/23/82, 8/4/82, 2/15/83, 3/15/83, and 6/13/83) and analyzed for polychlorinated biphenyls (PCBs), cadmium, phenol, chemical oxygen demand (COD), total organic carbon (TOC), lead, pesticides, and aromatics. Cadmium was detected, but was below the New York State groundwater standard. On March 23, 1982, PCBs were detected (0.11 mg/l) slightly above the New York State groundwater standard (0.10 mg/l) and on March 15, 1983, A-BHC (lindane) was detected (0.07 mg/l) Phenol values were above the groundwater standard of 0.001 mg/l.

There are no data which indicate that contamination exists at the site or that contamination has migrated from the site. The background information indicates the site was used for disposal of street cleanings, spring and fall cleanup, wastes, municipal trash, and discarded appliances. There has been no information found which indicates industrial wastes were disposed of at the site.

More data are needed to assess the contamination at the site. This is addressed in Section 6.



SOURCE: Staubitz and Miller, 1987.

Figure 4–2 GENERALIZED REGIONAL GROUND-WATER MOVEMENT FROM STUDY AREA TO LAKE ERIE

5. PRELIMINARY APPLICATION OF THE HRS

5.1 NARRATIVE SUMMARY

The Clarence Ready Mix site is located southeast of Ransom and Stage roads, and less than 2,000 feet south of the Village of Clarence, Erie County, New York (see Figure 5-1). The site is owned by Clarence Materials Handling (formerly Clarence Sand and Gravel, 1975) which purchased the site in 1954. The site consists of a 6-acre inactive gravel pit which was used for the disposal of construction and demolition debris, street cleanings, and municipal trash in the 1970s. The landfill material is approximately 25 feet thick. A 1978 inspection of the site revealed an illegal landfill. NYSDEC issued a consent order requiring proper closure of the site in 1980.

The site is approximately 760 ft. above sea level and drops 25 feet from north and west to south and east. A small pond is directly south adjoining the site, and numerous ponds are within a 1/2-mile radius. The nearest running surface water is Ransom Creek which has no hydraulic connection to the site via surface water.

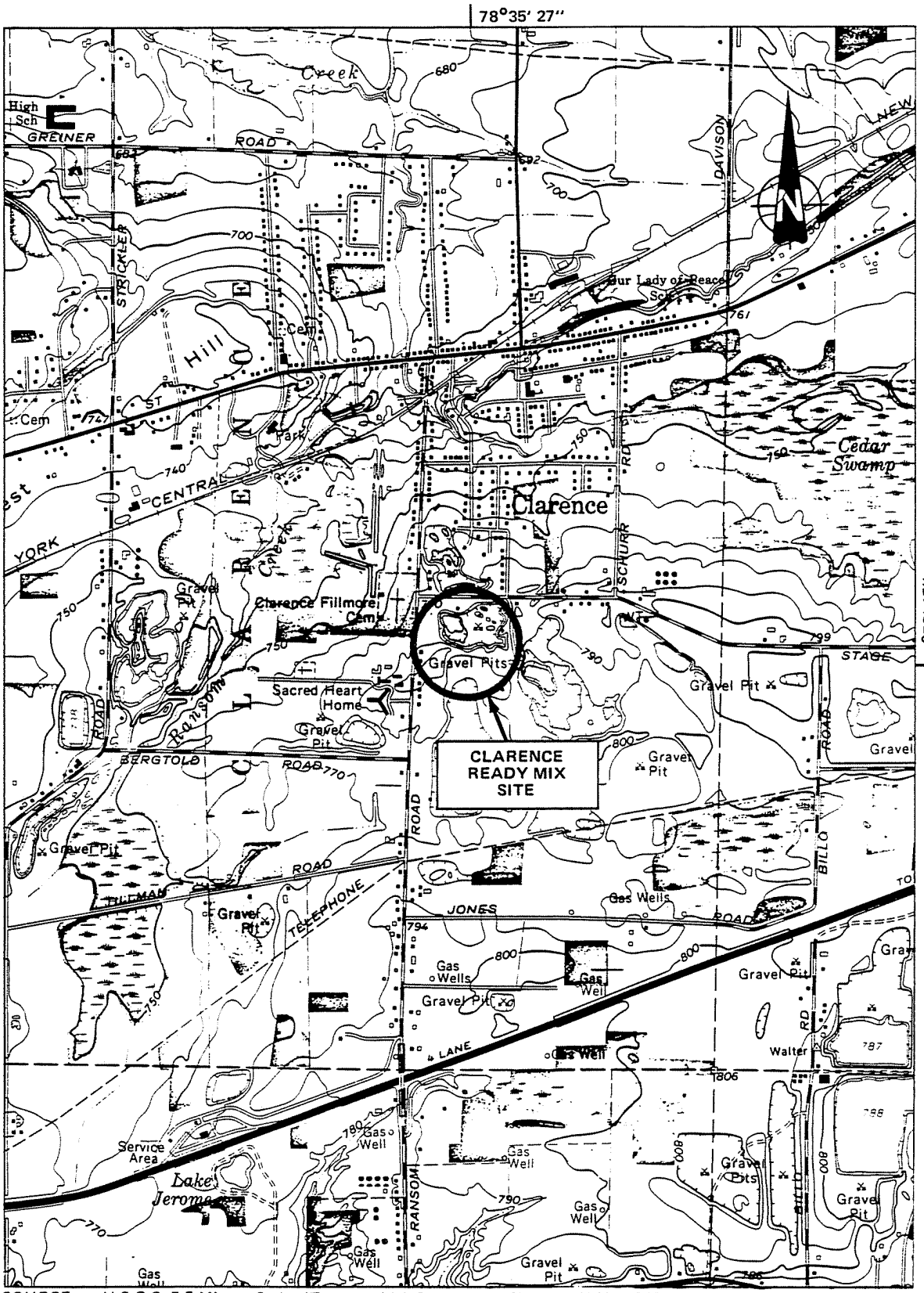
The nearest agricultural land in use is 1,700 feet from the site. There are three federally designated wetlands within 3,000 feet of the site, and four major state-designated wetlands within 3,000 feet of the site, and four major state-designated wetlands within one mile, including a critical and sensitive habitat.

Groundwater samples were collected six times from a USGS well that was installed adjacent to the site in 1981. PCBs were detected slightly above the New York State groundwater standards during the March 23, 1982 sampling period. In addition, lindane was present above detection limits during the March 15, 1983 sampling period.

Phenol was detected above New York State groundwater standards in all six sampling events.

The site is located in a semi-rural area. The nearest aquifer of concern is the Onondaga aquifer which is approximately 47 feet below grade at the site. There have been recent drastic, unexplained changes in the near surface hydrology which have resulted in wells and wetlands going dry (Staubitz and Miller 1987).

During E & E's site visit, no visual evidence of contamination was observed.



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle, Clarence, N.Y., 1965.

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

Figure 5–1 LOCATION MAP

FIGURE 1

HRS COVER SHEET

Facility Name: Clarence Ready Mix

Location: Ransom and Stage roads, Clarence, NY, Erie Co.

EPA Region: II

Person(s) in Charge of Facility: Paul A. Schmidt

P.O. Box AA

Clarence, NY 14031

Name of Reviewer: A. Mark Sienkiewicz Date: 10-2-87

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 Clarence Ready Mix site is a 6-acre former gravel pit allegedly used for the disposal of construction and demolition materials from 1970 to 1978. It is located near the southeast corner of Stage and Ransom roads in the Town of Clarence, Erie County, New York.

Scores: S_M = 17.11 (S_{gw} = 29.59 S_{sw} = 0.67 S_a = 0)

S_{FE} = Not scored

S_{DC} = 50.00

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 45	1	45	45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 2 (3)	1	3	3	
Physical State	0 (1) 2 3	1	1	3	
Total Route Characteristics Score			12	15	
[3] Containment	0 1 2 (3)	1	3	3	3.3
[4] Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 (12) 15 18	1	12	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			13	26	
[5] Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 (20) 24 30 32 35 40	1	20	40	
Total Targets Score			29	49	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			16,965	57,330	
[7] Divide line [6] by 57,330 and multiply by 100		S_{gw} =	29.59		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 (2) 3	1	2	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 (1) 2 3	1	1	3	
Total Route Characteristics Score			11	15	
3 Containment	0 (1) 2 3	1	1	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 (12) 15 18	1	12	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			13	26	
5 Targets					4.5
Surface Water Use	0 (1) 2 3	3	3	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	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			429	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{SW} =	0.67		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0)	45	1	0	45	5.1
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.						
2 Waste Characteristics						5.2
Reactivity and Incompatibility	0 1 2 3		1		3	
Toxicity	0 1 2 3		3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
	Total Waste Characteristics Score				20	
3 Targets						5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30		1		30	
Distance to Sensitive Environment	0 1 2 3		2		6	
Land Use	0 1 2 3		1		3	
	Total Targets Score				39	
4 Multiply 1 x 2 x 3				0	35,100	
5 Divide line 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})	29.59	875.57
Surface Water Route Score (S_{sw})	0.67	0.45
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		876.02
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		29.60
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		17.11

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =	Not scored		

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 (3)	1	3	3	8.2
3 Containment	0 (15)	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 (3) 4 5	4	12	20	
Distance to a Critical Habitat	0 (1) 2 3.	4	4	12	
Total Targets Score			16	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			10,800	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 50.00			

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 location of the document.

Facility Name: Clarence Ready Mix

Location: Ransom and Stage roads, Clarence, Erie County, NY

Date Scored: October 1987

Person Scoring: A. Mark Sienkiewicz

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

NYSDEC Region 9 file, Buffalo, NY.

ECDEP file, Buffalo, NY.

USEPA file, New York, NY.

Site Inspection.

Factors Not Scored Due to Insufficient Information:

Comments or Qualifications:

More information needed on waste characteristics present at the site for accurate score.

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):

PCBs were detected slightly above the New York State groundwater standards in a USGS well that was sampled on March 23, 1982. However, the concentration value was not five times greater than the detection limit, so it was not considered an observed release. However, phenol was detected in all six sample collection events. During November 19, 1981, phenol concentrations were greater than five times the detection limit. Therefore, the elevated phenol concentration would constitute an observed release.

Ref. No. 3

Rationale for attributing the contaminants to the facility:

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Onondaga Limestone Aquifer
Ref. No. 4, 11

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

0-30 feet
Ref. No. 4, 9, 11

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

25 (estimated)
Ref. No. 3, 9

Net Precipitation

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

36 inches
Ref. No. 5

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

27 inches
Ref. No. 5

Net precipitation (subtract the above figures):

9 inches
Ref. No. 5

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Palmyra Gravelly Loam 0-3%
Ref. No. 6

Permeability associated with soil type:

0.6 - >20 inches/hr
4.2×10^{-4} to $>1.4 \times 10^{-2}$ cm/sec
Ref. No. 6

Physical State

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

Solids, unconsolidated, unstabilized
Ref. No. 3, 9

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Cover of silty loam, no liner observed. Slumping and fissures observed.
Ref. No. 9

Method with highest score:

Landfill not adequately covered. No liner.
Ref. No. 5

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Phenol
Ref. No. 3

Compound with highest score:

Phenol
Ref. No. 14

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):

No documentation of hazardous waste disposal, however, phenol was detected in the groundwater

Ref. No. 3

Basis of estimating and/or computing waste quantity:

Quantity unknown; assume a score of 1

* * *

5. TARGETS

Groundwater Use

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

Drinking water
Ref. Nos. 10, 11

Distance to Nearest Well

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

600 feet, located northeast of site on property owned by Gerase Spangler.
Ref. No. 11

Distance to above well or building:

600 feet
Ref. No. 2

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:

Millgrove Mobile Park (population 100) and Quarry Hill Estates (population 400) use wells for drinking water. In addition, a well inventory conducted by Ward W. Staubite and Todd S. Miller (1987) showed 66 wells within 3 miles of the site which tap the Onondaga aquifer.

Ref. Nos. 10, 11

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

Ref. No. 13

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

66 wells x 3.8 people per household = 251
100 + 400 (trailer parks) = 500
Total = 751

Ref. Nos. 10, 11

SURFACE WATER ROUTE

1. OBSERVED RELEASE

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

No documentation of observed release to surface water.

Rationale for attributing the contaminants to the facility:

NA

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

6%
Ref. No. 9

Name/description of nearest downslope surface water:

Pond south of site
Ref. No. 2, 9

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

3-5% (estimated)
Ref. No. 9

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

No.
Ref. No. 9

Is the facility completely surrounded by areas of higher elevation?

No.
Ref. No. 9

1-Year 24-Hour Rainfall in Inches

2.1 inches.
Ref. No. 5

Distance to Nearest Downslope Surface Water

20-30 feet.
Ref. No. 9

Physical State of Waste

Unconsolidated, unstabilized solids
Ref. No. 3, 9

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Cover of silty/loam. Slumping and fissures noted. Slope variable, approx. 6%. Berms noted.
Ref. No. 9

Method with highest score:

Landfill not adequately covered. Diversion system.
Ref. No. 5

* * *

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

None.

Compound with highest score:

NA

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):

No documentation of hazardous waste disposal; however, phenols were detected in groundwater.

Ref. No. 3

Basis of estimating and/or computing waste quantity:

Quantity unknown; assume score of 1.

* * *

5. TARGETS

Surface Water Use

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

Surface water utilized for gravel washing.
Ref. No. 9

Is there tidal influence?

No.

Distance to a Sensitive Environment

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

>2 miles.
Ref. No. 8

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

1,500 feet. (Roth Wetland).
Ref. No. 8

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

>1 mile.
Ref. No. 8

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:

None.

Ref. No. 10

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

None.
Ref. No. 13

Total population served:

None.
Ref. No. 13

Name/description of nearest of above water bodies:

NA

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

NA

A I R R O U T E

1. OBSERVED RELEASE

Contaminants detected:

No release observed.
Ref. No. 9

Date and location of detection of contaminants:

NA

Methods used to detect the contaminants:

HNu monitor
Ref. No. 9

Rationale for attributing the contaminants to the site:

NA

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

NA

Most incompatible pair of compounds:

NA

Toxicity

Most toxic compound:

NA

Hazardous Waste Quantity

Total quantity of hazardous waste:

No documentation of hazardous waste disposal; however, phenol was detected in the groundwater.
Ref. No. 3

Basis of estimating and/or computing waste quantity:

NA

* * *

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

2,298
Ref. No. 1

Distance to a Sensitive Environment

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

>2 miles
Ref. No. 8

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

1,500 feet (Roth Wetland)
Ref. No. 8

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

>1 mile
Ref. No. 12

Land Use

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

Adjacent area to south and west
Ref. No. 2

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

>2 miles
Ref. Nos. 2 and 8

Distance to residential area, if 2 miles or less:

2,000 ft.
Ref. No. 2

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

1,700 ft.
Ref. No. 9

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

1,700 ft.
Ref. No. 9

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

No
Ref. No. 7

FIRE AND EXPLOSION

1. CONTAINMENT — Not scored.

Hazardous substances present:

None detected

Type of containment, if applicable

NA

* * *

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

HNu photoionizer

Ignitability

Compound used:

NA

Reactivity

Most reactive compound:

NA

Incompatibility

Most incompatible pair of compounds:

NA

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

No documentation of hazardous waste disposal; however, phenols were detected in groundwater
Ref. No. 3

Basis of estimating and/or computing waste quantity:

NA

* * *

3. TARGETS

Distance to Nearest Population

2,000 ft. (Village of Clarence)
Ref. No. 2

Distance to Nearest Building

600 ft.
Ref. No. 2

Distance to a Sensitive Environment

Distance to wetlands:

1,500 ft. (Roth Wetlands)
Ref. No. 8

Distance to critical habitat:

4,700 ft. (Tillman Swamp)
Ref. No. 12

Land Use

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

Adjacent (gravel operation)
Ref. No. 2

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

>2 miles
Ref. No. 2

Distance to residential area, if 2 miles or less:

2,000 ft. (Village of Clarence)
Ref. No. 2

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

1,700 ft.
Ref. No. 9

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

1,700 ft.
Ref. No. 9

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

None
Ref. No. 7

Population Within 2-Mile Radius

5,553
Ref. No. 1

Buildings Within 2-Mile Radius

1,877
Ref. No. 1

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No documentation of an observed incident.
Ref. No. 9

* * *

2. ACCESSIBILITY

Describe type of barrier(s):

No barriers on site, no security.
Ref. No. 9

* * *

3. CONTAINMENT

Type of containment, if applicable:

Cover is silty loam, slumping with fissures. Cover depth is less than 2 feet at fissures. No wastes observed.
Ref. No. 9

* * *

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

No contaminants documented on site; however, phenols were detected in groundwater.
Ref. No. 3

Compound with highest score:

Phenols
Ref. No. 14

* * *

5. TARGETS

Population within one-mile radius

2,298
Ref. No. 1

Distance to critical habitat (of endangered species)

No critical habitat in region
Ref. No. 8

REFERENCES

Reference Number	Description of the Reference
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5	Barrett, K.W., S.S. Chang, S.A. Hans, A.M. Platt, 1982, Uncontrolled Hazardous Waste Site Ranking System Users Manual, Mitre Corporation. Document location: E & E, Buffalo, New York.
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11	Staubitz, W.W., and T.S. Miller, 1987, Geology and Hydrology of the Onondaga Aquifer in Eastern Erie County, New York, with Emphasis on Groundwater-Level Declines Since 1982, United States Geological Survey, Water Resources Investigations Report, 86-4317, Ithaca, New York. Document location: E & E, Buffalo, New York.
12	New York State Department of Environmental Conservation, 1987, Critical Habitats. Document location: NYSDEC Region 9, Buffalo, New York.
13	Weaver, David, 1989 Cooperative Extension Agent with Soil Conservation Service, personal communication with Paul Maliszewski. Document location: E & E, Buffalo, New York.
14	Sax, N. Irving, 1979, Dangerous Properties of Industrial Materials, 6th Edition, Van Nostrand Reinhold Company, New York. Document location: E & E, Buffalo, New York.

REFERENCE NO. 1

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 within 1 mile = 1.67 km | 2 mile = 3.33 km | 3 mile = 5 km

SITE	Pop.	# Hs	Pop.	# Hs	Pop.	# Hs
FORMSO	3024	1190	0	0	2836	1737
HOENCH	0	0	1369	629	3973	1316
ERVILLINGER	0	0	1583	716	0	0
ORMAN RODGERS	0	0	3014	1133	2022	845
MP. ARROWHEAD	228	98	1295	523	1999	979
OEHMER PROPERTY	1174	707	640	234	977	398
CHIAS LANDFILL	1174	707	640	234	977	398
TE 242 SITE	126	50	1688	891	0	0
CHAEL WOLFER	1371	495	1236	501	2429	982
LMORE ROAD	0	0	2632	981	23581	8512
ST. SOUTH	2327	766	26954	10209	43007	17674
WN OF LOCKPORT	2154	672	7526	2979	14761	5807
SALLE EXPRESSWAY	11100	4229	16372	6092	20665	4016
LIN STEEL	11680	4425	22023	8501	34155	12307
RBORUNDUM	18758	8661	21039	9049	18846	6945
RBORUNDUM GLOBAR	8790	3380	32103	12431	18061	7993
UFFER CHEMICAL	1273	405	5054	1839	8346	2254
NTIER BRONZE	2351	893	38415	15158	41041	17067
SAULT FOUNDRY	16231	6856	12699	4575	7114	2367
ALLOYS	5540	2157	28495	10667	24264	10503
WAREHOUSE X	16854	4247	22107	8548	34464	12119
BLIC STEEL X	16378	6180	45439	17271	43336	16953
HOPKINS LANDFILL Y	14719	5507	49981	19153	41841	16444
VIEW TERRACE X	11261	3575	19409	5983	37186	12641
N METAL X	21942	11711	62578	31979	105668	45345
C CORP	782	318	17331	6686	44012	17829
DUPONT	9395	3777	36608	14503	64[illegible]	[illegible]

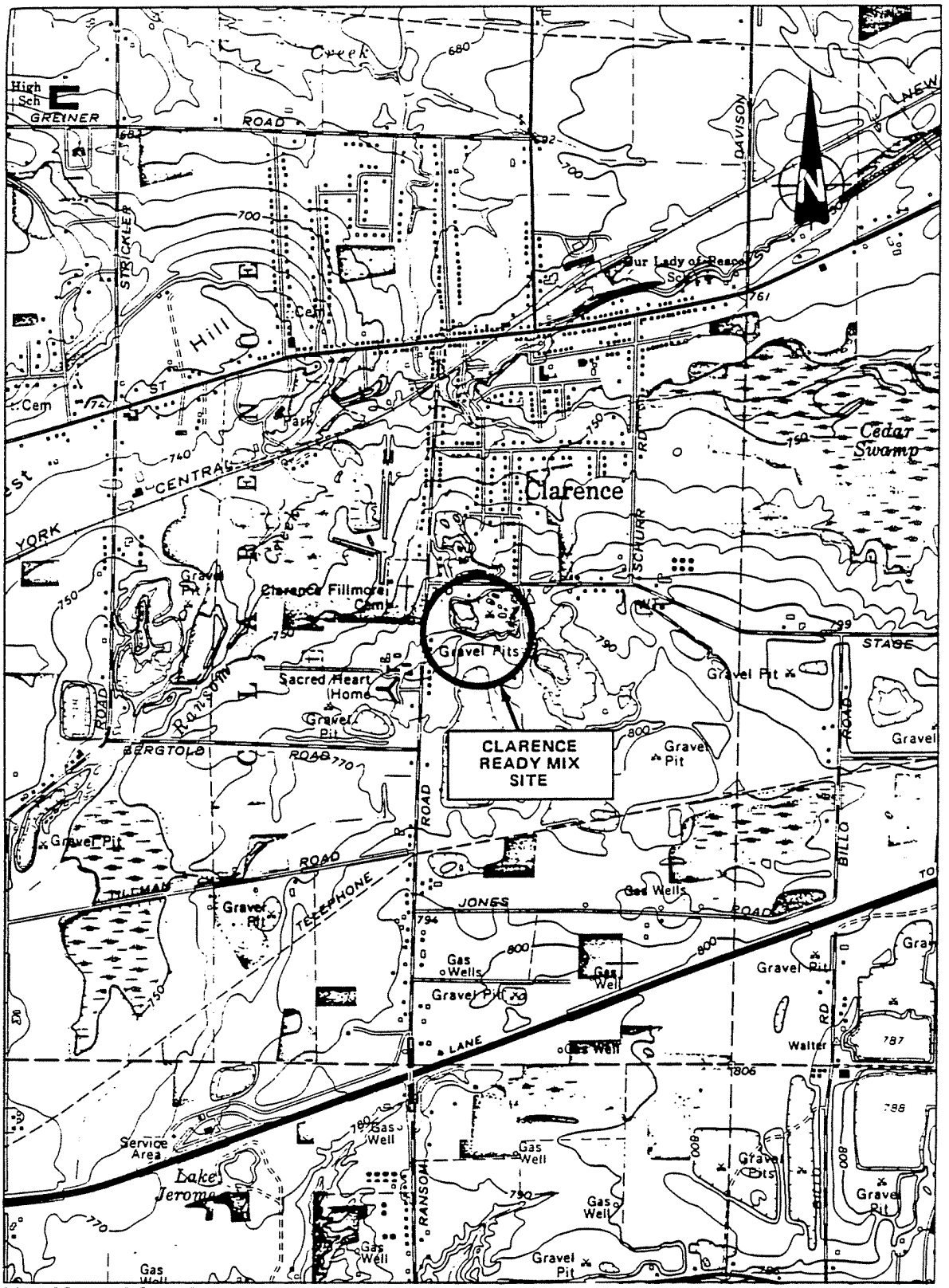
* POPULATION IS NOT CUMULATIVE
ie. BOEHMER PROPERTY
0-1 mile = 1174
1-2 mile = 640
2-3 mile = 977

HAVE TO SUM FOR TOTAL POP WITHIN ENTIRE RING AS RADIUS INCREASES OUTWARD

POPULATION

SITE	1 mile Pop.	1 mile #⌂'s	btwn 1 & 2 mile Pop.	btwn 1 & 2 mile #⌂'s	btwn 2 & 3 mile Pop.	btwn 2 & 3 mile #⌂'s	btwn 3 & 4 mile	btwn 3 & 4 mile
SCHREIBER	1994	597	2919	913	3558	1335		
VENKUS	1151	346	4731	1532	6046	2012		
SNYDER TANK	2978	1079	13524	4755	25942	9798		
DEN SANITATION	6	0	5179	1948	3909	1350		
JAMES FOX	2292	854	1369	555	4763	2010		
TIFT - HOPKINS LANDFILL	18596	6674	41674	18217	53208	23383		
CLARENCE READY MIX	2298		3255	1877	679			

REFERENCE NO. 2



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle, Clarence, N.Y., 1965.

Figure 1–1 LOCATION MAP

recycled paper ecology and environment

REFERENCE NO. 3

CLARENCE REDI-MIX

RANSOM AND STAGE ROADS

CLARENCE, NEW YORK

SITE #915114

PREPARED BY:

Erie County Department of
Environment and Planning

December 1984

DISCLAIMER

The information contained in this document is presented to show environmental conditions, comparisons to ambient environmental standards and criteria and compliance status relative to applicable environmental regulations.

Any use of this information to assess the risks to personal or public health, identify potential personal or public liability or to estimate the costs of remedial activity should only be done after consultation with appropriate government agencies or private consultants.

BACKGROUND

The Clarence Redi-Mix site is listed in the 1980 and 1983 New York State Department of Environmental Conservation (DEC) "Inactive Hazardous Waste Disposal Site Reports". The site was reported to receive "trash and miscellaneous debris" illegally dumped at the site and is coded as a 2-A.

From our files (ECDEP) it is believed that the site was originally opened for disposal in 1970 and was used primarily by the Town of Clarence for disposal of Spring and Fall cleanup wastes. Other agencies were also reported to have used the area, Due to numerous complaints by local citizens, the owner of the site, Mr. Paul A. Schmidt, closed the site in December of 1978.

AREA SAMPLING

A preliminary sampling program was undertaken by our department to determine water quality. Sampling was conducted on May 15, 1979 from water supplies of concerned area residents.

	pH	Alkalinity	Hardness	SO^4	NO_3
David Boone	7.2	160	268	55.5	.86
Gervase Spangler	7.0	216	340	58.8	3.44
Eugene Melborne	7.2	220	340	64.7	2.06
Nelson Sweeney	7.7	220	332	58.0	.57
Raymond Casta	7.4	170	268	53.0	.55

These initial test results indicated that the water was within the limits of potability. Additional sampling for the type of contaminants that could migrate from industrial landfilling (i.e. pesticides and metals) were planned. A legal referral to DEC precluded further sampling due to possible inclusion of such in a Commissioner's Order.

LEGAL ACTION

Because of the extensive effort to bring the site into compliance, a legal referral was submitted to DEC on December 13, 1978. As a result of the legal referral, the owner developed an acceptable closure plan.

INSPECTIONS

The site has been inspected numerous times by our Department and DEC. The earliest (December 1978-August 1979) inspections (prior to closure) indicated dumping of tires, trash, roadside cleanup debris, ponding and lack of proper cover. The most recent (December 1984) inspections showed that the site has not been active. Natural vegetation had established itself. The only visual observation indicating past landfilling were several sink holes and gas-venting decomposition pockets.

COMPLIANCE

The site was inspected several times to monitor progress toward completion of a phased closure plan. Except for some time delays, it was determined that the site was properly closed. No special sampling was undertaken by DEC since it was believed that historically the site accepted only non-hazardous material.

GEOLOGY

Fortunately, a USGS groundwater testing well has been drilled very near to the site. The well (#81-4) is located near the corner of Ransom and Stage Roads. Groundwater is reported to flow northwesterly from the fill area and toward the well. Bedrock is Onondaga Limestone and is located at 47 feet below the natural ground surface. (Boring log attached to this report to be used as preliminary information.) Landfilling occurred in borrow pits excavted approximately 25 feet below grade.

GROUNDWATER SAMPLING RESULTS

The USGS well has been sampled numerous times since its construction. Although there are some elevated values, they appear to be typical for the area, as substantiated by nearby USGS monitoring wells.

SAMPLING RESULTS - WELL #81-4

PARAMETER	11/19/81	3/23/82	8/4/82	2/15/83	3/15/83	6/13/83
PCB	N.D.	.11	N.D.	N.D.	-	N.D.
CADMIUM	.002	N.D.	.001	.001	-	.001
PHENOL	.045	.008	.004	.002	-	.003
COD	116.0	18.8	14.4	14.0	-	3.2
TOC	24.1	13.7	26.8	18.8	-	26.6
LEAD	-	N.D.	N.D.	N.D	-	N.D.
PESTICIDES	-	Chloroform Present	N.D.	N.*	A-BHC (.07)	N.D.
AROMATICS	-	N.D.	N.D.	N.D.	N.D.	N.D.

N.D. - NONE DETECTED

* Numerous undefined peaks obtained by gas chromatography.

\- NO SAMPLE

All results in milligrams per liter except for PCB's and Pesticides which are in micrograms per liter.

PCB's were detected in only one of the five samples. The single confirmed result only slightly exceeds the standards of 0.1 microgram/liter.

Cadmium was detected in 4 of 5 samples but below the groundwater standard of 0.01 mg/l.

Values noted are above the groundwater standard of 0.001 mg/l.

S - Some detectable amounts of chloroform were observed. No quantitative result was available. The groundwater standard is 100 micrograms/l. A single detection of A-BHC (lindane) was noted. Again this was not confirmed. The groundwater standard for lindane is N.D. (non-detectable). In general, for the pesticides there was not enough succeptible positive test results to indicate a contamination level which would require any action.

The decline in successive values is unexplainable at this time. Except for one initially high value, the range of COD was consistent for other wells in this area.

TOC - These values are consistent with other values found for wells drilled in this area.

AERIAL PHOTOGRAPHY

Review of photos taken in 1972 and 1978 indicated that extensive gravel mining operations occurred in an area bounded approximately by Ransom, Stage, Billo and Jones Roads. The aerial photography is not detailed enough to establish any dumping or landfilling on the property.

LAND USE

The area to the south is generally composed of gravel operations. The areas east and west are primarily sparse residential. Some commercial and residential development is located north of the site. The landfill area comprises approximately two acres.

GROUNDWATER USE

There are a number of residences nearby who depend on wells for their water supply.

CONCLUSIONS AND RECOMMENDATIONS

From visual observations, it is believed the site is now inactive and has been closed properly. Monitoring well samples do not indicate any trend or effect from the landfilling operations. It is believed that only non-hazardous materials were deposited on the site. Periodic sampling of well #81-4 is recommended to monitor the quality of groundwater.

elieved that the groundwater which flows from the
oward a protected wetland known as "Town Park
otected Ransom Creek. Well sample results do not
r degradation which would cause adverse
s.

OMMENDATIONS

sual observations, it is believed the site is now
en closed properly. Monitoring well samples do not
or effect from the landfilling operations. It is
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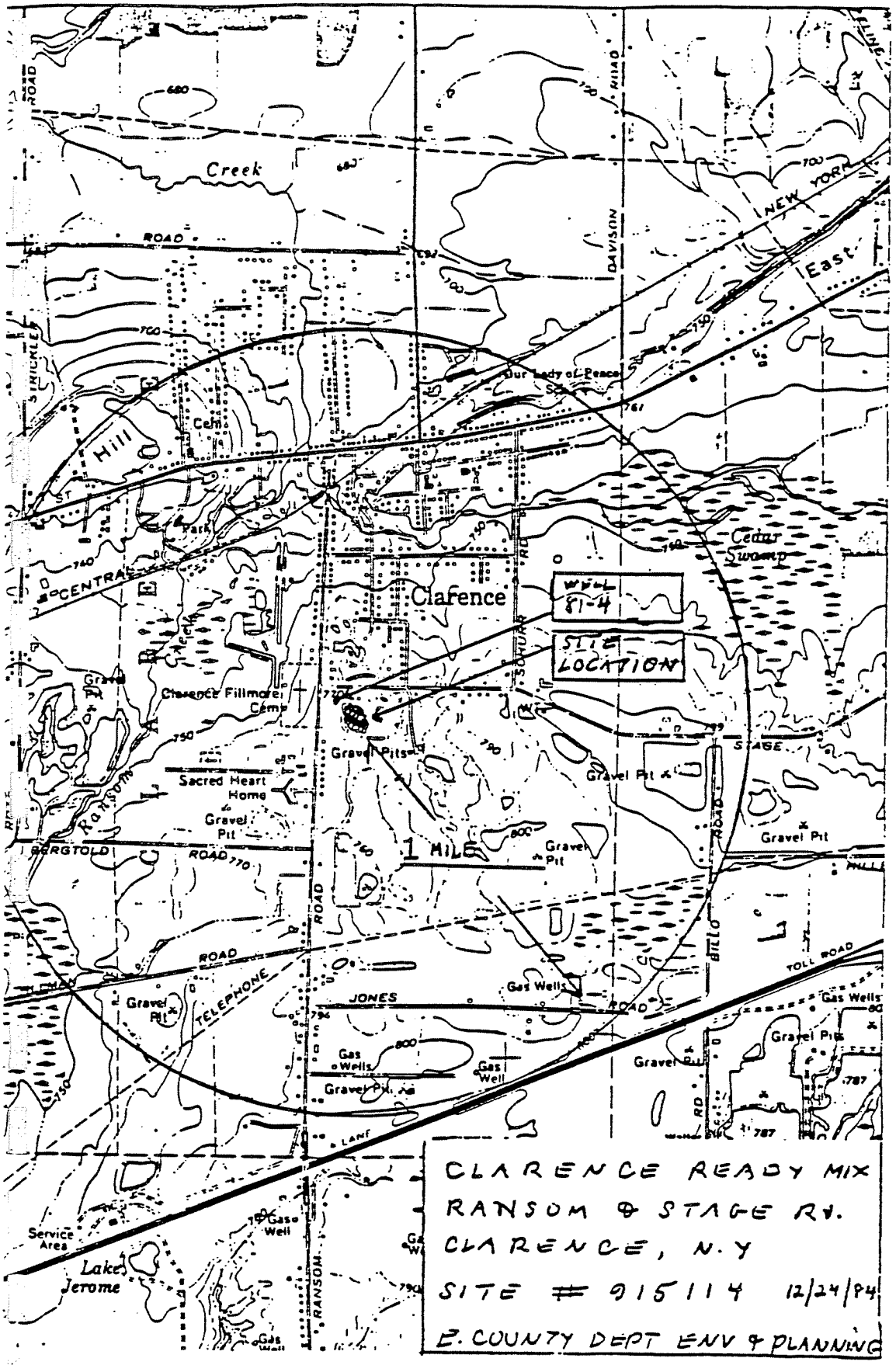

Creek
ROAD
Clarence
WELL 81-4
SITE LOCATION
Clarence Fillmore Cemetery
Gravel Pits
Sacred Heart Home
Gravel Pit
1 MILE
STAGE ROAD
Gravel Pit
BERGTOLD ROAD
JONES ROAD
TELEPHONE
Gas Wells
Gas Well
TOLL ROAD
Cedar Swamp
Our Lady of Peace
Service Area
Lake Jerome
RANSOM ROAD
CLARENCE READY MIX
RANSOM & STAGE RD.
CLARENCE, N.Y
SITE # 915114 12/24/84
E. COUNTY DEPT ENV & PLANNING

81-4 DRIVING LOG

Date: Sept. 5, 1981

89 ft east of the intersection of Ransom and Stage Road, along south side of Stage Road, 23 ft south of centerline.

Remarks	Strat.	Geologic Description
ple		Sand, brn., f.-m., subrd.-rd., loose, dry c.s. - 2% m.s. - 35% f.s. - 55% rough seive analysis v.f.s.- 5% silt - 3%
rec.		Driller reported hard drilling at 10 ft
rec.		Till reddish-brn., silty sand matrix, pebble clasts embedded in matrix, some c.s. A 3 in. layer of silty-v.f.s. at 12.0-12.25 ft. Dry Driller reported out of till at 14 ft.
rec.		Pebbly sand, subrd.-rd., loose, poorly sorted, dry m. peb - 10%, f. peb.-15%, v.c.s. - 25%, c.s. - 30% m.s. - 15%, f.s. - 3%, v.f.s. - 2%, silt-trace
rec.		Same as above
rec.		Same as above Driller reported end of gravel at 30 ft.
rec.		Interlayering of silty f. sand with silt and clay, damp. Olive gray sand, red silt and clay 31.5'-31.75' - v.f.s. and silt 31.75'-32.1' - f.-m. sand, tr. c.s. 32.1'-32.6' - silt/clay 32.6'-33' - v.f.s. and silt
rec.		Same as above 36.8'-37.6' - silt/clay 37.6'-37.75'- f.s. 37.5'-38' - silty clay
rec.		Gravelly sand, dominently f. peb. and c.s., subrd.-rd., sat'd. peb - 43% ms - 12% vcs - 15% f.s. - 6%) silt - 1%) cs - 20% v.f.s - 3%) rough sieve analysis
		Till

... cont'd

Date Sept. 5, 1981

ion-

mple Remarks	Strat.	Geologic Description
	△ △ △ △ △	Till, gray, silty-f.s. matrix with embedded pebbles and cobbles dense, cohesive, poorly sorted, poor permeability, sat'd.
	////////	Bedrock at 47 ft. Onondaga Limestone

Well installation
2-in. dia. PVC casing
2 ft long, 2-in. dia., 8 slot screen set at 41.5-43.5 ft
2'7" of casing above LSD
bentonite seal at 30-32 ft
water level = 31.1 ft below LSD on 10/15/81

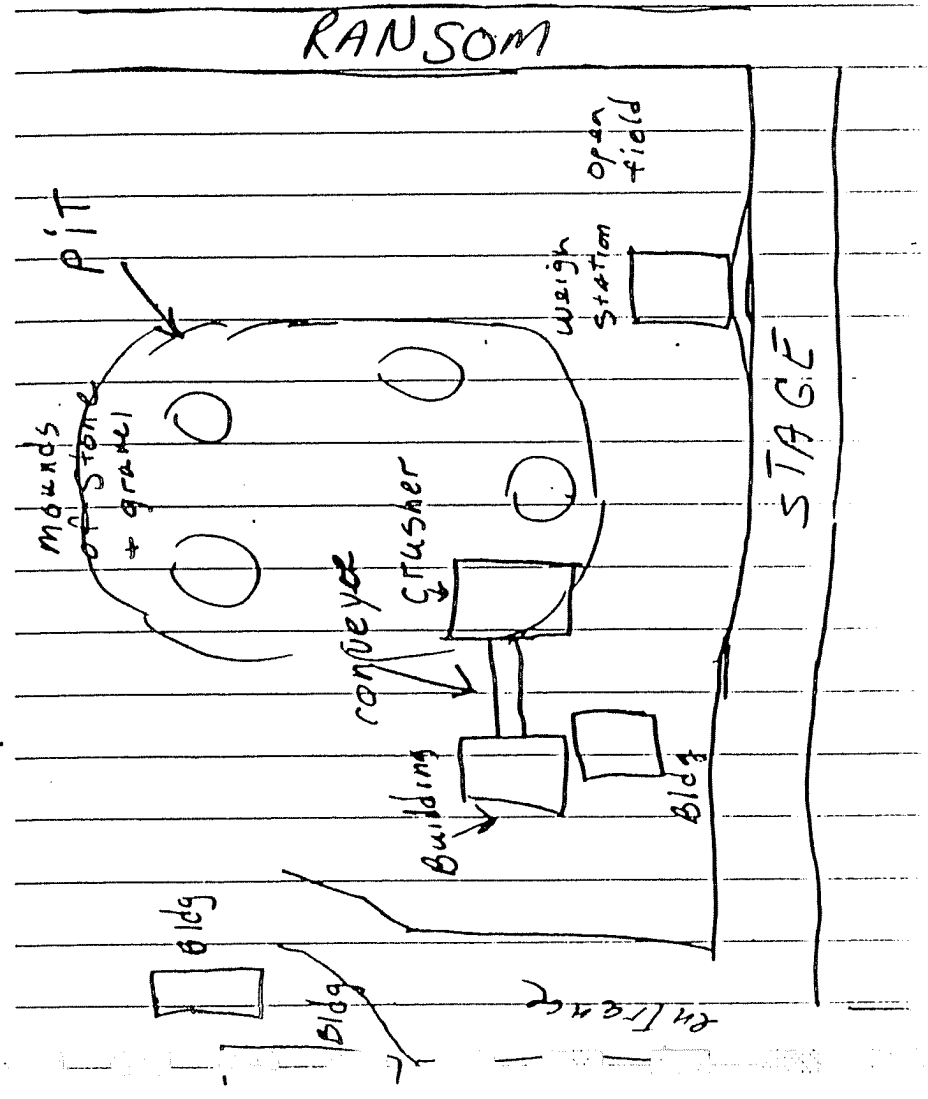
Sheet # 2 of 2

Log Book 1877

2/26/86 02-8601-13

Clarence Ready - Mix

Site is gravel and stone mining operation - open pit type - containing several buildings and machinery associated with this type of operation.



2/26/85 02-8601-13

Clarence Reddy-Mix (cont'd)

No visible signs of hazardous waste or illegal dumping.

Site is occupied by Clarence Mat.

Log Book 1873

KNUCO Home Center

Date	Time	Photographer	Roll #	Frame #	Description
/26/86	12:20	Joe Mayo	2P	19P	Front of KNUCO Bldg Facing east on Tesa Road
/26/86	12:23	Joe Mayo	2P	20P	VOID
/26/86	12:27	Joe Mayo	2P	21P	photo of Dumpster + Debris facing east, KNUCO Home Center

Clarence Ready-Mix (Clarence Materials)

Date	Time	Photographer	Roll #	Frame #	Description
/26/86	2:20	Joe Mayo	2P	22P	photo of entrance to Clarence Materials looking south off Stage road, showing buildings
/26/86	2:25	DS ~~Joe Mayo~~ Dennis Sutton	2P	23P	Sign on site
/26/86	2:27	Dennis Sutton	2P	24P	photo of pit facing South west from Stage road, Clarence Materials
/26/86	2:28	Joe Mayo	2P	25P	Weigh station at Clarence Materials South east from Stage Road

Log Book 1373

	3/14/86	4'15 pm

DISTRIBUTION:

BETWEEN:	OF:	PHONE:
Ron Koczaja	Erie Co Health Dept	(716) 846-7677

AND:

Dennis Sutton (NUS)

DISCUSSION:

Re: drinking water for town of Clarence
purchases water from Erie Co Water Authority -
which gets water from Niagara River

ACTION ITEMS:

NUS 067 RE[illegible] 331

REFERENCE NO. 4

NUS CORPORATION
A Halliburton Company

Site Clarence Redi Mix

POTENTIAL HAZARDOUS WASTE SITE

PRELIMINARY ASSESSMENT,

Clarence Redi-Mix
Site Name

NYD008915506
EPA Site ID Number

Ransom and Stage Roads
Clarence, New York
Address

02-8601-13
TDD Number

Date of Site Visit: Off site reconnaissance 2/26/86

SITE DESCRIPTION

This site is now called Clarence Materials and is comprised of two sections. One section is north of Stage Road and consists of a stone and gravel pit and the operations buildings. This site was observed during an off site reconnaissance and there was no indication that hazardous waste was dumped there. The gravel operations appeared to be active at time of reconnaissance.

The other section of this site is south of Stage Road and it has been alledged that trash and miscellaneous debris were dumped there. Based on background information, there is no indication that hazardous waste was dumped on this section. It is now closed and covered with vegetation. This section was not observed during off site reconnaissance.

According to the Clarence Redi-Mix report prepared by the Erie County Department of Environment and Planning on 12/84, polychlorinated biphenyls (PCBs) were detected in one sample from USGS well #81-4 which slightly exceeded the 0.1 microgram/liter standard. This well is near the site at the corner of Ransom and Stage Roads. Phenols with values above the groundwater standard of .001 mg/l were found as were low levels of pesticides. The above mentioned report recommends periodic sampling of well #81-4 to monitor the quality of groundwater.

PRIORITY FOR FURTHER ACTION: HIGH___MEDIUM_X__LOW___NONE___

RECOMMENDATIONS

A site inspection and sampling is recommended for this site to determine characteristics of illegally dumped waste.

Prepared by: Dennis Sutton
of NUS Corporation

Date: 3/12/86

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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D008915506

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)
Clarence Redi-Mix

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Ransom & Stage Roads

03 CITY
Clarence

04 STATE: NY
05 ZIP CODE: 14031
06 COUNTY: Erie
07 COUNTY CODE: 029
08 CONG DIST.: 38

09 COORDINATES
LATITUDE: 42 58 20.N
LONGITUDE: 78 35 30.W

10 DIRECTIONS TO SITE (Starting from nearest public road)
Northeast and southeast corners of intersection of Ransom and Stage Roads in Clarence, New York.

III. RESPONSIBLE PARTIES

01 OWNER (if known)
Paul A. Schmidt

02 STREET (Business, mailing, residential)
Wehrle Drive

03 CITY
Williamsville

04 STATE: NY
05 ZIP CODE:
06 TELEPHONE NUMBER: (716) 729-8331

07 OPERATOR (if known and different from owner)
Clarence Redi Mix

08 STREET (Business, mailing, residential)
Ransom & Stage Roads

09 CITY
Clarence

10 STATE: NY
11 ZIP CODE: 14301
12 TELEPHONE NUMBER: (716) 632-2000 ( )

13 TYPE OF OWNERSHIP (Check one)
X 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: / / ___ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / /
X C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
X YES DATE: 12 / 24 / 84
___ NO

BY (Check all that apply)
___ A. EPA ___ B. EPA CONTRACTOR ___ C. STATE ___ D. OTHER CONTRACTOR
X E. LOCAL HEALTH OFFICIAL ___ F. OTHER: 7/85 Erie Co. Dept. of Health, NYS DEC (Specify)

CONTRACTOR NAME(S):

02 SITE STATUS (Check one)
___ A. ACTIVE X B. INACTIVE* ___ C. UNKNOWN

03 YEARS OF OPERATION
1970 BEGINNING 1978 ENDING ___ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Trash, tires, road-side debris. It is stated on the Hazardous Waste Site ID form that is not known if hazardous waste was dumped on site.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Results of sampling off USGS well #81-4 indicate presence of PCB's, phenols, and pesticides between 11/81 and 6/83. Potential hazard if groundwater migrates to local water supply wells. The PCB's and phenols were slightly above established groundwater levels.

IV. 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) X B. MEDIUM (Inspection required) ___ C. LOW (Inspection on time available basis) ___ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Diana Messina	U.S. EPA Region II Edison, NJ	(201) 321-6685

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Dennis Sutton		NUS FIT II	(201) 225-6160	3 /12 / 86

EPA FORM 2070-12 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D008915506

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

X A. SOLID
_ B. POWDER, FINES
_ C. SLUDGE
_ D. OTHER: _____ (Specify)
_ E. SLURRY
_ F. LIQUID
_ G. GAS

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

TONS Unknown
CUBIC YARDS Unknown
NO. OF DRUMS Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

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

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

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	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 (See specific references, e.g., state files, sample analysis, reports)

NY Department of Environment and Planning report on Clarence Redi-Mix, prepared 12/84.
USGS Topographical Map, Clarence, New York Quad.
Off-site reconnaissance of Clarence Redi-Mix conducted by NUS Corporation on 2/26/86.

EPA FORM 2070-12 (7-81)

II. HAZARDOUS CONDITIONS AND INCIDENTS

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

Potential exists for contaminates to migrate to local groundwater supply.

01. X B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: Unknown
02 _ OBSERVED (DATE: _____)
04 NARRATIVE DESCRIPTION
X POTENTIAL _ ALLEGED

Potential for surface water contamination from runoff and if groundwater migrates to surface water bodies. The site is less than ½ mile from Ransom Creek and approximately ½ mile from Ceder Swamp.

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

No potential for air contamination suspected at this time.

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

No potential for fire/explosive conditions suspected at this time.

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

There is low potential for direct contact, site is covered but is not fenced.

01 X F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: Unknown (ACRES)
02 _ OBSERVED (DATE: _____)
04 NARRATIVE DESCRIPTION
X POTENTIAL _ ALLEGED

There is potential for soil contamination since the site is not lined. Contamination is confined to areas of dumping.

01. X G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: Unknown
02 _ OBSERVED (DATE: _____)
04 NARRATIVE DESCRIPTION
X POTENTIAL _ ALLEGED

Low potential exists, drinking water taken from Niagara River.

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

No potential for worker exposure/injury, section of site in question is inactive.

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

Low potential exists if potentially contaminated groundwater migrates to private wells.

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED

Low potential exists, however no areas of stressed vegetation were observed.

01 X K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED

Potential exists if surface water is contaminated. The site is located in a rural area near streams and swamps.

01 _ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) _ POTENTIAL _ ALLEGED

No known potential at this time.

01 X M. UNSTABLE CONTAINMENT OF WASTES
(Spills/runoff/standing liquids/leaking drums)
03 POPULATION POTENTIALLY AFFECTED: _____

02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists since site is not lined and no known drainage system implemented.

01 X N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED

Potential exists from contaminated groundwater. Groundwater flow is in the direction of several sinkholes and an unprotected marshy area.

01 X O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED

Low potential exists for contaminated runoff or groundwater to reach sewers, storm drains and WWTPs.

01 X P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 _ OBSERVED (DATE: _____) _ POTENTIAL X ALLEGED

Illegal dumping of tires, trash, road side debris reported 12/78 - Erie County Department of Environment and Planning Report on Clarence Redi-Mix 12/84. The Potential Hazardous Waste site ID form states that it is unknown whether or not hazardous waste was dumped on site.

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

Sampling of USGS well #81-4 indicated slightly elevated levels for PCB's, phenols and nontoxic levels for pesticides.

III. TOTAL POPULATION POTENTIALLY AFFECTED: Unknown

IV. COMMENTS

*Site in question is closed and inactive but is adjacent to an active quarry operation owned by Redi-Mix.

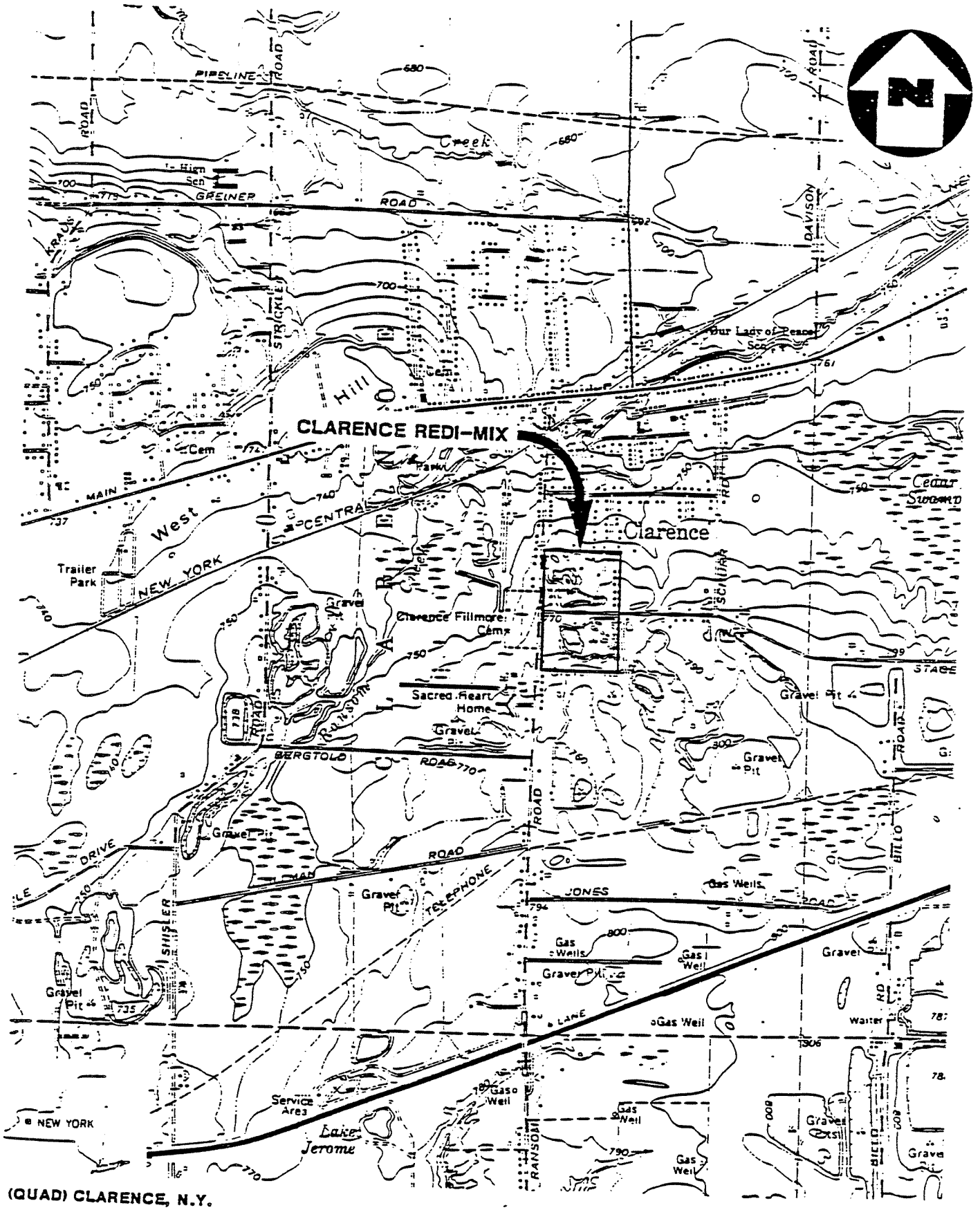
V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

Erie County Department of Environment and Planning report on Clarence Redi-Mix Ransom and Stage Roads, Clarence, New York
USGS Toporgraphical Map Clarence, New York Quad.
Logbook of off site reconnaissance of Clarence Redi-Mix conducted by Region II FIT, 2/26/86

EPA FORM 2070-12 (7-81)

APPENDIX A

MAPS AND PHOTOS



(QUAD) CLARENCE, N.Y.

SITE LOCATION MAP

CLARENCE REDI-MIX, CLARENCE, N.Y.

FIGURE 1

SCALE: 1"=2000'

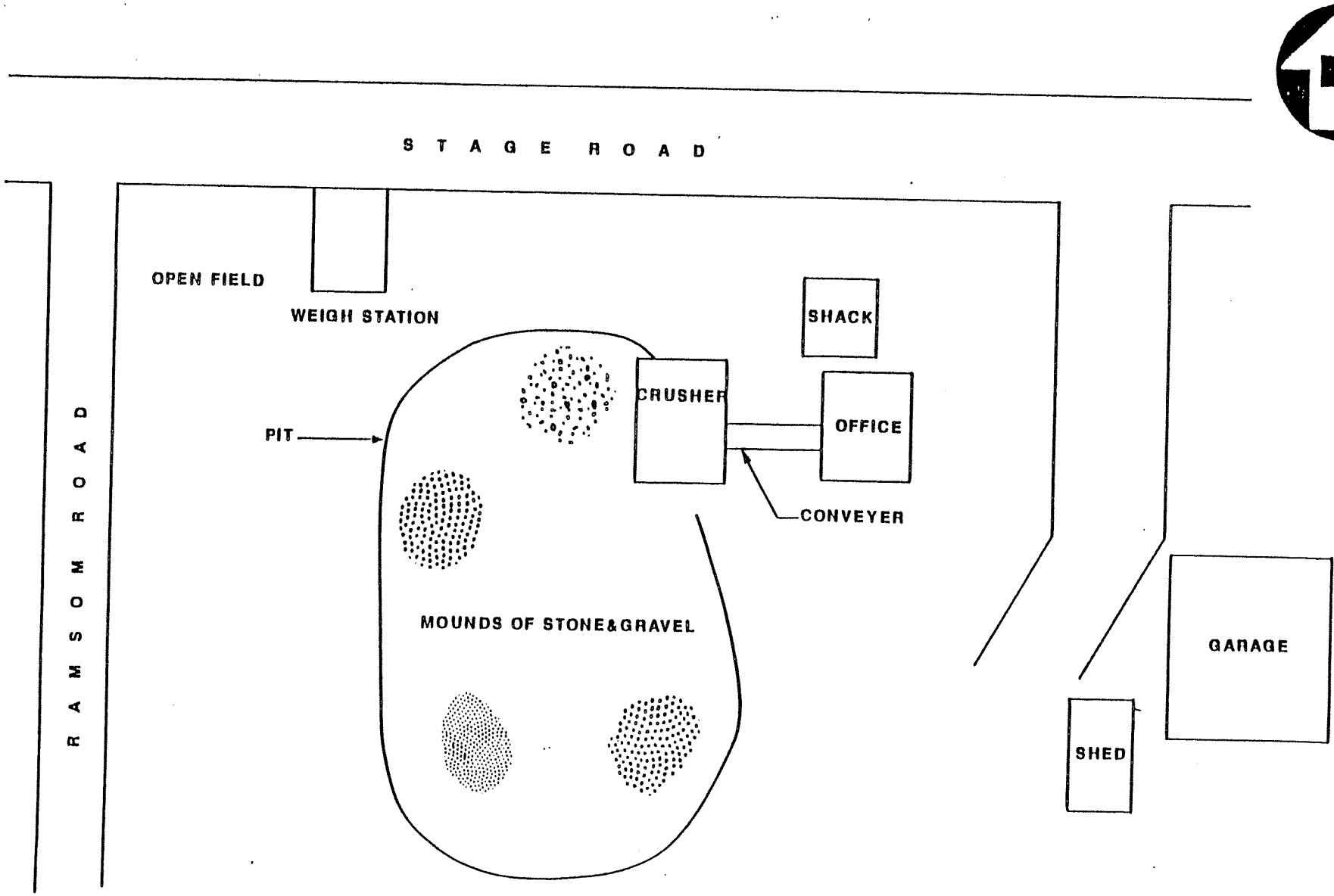


FIGURE 2

SITE MAP

CLARENCE REDI MIX, CLARENCE, N.Y.

(NOT TO SCALE)

NUS CORPORATION

A Halliburton Company

CLARENCE REDI-MIX
CLARENCE, NEW YORK
TDD# 02-8601-13
FEBRUARY 26, 1986

PHOTOGRAPH INDEX

CLARENCE REDI-MIX
CLARENCE, NEW YORK
TDD# 02-8601-13
FEBRUARY 26, 1986

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-1	Entrance to Clarence Redi-Mix looking south from Stage Road. Photographer: Joe Mayo.	1420
1P-2	Sign on entrance to site. Photographer: Joe Mayo.	1425
1P-3	Quarry pit with gravel piles as viewed looking southwest from Stage Road. Photographer: Joe Mayo.	1427
1P-4	Weigh station on site as viewed looking southeast from Stage Road. Photographer: Joe Mayo.	1428

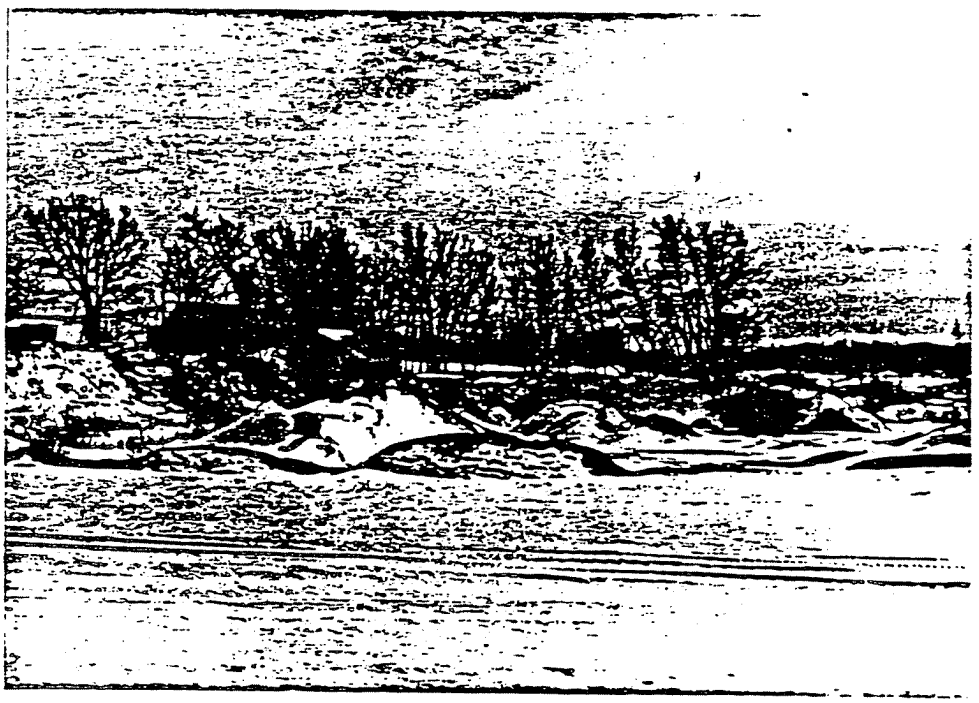
NUS CORPORATION

CLARENCE REDI-MIX, CLARENCE, NEW YORK

1P-1 February 26, 1986 1420
Entrance to Clarence Redi-Mix off of Stage Road.
Photographer: Joe Mayo.

1P-2 February 26, 1986 1425
Sign at entrance to site.
Photographer: Joe Mayo.

CLARENCE REDI-MIX, CLARENCE, NEW YORK



1P-3 February 26, 1986 1427
Quarry pit showing gravel piles and quarry operations buildings.
Photographer: Joe Mayo.

1P-4 February 26, 1986 1428
Weigh station on site.
Photographer: Joe Mayo.

APPENDIX B

BACKGROUND INFORMATION

REGION: 02

U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
DATA BASE UPDATED 02/10/13
T.1 - ERRIS TURNAROUND DOCUMENT

PAGE: 1,687
RUN DATE: 82/10/13
RUN TIME: 01:24:40

0005-0
02-8601-13/NYF8

SITE DATA
****

EPA ID NO.: NYD00891550G SHEET 01

(ACTION : *_* - FOR DATA ENTRY USE ONLY)

SF ID: *__* *__* *__* SITE NAME: CLARENCE READY-MIX SOURCE: S SOURCE COUNTS (NOT UPDATABLE)

__ *__* STREET: RANSOM & STAGE RDS CONG. DIST.: 38 NOTIS: 0

NATL PRIORITY: N CITY: CLARENCE ST: NY ZIP: 14031-____ STS: 1

HRS: *____.__* CNTY NAME: ERIE CNTY CODE: 029 HWDMS: 0

HRS DATE (YY/MM): *__/__* LATITUDE: *__/__/__.__* LONGITUDE: *__/__/__.__* COMPOSITE: 0

RESPONSE TERMINATION (CHECK ONE IF APPLICABLE): PENDING *_* NO FURTHER ACTION *_* OTHER: 0

ENFORCEMENT DISPOSITION (CHECK ANY THAT APPLY): NO VIABLE RESPONSIBLE PARTY *_* VOLUNTARY RESPONSE *_*

ENFORCED RESPONSE *_* COST RECOVERY *_*

EVENTS
******

	(ACTION - FOR DATE ENTRY USE ONLY)	EVENT TYPE	DATE (YY/MM) STARTED	DATE (YY/MM) COMPLETED	CONDUCTED BY: EPA	STATE	RESP/PARTY	OTHER	COUNTS
EVENTS	*_*	(A) SITE DISCOVERY (SD)		80/04					
	_	PRELIMINARY ASSESSMENT (PA)		*__/__*					
	_	SITE INVESTIGATION (SI)	*__/__*	*__/__*	*_*	*_*			
	_	REMEDIAL ACTION (RD)	*__/__*	*__/__*	*_*	*_*	*_*	*_*	*__*
	_	REMOVAL ACTION (RV)	*__/__*	*__/__*					*__*
ENFORCE EVENTS	*_*	ENFORCEMENT INVESTIGATION (EI)	*__/__*	*__/__*	*_*	*_*		*_*	
	_	ADMINISTRATIVE ORDER (AO)	*__/__*	*__/__*	*_*	*_*		*_*	
	_	JUDICIAL ACTION (JA)	*__/__*	*__/__*	*_*	*_*		*_*	

NEW YORK STATE ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS AND SOLID WASTE
BUREAU OF HAZARDOUS SITE CONTROL

QUARTERLY STATUS REPORT

PART - 1

DATE : 1/1/86

REGION : 9

COUNTY : Erie

SITE DESCRIPTION	CLASS	SITE CODE	--PHASE 1-- DATES START	--PHASE 1-- DATES END	--- PHASE 2 --- DATES START	--- PHASE 2 --- DATES END	NOT ROD	EPA ASM	DOH INSP DATE	REGULATORY STATUS RCRA	REGULATORY STATUS NUPL.	REGULATORY STATUS NPL.	-ENFORCEMENT- AGN	BTAT CODE	ACT CODE	REM PROG
Northern Demolition	2a	9-15-088	11/85	03/86	-----	-----	-	-	05/85	--	--	-	---	--	---	-
Fox Road Site	2a	9-15-089	11/84	06/85	03/86	12/86	-	-	06/85	--	57	-	---	--	---	-
Town of North Collins	2a	9-15-090	11/85	03/86	-----	-----	-	-	07/85	--	56	-	---	--	---	-
Town of Marilla	2a	9-15-093	11/85	03/86	-----	-----	-	-	08/85	--	51	-	---	--	---	-
City of Lackawanna	2a	9-15-094	11/85	03/86	-----	-----	-	X	06/85	--	54	-	---	--	---	-
James Fox Landfill	4	9-15-096	-----	-----	-----	-----	-	-	06/85	--	54	-	DEC	08	CNT	-
Butenkist	2a	9-15-098	-----	-----	-----	-----	-	-	07/85	--	--	-	---	--	---	-
Town of Amherst	2a	9-15-100	-----	-----	-----	-----	-	-	07/85	--	57	-	---	--	---	-
Bernard Cope	2a	9-15-102	11/85	03/86	-----	-----	-	-	07/85	--	--	-	---	--	---	-
Village of Depew	2a	9-15-105	11/85	03/86	-----	-----	-	-	07/85	--	57	-	---	--	---	-
Ed Ball Sanitation	2a	9-15-106	11/85	03/86	-----	-----	-	-	08/85	--	54	-	---	--	---	-
Eden Sanitation Service, Inc.	2a	9-15-107	-----	-----	-----	-----	-	-	08/85	--	54	-	---	--	---	-
Town of Evans	2a	9-15-109	-----	-----	-----	-----	-	-	08/85	--	57	-	---	--	---	-
Town of Evans	2a	9-15-110	11/85	03/86	-----	-----	-	-	06/85	--	51	-	---	--	---	-
George Schreiber	2a	9-15-112	-----	-----	-----	-----	-	-	07/85	--	57	-	---	--	---	-
US Steel - Eastern Division	2a	9-15-113	11/85	03/86	-----	-----	-	-	05/85	--	--	-	---	--	---	-
Clarence Ready Mix	2a	9-15-114	-----	-----	-----	-----	-	-	07/85	--	--	-	---	--	---	-
Bengart & Memel, Inc.	2	9-15-115	-----	-----	-----	-----	X	-	07/85	--	--	-	DEC	08	CNT	R
Wide Beach	2	9-15-119	-----	-----	-----	-----	X	-	07/85	--	--	A	---	--	---	F
Allied Chemical-Hopkins St. Site	2a	9-15-120	05/83	09/83	02/85	11/85	-	X	05/85	12	57	-	---	--	---	-

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

CLASSIFICATION CODE: 2a REGION: 9 SITE CODE: 915114

NAME OF SITE : Clarence Ready Mix
STREET ADDRESS: Ransom and Stage Roads

TOWN/CITY:	COUNTY:	ZIP:
Clarence	Erie	

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

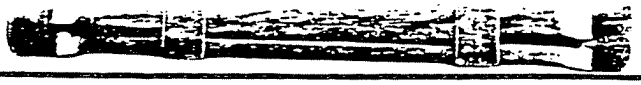
SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Clarence Ready Mix
CURRENT OWNER ADDRESS.: Ransom & Stage Rds., Clarence, NY 14031
OWNER(S) DURING USE...: Clarence Ready Mix
OPERATOR DURING USE...:
OPERATOR ADDRESS.....:
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From unknown To unknown

SITE DESCRIPTION:
Trash and miscellaneous debris illegally dumped at this site. Sampling and analysis of a nearby U.S.G.S. survey well has been underway since 1981. Data from Nov. 1981 until June 1983 is available. Erie County prepared a site profile report in Dec. 1984.

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected -X

TYPE	QUANTITY (units)
not known	not known

ORIG



EPA POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION II | SITE NUMBER N400001021 4

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME: CLARENCE READY MIX

B. STREET (or other identifier): RANSOM & STAGE ROADS

C. CITY: CLARENCE

D. STATE: N.Y.

E. ZIP CODE:

F. COUNTY NAME: ERIE

G. OWNER/OPERATOR (if known)

1. NAME: CLARENCE READY MIX

2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP (if known)

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

INACTIVE, OPEN DUMP.
TRASH & MISCELLANEOUS DEBRIS ILLEGALLY DUMPED.

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.)

HAZARDOUS WASTE DISPOSAL SITES IN NEW YORK STATE (LIST OF 6/1980)

K. DATE IDENTIFIED (mo., day, & yr.): 4/15/80

L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM

UNKNOWN - IF ANY HAZARDOUS WASTE DUMPED. QUANITY OF TRASH & MISC. DEBRIS NOT KNOWN.

ENVIRONMENTAL PROBLEMS: SITE SHOULD BE CLOSED PROPERLY.

HEALTH PROBLEMS: NONE KNOWN AT THIS TIME.

M. PREPARER INFORMATION

1. NAME: GEORGE B. RADAN

2. TELEPHONE NUMBER: 212 264-1576

3. DATE (mo., day, & yr.): 11/12/80

EPA Form 2070-8 (5-80)

SITE CODE: 915114

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater- Soil- Sediment- None-X

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: none State- Federal-
STATUS: In Progress- Completed-

REMEDIAL ACTION:

Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION: none

GEOTECHNICAL INFORMATION:
SOIL TYPE: Sandy clay, Gravel, Till over Bedrock
GROUNDWATER DEPTH: not known

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

The site should be closed properly. No evidence of any other major environmental problem. Although results from USGS well sampling may indicate the need for further investigation of this site.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigation
Air	Unlikely	Unlikely	Yes	Low
Surface Soil	Unlikely	Unlikely	Yes	Low
Groundwater	Unlikely	Unlikely	Yes	Low
Surface Water	Unlikely	Unlikely	Yes	Low

Health Department Site Inspection Date : 7/85

REFERENCE NO. 5

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

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

United States
Environmental Protection
Agency

1984

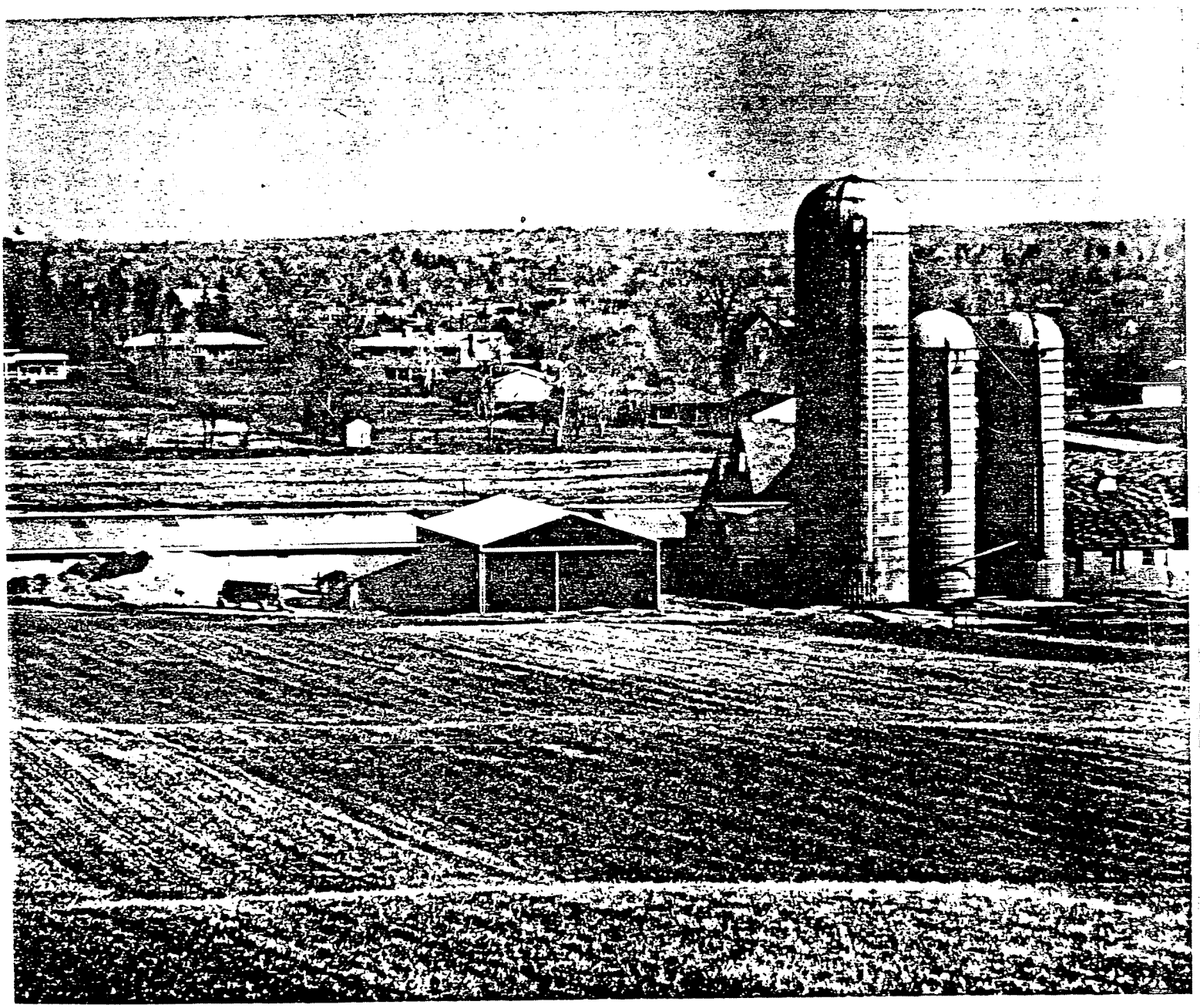
REFERENCE NO. 6

United States Department of Agriculture

Soil Conservation Service

In Cooperation with the Cornell University Agricultural Experiment Station

Soil Survey of Erie County, New York



friable, black to dark grayish brown well decomposed
ck. The mineral substratum below a depth of about
3 inches is dark gray to gray loam.
Included with this soil in mapping are small
termingled areas of the Canandaigua, Lamson, and
is soils that have a mucky surface layer. These soils
ed in organic deposits that are less than 16 inches
eep. The Canandaigua soils have a silty subsoil, the
mson soils have a high sand content in the subsoil,
the Lyons soils have gravel and stones mixed with
mineral material. These mineral soils generally are
arrow bands around the edge of this map unit or on
t rises within the unit. Also included in mapping are
ll areas of muck deposits deeper than 50 inches,
sually near the center of the mapped area. Areas of
cluded soils range up to 3 acres.
his Palms soil is subject to frequent flooding or
ding. It has a high water table at or near the soil
rface from November through May. Permeability is
derately slow to moderately rapid in the organic
rs and moderate or moderately slow in the loamy
ineral substratum. The available water capacity is high,
nd runoff and internal drainage are very slow. Bedrock
a depth of more than 6 feet. The organic layers
ge from strongly acid to moderately alkaline.
Palms muck, where drained, is well suited to special
ops and many field crops. It has very serious
ations for urban and recreational uses, mainly
ecause of excessive wetness, flooding, and instability.
lost of the acreage is in cattails and other water-
ant grasses, sedges, brush, and trees. A few areas
drained and farmed.
This Palms soil is well suited to many cultivated crops,
articularly vegetable crops, if it is properly drained.
nage usually requires a system of open ditches and
ubsurface drains. Drainage is extremely difficult to
stall in many areas because the soil is low on the
ndscape and suitable outlets are not available. If the
is drained, keeping tillage to a minimum, using cover
rops, plowing at proper soil moisture level, and rotating
rops help maintain good tilth and reduce the loss of
anic matter. If this organic soil is drained and left idle
subject to wind erosion, but by maintaining
indbreaks and cover crops or sod crops on the soil this
ard is reduced. Using equipment that minimizes soil
mpaction helps maintain tilth and a good rate of water
ercolation through the soil. Lettuce, onions, and
otatoes do very well in drained areas of this muck soil.
ndrained areas are usually poorly suited to pasture or
crops. Soil compaction and trampling of desirable
rasses are serious problems in pastured areas.
The potential of this soil for wood crops is poor
ecause of prolonged wetness. Use of equipment,
edling mortality, and uprooting of trees during
indstorms are very serious problems on this soil. Only
edlings that can withstand excessive wetness can be
own.

Prolonged wetness, seepage, excess humus, frequent flooding or ponding, compressibility, and high risk of frost damage are severe limitations for most urban and recreational uses of this soil. Many areas are suited to wetland wildlife habitat.

This Palms muck soil is in capability subclass Vw.

PbA—Palmyra gravelly loam, 0 to 3 percent slopes. This nearly level soil is deep and well drained. It is on flat terraces and plains in the northern part of the county. This loamy soil is derived from outwash deposits that have a relatively high content of sand and limestone gravel. Areas of this soil are large and oblong or irregular in shape, and range from 3 to 200 acres, but areas of 5 to 20 acres are most common.

Typically, this soil has a surface layer of very dark grayish brown gravelly loam 9 inches thick. The subsoil extends to a depth of 28 inches. It is brown gravelly loam in the upper part, brown gravelly heavy loam in the middle part, and brown gravelly light clay loam in the lower part. The grayish brown substratum is very gravelly loamy sand in the upper part and very gravelly sand in the lower part.

Included with this soil in mapping are small areas of the Phelps, Halsey, Arkport, and Minoa soils. The Phelps soils are not as well drained as this Palmyra soil and are on slightly lower terraces. The Halsey soils are in wet depressions and in other low areas. The well drained Arkport soils and the somewhat poorly drained Minoa soils are free of gravel and cobblestones. Also included are a few areas of a gently sloping soil. Areas of included soils range from 1/4 acre to 3 acres.

The permeability of this Palmyra soil is moderate in the surface layer and subsoil and very rapid in the substratum. The available water capacity is moderate, and runoff is slow. Depth to bedrock is 5 feet or more. Gravel makes up 15 to 30 percent of the surface layer. In unlimed areas, the surface layer is medium acid to neutral, and the subsoil is slightly acid to mildly alkaline.

This soil is well suited to farming and to many urban uses. Most of the acreage is urbanized or is farmed. A few small areas of this soil are idle.

This Palmyra soil is well suited to cultivated crops. Gravel in the surface layer interferes with the planting and harvesting of some specialized crops and causes more rapid wear of equipment. Keeping tillage to a minimum, using cover crops, incorporating crop residues into the soil, and occasionally including sod crops in the cropping system help maintain tilth and improve the organic matter content. This soil is suited to irrigated vegetable crops, and irrigation systems are easier to manage than on the more sloping Palmyra soil.

Pasture and hay crops also do well on this soil. Overgrazing restricts plant growth and can cause the loss of the pasture plants. Proper stocking, rotation of pastures, yearly mowing, and deferment of grazing when

is wet or extremely dry are the chief gement needs.

potential of this soil for wood crops is good, ugh only a very few areas are wooded. There are estrictions for the use of equipment on this soil. on is not a hazard, and seedling mortality and the oting of trees are generally not a problem, but lings should be planted early in the spring when the moist. Most areas are suited to machine planting dlings.

soil has only a few limitations for urban and ation uses. The rapid leaching of septic tank orption fields can contaminate the ground water use the substratum is very rapidly permeable. vel is bothersome when lawns and gardens are being blished and is a serious limitation for playgrounds athletic fields. The substratum is usually an excellent ce of sand and gravel.

Palmyra soil is in capability class I.

PbB—Palmyra gravelly loam, 3 to 8 percent slopes. gently sloping soil is deep and well drained. It is on ulating terraces and plains in the northern part of the nty. This loamy soil is derived from outwash deposits have a relatively high content of sand and limestone vel. Areas of this soil are large and irregular in shape, range from 3 to 200 acres, but areas of 5 to 20 es are most common.

Typically, this soil has a surface layer of very dark yish brown gravelly loam 9 inches thick. The subsoil ends to a depth of 28 inches. It is brown gravelly in the upper part, brown gravelly heavy loam in the dle part, and brown gravelly light clay loam in the er part. The grayish brown substratum is very gravelly y sand in the upper part and very gravelly sand in lower part.

luded with this soil in mapping are small areas of Phelps, Halsey, Arkport, and Minoa soils. The Phelps are not as well drained as this Palmyra soil and are oot slopes. The Halsey soils are in wet depressions other low areas. The well drained Arkport and the what poorly drained Minoa soils are free of gravel cobblestones and are in dominantly sandy deposits. included are a few areas of a nearly level soil. of included soils range from 1/4 acre to 3 acres.

permeability of this Palmyra soil is moderate in the ce layer and subsoil and very rapid in the tum. The available water capacity is moderate, runoff is medium. Depth to bedrock is 5 feet or Gravel makes up 15 to 30 percent of the surface In unlimed areas, the surface layer is medium acid tral, and the subsoil is slightly acid to mildly

soil is well suited to farming and to many urban Most of the acreage is urbanized or is farmed. A areas are idle.

This Palmyra soil is suited to cultivated crops. Gravel in the surface layer interferes with the planting and harvesting of some specialized crops and also causes more rapid wear of equipment. Erosion is a moderate hazard in intensively cultivated areas. Keeping tillage to a minimum, using cover crops, incorporating crop residues into the soil, tilling across slopes and including sod crops in the cropping system help maintain tilth, control erosion, and improve the organic matter content. This soil is suited to irrigation of vegetable crops, but irrigation systems are more difficult to manage than on the nearly level Palmyra soil.

Pasture and hay crops also do well on this soil. Overgrazing can restrict plant growth and cause the loss of the pasture plants. Proper stocking, rotation of pastures, yearly mowing, and deferment of grazing when the soil is wet or extremely dry are the chief management needs. This soil seldom needs liming.

The potential of this soil for wood crops is good, although only a very few areas are wooded. There are few restrictions in the use of equipment on this soil. Erosion is not a hazard, and seedling mortality and the uprooting of trees are generally not problems, but seedlings should be planted early in the spring when the soil is moist. Most areas are suited to machine planting of seedlings.

This soil has only a few limitations for urban and recreational uses. Most areas are excellent homesites, but disturbed areas should be reseeded as soon after construction as possible to prevent erosion and sedimentation. The leaching of septic tank absorption fields can contaminate the ground water because the substratum is very rapidly permeable. Gravel is bothersome when lawns and gardens are being established and is a serious limitation for playgrounds and athletic fields. The substratum is usually an excellent source of sand and gravel.

This Palmyra soil is in capability subclass IIe.

Pc—Patchin silt loam. This nearly level soil is moderately deep and poorly drained and very poorly drained. It formed in a mantle of glacial till underlain by shale bedrock. It is in depressional areas of uplands that receive runoff from adjacent soils. Slope is 0 to 3 percent. Areas of this soil are oblong or irregular in shape and range from 3 to 80 acres, but areas of 5 to 40 acres are most common.

Typically, this soil has a surface layer of mottled, dark grayish brown silt loam about 10 inches thick. The subsurface layer is mottled, light brownish gray silt loam about 4 inches thick. The subsoil extends to a depth of 23 inches. It is mottled, dark grayish brown light silty clay loam in the upper part and is mottled, grayish brown shaly silt loam in the lower part. Soft shale bedrock is at a depth of 23 inches.

Included with this soil in mapping are small intermingled areas of the Hornell, Derb, and Orpark soils.

investigations are essential, and each site must be considered individually.

Pits, borrow, have not been assigned a capability subclass.

Pu—Pits, gravel. This unit consists of excavated areas from which gravel has been removed for construction purposes. They are usually 5 to about 50 feet deep. The soils in these areas have a high sand and gravel content. Pit sides are mostly steep, and the floor is relatively level. Piles of stones and boulders and sloughed materials are commonly scattered over the floor. Small pools of water are common in low parts of some of the pits, particularly in the spring. These excavated areas are commonly irregular in shape, depending on the nature of the soil deposits and ownership boundaries, and they range from 3 to 200 acres or more.

Pits are usually devoid of vegetation; however in some of the older ones there are scattered bushes and grass. Pits are droughty because of the very low available water capacity of the soil. Permeability varies, but usually it is moderately rapid to very rapid.

These miscellaneous areas are generally not suited to farming and woodland because the topsoil has been removed and the subsoil material is not suitable for root development. The potential of these areas is usually poor for wildlife habitat, although some animals and birds may find shelter or refuge in these areas.

The suitability of these areas for urban and recreational uses ranges from good to poor. Onsite investigations are essential and each site must be considered individually.

Pits, gravel, have not been assigned a capability subclass.

Qu—Quarries. These are open pits created by removing limestone rock for agricultural, industrial, and construction purposes. They are mainly in the northern part of the county, and the surrounding soils are usually shallow over bedrock. The excavated areas are usually 20 to 100 feet deep. They are irregular in shape, depending on the nature of the bedrock strata and ownership boundaries. They range from 3 to 125 acres or more.

Quarries are generally devoid of vegetation; however, in some of the older quarries, scattered plants and grass have become established in cracks where the bedrock has weathered and some soil has accumulated. Piles of stones and boulders are commonly scattered over the quarry floor. Included in mapping are small pools of water on many of the quarry floors. The entire floor of some abandoned quarries is covered with water up to several feet deep.

The suitability of abandoned areas for some urban and recreational uses ranges from poor to fair. Onsite investigation is necessary, and each site is considered individually for any proposed use.

Some areas are well suited to educational uses, such as outdoor classrooms for studying the bedrock geology of the region. Onsite investigation is needed to determine the feasibility of using Quarries for such purposes.

Abandoned Quarries are usually poorly suited to farming and woodland becuase of the lack of soil material. Some areas provide habitat for certain kinds of wildlife and birds, and a few areas that are ponded contain fish and other aquatic animals. Boating is also possible in some of the pits that are ponded. Where trash and other wastes are dumped in abandoned quarries there is a hazard of pollution of the water table by seepage through the cavernous and fractured limestone bedrock.

Quarries are not assigned a capability subclass.

RaA—Raynham silt loam, 0 to 3 percent slopes. This level or nearly level, silty soil is deep and somewhat poorly drained. It is mainly on broad plains in the lowlands in the northern part of the county and in small pockets on the upland plateau. Areas of this soil are irregular in shape or roughly elongated where they parallel streams. Most areas range from 50 to 200 acres or more, but in the uplands, areas range from 3 to 50 acres in size.

Typically, this soil has a surface layer of dark grayish brown silt loam about 8 inches thick. The subsoil is about 18 inches thick. It is mottled, yellowish brown silt loam. The substratum extends to a depth of 60 inches. The upper part is mottled, yellowish brown silt loam, and the lower part is grayish brown fine sand.

Included with this soil in mapping are small areas of the Minoa and the Niagara soils. The Minoa soils are more sandy and the Niagara soils are more clayey than this Raynham soil. Also included are soils that are similar to this Raynham soil but have a dense fragipan in the subsoil. In some areas, particularly in the uplands, the subsoil is more acid than is typical for this Raynham soil. Areas of included soils range from 1/2 acre to 3 acres.

From November through June this Raynham soil has a seasonal high water table in the upper part of the subsoil. Permeability is moderate or moderately slow in the subsoil and slow in the substratum. The available water capacity is high, and internal drainage and runoff are slow. There is usually no gravel in this soil, and bedrock is more than 5 feet deep. The surface layer and subsoil are strongly acid to neutral.

This soil is moderately suited to farming but poorly suited to many urban uses. Most of the acreage is in hay, pasture, woodland, or it is idle. Some areas of the soil are in residential development.

The suitability of this Raynham soil for cultivated crops can be improved with drainage. In undrained areas, seasonal wetness delays planting until late spring.

REFERENCE NO. 7

The National Register of Historic Places

1976

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.

5-76

Sylvan Lake vicinity. *SYLVAN LAKE ROCK SHELTER*, (7-12-74) PH0000385
Tivoli vicinity. *MONTGOMERY PLACE (CHATEAU DE MONTGOMERY)*, S of Tivoli, (5-2-75)

erie county

Buffalo. *ALBRIGHT-KNOX ART GALLERY*, 1285 Elmwood Ave., in Delaware Park, (5-27-71) PH0009458
Buffalo. *BUFFALO GAS LIGHT COMPANY WORKS*, 249 W. Genesee St., (9-1-76)
Buffalo. *BUFFALO STATE HOSPITAL*, 400 Forest Ave., (1-12-73) PH0009466 HABS.
Buffalo. *COUNTY AND CITY HALL*, 95 Franklin St., (5-24-76)
Buffalo. *DELAWARE AVENUE HISTORIC DISTRICT*, W. side of Delaware Ave. between North and Bryant Sts., (1-17-74) PH0009474
Buffalo. *GUARANTY BUILDING (PRUDENTIAL BUILDING)*, Church and Pearl Sts., (3-20-73) PH0009491 NHL; HABS.
Buffalo. *MACEDONIA BAPTIST CHURCH*, 511 Michigan Ave., (2-12-74) PH0009482
Buffalo. *MARTIN, D. D., HOUSE COMPLEX*, 123 Jewett Pkwy., (12-30-75) HABS.
Buffalo. *PIERCE ARROW FACTORY COMPLEX*, Elmwood and Great Arrow Aves. (10-1-74) PH0031721
Buffalo. *SHEA'S BUFFALO THEATER*, 646 Main St., (5-6-75)
Buffalo. *ST. PAUL'S EPISCOPAL CATHEDRAL*, 125 Pearl St., (3-1-73) PH0009504 HABS.
Buffalo. *THEODORE ROOSEVELT INAUGURAL NATIONAL HISTORIC SITE*, Delaware Ave., (11-2-66) PH0201111
Buffalo. *U.S. POST OFFICE*, 121 Ellicott St., (3-16-72) PH0009521 HABS.
Cheektowaga. *CHAPEL OF OUR LADY HELP OF CHRISTIANS*, 4125 Union Rd., (12-14-78)
East Aurora. *FILLMORE, MILLARD, HOUSE*, 24 Shearer Ave., (5-30-74) PH0290467 NHL.
East Aurora. *ROYCROFT CAMPUS*, Main and W. Grove Sts., (11-8-74) PH0030279
Irving. *THOMAS INDIAN SCHOOL*, NY 438 on Cattaraugus Reservation, (1-25-73) PH0009512

essex county

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County*
Crown Point. *FORT ST. FREDERIC*, Jct. of NY 8 and 9N, (10-15-66) PH0131989 NHL.
Crown Point vicinity. *FORT CROWN POINT*, Crown Point Reservation, SW of Lake Champlain Bridge and NY 8, (11-24-68) NHL.
Essex and vicinity. *ESSEX VILLAGE HISTORIC DISTRICT*, Town of Essex and surroundings on W bank of Lake Champlain, (5-28-75)
Essex vicinity. *CHURCH OF THE NAZARENE*, W of Essex on NY 22, (6-19-73) PH0009547 G.
Essex vicinity. *OCTAGONAL SCHOOLHOUSE*, On Rte. 22 in Bouquet, (1-17-73) PH0009571
Ironville. *IRONVILLE HISTORIC DISTRICT*, (12-27-74) PH0084808
Lake Placid (North Elba). *BROWN, JOHN, FARM*, John Brown Rd., (6-19-72) PH0009563
Port Kent. *WATSON, ELKANAH, HOUSE*, 3 mi. E of U.S. 9, (10-15-66) PH0131873 NHL.
Tahawus vicinity. *ADIRONDACK IRON AND STEEL COMPANY: UPPER WORKS*, N of Tahawus at Henderson Lake, (10-5-77)
Ticonderoga vicinity. *FORT TICONDEROGA*, 2.5 mi. S of Ticonderoga on NY 22, (10-15-66) PH0132357 NHL.

franklin county

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County* (1-2-74)
Malone. *HORTON GRISTMILL*, Mill St., (4-21-75)
Malone. *LINCOLN, ANSELM, HOUSE*, 49 Duane St., (4-21-75)
Malone. *MALONE FREIGHT DEPOT*, 99 Railroad St., (12-12-76)
Malone. *PADDOCK BUILDING*, 34 W. Main St., (11-7-76)

fulton county

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County*
Dolgeville. *DOLGE COMPANY FACTORY COMPLEX*, S. Main St., (9-17-74) (also in Herkimer County)
Gloversville. *GLOVERSVILLE FREE LIBRARY*, 58 E. Fulton St., (5-24-76)
Gloversville. *KINGSBORO HISTORIC DISTRICT*, Area surrounding Kingsboro Ave. Park to N side of cemetery and S to include both sides of Gregory St., (2-24-75)
Johnstown. *FULTON COUNTY COURTHOUSE (TRYON COUNTY COURTHOUSE)*, N. William St., (7-24-72) PH0009580 HABS.
Johnstown. *JOHNSON HALL*, Hall St., (10-15-66) PH0131806 NHL; HABS.

genesee county

Alexander. *ALEXANDER CLASSICAL SCHOOL*, Buffalo St., (10-25-73) PH0009598
Batavia. *BATAVIA CLUB (BANK OF GENESEE)*, Main and Bank Sts., (6-19-73) PH0009601
Batavia. *GENESEE COUNTY COURTHOUSE*, Main and Ellicott Sts., (6-18-73) PH0009610
Batavia. *HOLLAND LAND OFFICE*, W. Main St., (10-15-66) PH0046540 NHL.
Batavia. *RICHMOND MEMORIAL LIBRARY*, 19 Ross St., (7-24-74) PH0009636
Morganville. *MORGANVILLE POTTERY FACTORY SITE*, Morganville Rd. off NY 237, (2-15-74) PH0009628
Stafford. *STAFFORD VILLAGE FOUR CORNERS HISTORIC DISTRICT*, Jct. U.S. 5 and U.S. 237, (10-8-76)

greene county

Athens vicinity. *WEST ATHENS HILL SITE*, W of Athens, (3-20-73) PH0009661
Catskill. *COLE, THOMAS, HOUSE*, 218 Spring St., (10-15-66) PH0131814 NHL.
Catskill. *SUSQUEHANNAH TURNPIKE*, Beginning at Catskill, follows the Mohican Trail (NY 145) and CR 20 and 22 NW to the Schoharie County line, (1-2-74) PH0009652
Coxsackie vicinity. *BRONCK, PIETER, HOUSE*, 2 mi. W of Coxsackie on W side of U.S. 9W, (12-24-67) PH0132756 NHL.
Coxsackie vicinity. *FLINT MINE HILL ARCHEOLOGICAL DISTRICT*, Eastern Greene County, (11-29-78)
Earlton vicinity. *FORESTVILLE COMMONWEALTH*, NW of Earlton off NY 81, (11-20-74) PH0031534
Greenville vicinity. *PREVOST MANOR HOUSE (HUSH-HUSH FARM)*, W of Greenville off NY 81, (11-15-72) PH0009644

hamilton county

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County*
Blue Mountain. *BLUE MOUNTAIN HOUSE ANNEX*, NY 30, (12-7-77)
Blue Mountain Lake vicinity. *CHURCH OF THE TRANSFIGURATION*, N of Blue Mountain Lake on NY 30, (7-26-77)
Racquette Lake vicinity. *SAGAMORE*, Off NY 28 at W end of Sagamore Lake, (1-11-76)

herkimer county

ADIRONDACK FOREST PRESERVE, *Reference—see Clinton County* (1-2-74)
DOLGE COMPANY FACTORY COMPLEX, *Reference—see Fulton County* (1-2-74) PH0084794
Cold Brook. *COLD BROOK FEED MILL*, NY 8, (10-9-74) PH0031691
Danube. *HERKIMER HOUSE*, Near NY 5 S., (2-12-71) PH0009725
East Herkimer vicinity. *FORT HERKIMER CHURCH (REFORMED PROTESTANT DUTCH CHURCH OF GERMAN FLATTS)*, NY 5S, (7-24-72) PH0009679 HABS; G.
Herkimer. *HERKIMER COUNTY COURTHOUSE*, 320 N. Main St., (1-14-72) PH0009733 G.
Herkimer. *HERKIMER COUNTY HISTORICAL SOCIETY (DR. A. WALTER SUITER HOUSE)*, 400 N. Main St., (4-13-72) PH0009695
Herkimer. *HERKIMER COUNTY JAIL*, 327 N. Main St., (1-14-72) PH0009709 HABS; G.
Herkimer. *REFORMED CHURCH, THE*, 405 N. Main St., (3-16-72) PH0009741 G.
Ilion. *REMINGTON STABLES*, 1 Remington Ave., (10-29-76)
Indian Castle vicinity. *INDIAN CASTLE CHURCH*, NY 5S, (2-18-71)
Little Falls. *HERKIMER COUNTY TRUST COMPANY BUILDING*, Corner of Ann and Albany Sts., (3-5-70) PH0009717
Salisbury Center. *SALISBURY CENTER COVERED BRIDGE*, Fairview Rd. over Spruce Creek, (6-19-72) PH0009750

jefferson county

Adams vicinity. *TALCOTT FALLS SITE*, U.S. 11 at jct. with Old Rome State Rd., (6-5-74) PH0009792
Alexandria Bay. *CORNWALL BROTHERS' STORE*, 2 Howell Pl., (5-2-75)
Alexandria Bay vicinity. *BOLDT, GEORGE C., YACHT HOUSE*, NW of Alexandria Bay on Wellesley Island, (4-26-78)
Black River vicinity. *LERAY MANSION*, NE of Black River on Camp Drum Military Reservation, (7-11-74) PH0044032
Cape Vincent. *LERAY, VINCENT, HOUSE (STONE HOUSE)*, Broadway (NY 12E), (11-15-73) PH0009784
Cape Vincent vicinity. *FORT HALDIMAND SITE*, NE of Cape Vincent, (12-15-78)
Mannsville vicinity. *PIERREPONT MANOR COMPLEX*, N of Mannsville on Ellisburg St., (9-15-77)
Sackets Harbor. *CAMP, ELISHA, HOUSE (BRICK CAMP MANOR)*, 310 General Smith Dr., (4-23-73) PH0009768
Sackets Harbor. *MADISON BARRACKS*, Military Rd., (11-21-74) PH0132977
Sackets Harbor. *SACKETS HARBOR BATTLEFIELD*, Coastline and area from Sackets Harbor SW to and including Horse Island, (12-31-74) PH0132985
Sackets Harbor. *UNION HOTEL*, Main and Ray Sts., (6-19-72) PH0009806 G.

5-77

ing, portico moved, 1890's addition, 20th C interior alterations; restored. Greek Revival Built for officers' quarters as part of Pomsett 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 [illegible] 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.*

set in almost round recesses, decorative ork and bargeboards, stone quoins and 1st-story window with stained glass om. Original L-shaped structure enlarged redecorated with Queen Anne elements. th C. *Private.*

keepsie. **LOCUST GROVE (SAMUEL F. ORSE HOUSE)**, 370 South St., 1830. clapboarding; 2 stories, modified T gabled roof, interior chimneys, ed cornice, projecting octagonal wings, ry stuccoed end tower with round arched ows, porch with latticework fascia and carriage house extension with large arched openings; substantially expanded g Morse's ownership. Italianate. Home 1847 of Samuel F. B. Morse, inventor of graph and a noted artist who had stu- nd traveled in England and Europe. *not accessible to the public:* NHL.

hkeepsie. **MAIN BUILDING, VASSAR GE,** Vassar College campus, Mid-19th es Renwick, architect. Brick, 4 stories 5-story pavilions, U-shaped, mansard roof tuated by towers and central convex man- tion. One of the earliest Second Empire s in the U.S.; reputedly designed after C. Tuileries Palace. School founded by ew Vassar, Poughkeepsie philanthropist oneered higher education for women.

GHKEEPSIE. **MILL STREET-NORTH VER STREET HISTORIC DISTRICT,**)th C.. Residential area containing y 2–3-story brick houses from post- War period in styles ranging from Greek al to those of the Victorian period; nota- he numerous Second Empire structures Queen Anne Italian Center (see also Center, NY). Eastern section became civic and cultural center under direction assar family. *Multiple public/private.*

epsie. **POUGHKEEPSIE CITY HALL,** Main St., 1831. Brick, 2 stories, rectangu- abled roof, denticulated cornice, front alustraded frame belfry with hipped ar cupola with pyramidal roof, front entrance with transom and side lights; stone trim including wide belt course stories, lintels, and sills; 2 brick addi- tered. Greek Revival. Built as market ıage hall, presumably with open 1st-floor t area; served as post office, 1865–1886. *al.*

epsie. **SECOND BAPTIST CHURCH,** ssar St., Mid-19th C.. Brick base, frame, siding; 1 1/2 stories over high basement, lar temple-form, gabled roof, interior nneys, entablature surrounding build- ont tetrastyle Doric pedimented portico alustrade, oculus in tympanum, and 2 en- with shouldered architraves; side side rectangular windows, each with e and shouldered architrave; altered. Revival. Property originally purchased 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 the late-18th and early-19th C. *Private*

Rhinebeck. **DELAMATER, HENRY, HOUSE,** 44 Montgomery St., 1844. Alexander Jackson Davis, architect. Frame, board-and-batten siding; modified rectangle, hipped roof with cross gable, each end with final interior chimneys, carved scalloped bargeboards, 3 front Tudor arched openings, 1-story 3-bay-wide porch with carved flat posts and brackets forming Tudor arches, balustraded deck; center 2nd story and attic, each with rectangular window under blind pointed arch with tracery; each side with bay window; interior designed by architect to harmonize with exterior design; rear veranda enclosed and extended; board-and-batten carriage house. Excellent example of Gothic Revival cottage design advocated by Alexander Jackson Davis and Andrew Jackson Downing. *Private.*

Sylvan Lake vicinity. **SYLVAN LAKE ROCK SHELTER,** 5000 B.C.–700 A.D. Undisturbed stratified rock shelter; served as winter camp for Archaic hunters beginning c. 5000 B.C. Excavations between 1964 and 1966 revealed numerous remains of the Sylvan Lake Culture (c. 2500 B.C.), elements of the Susquehanna Tradition (c. 1500–1000 B.C.), and Middle and Late Woodland deposits. *Private*

ERIE COUNTY

Buffalo. **ALBRIGHT-KNOX ART GALLERY,** 1285 Elmwood Ave., in Delaware Park, 1900–1905, Edward B. Green, architect. Partially marble faced, 2 stories, modified H shape, gabled roof sections–E pedimented Ionic entrance portico flanked by colonnaded wings ending in pavilions, each with caryatids by Augustus Saint Gaudens; W semielliptical Ionic porch flanked by colonnaded sections; interior sculpture courtyard. Neo-Classical Revival. Built to permanently house the collections of the Buffalo Fine Arts Academy. *Private.*

Buffalo. **BUFFALO STATE HOSPITAL,** 400 Forest Ave., 1871–1890. Henry Hobson Richardson, architect. Random rough ashlar sandstone, brick; 3 1/2 stories above high basement, main block with 5 W. wards and 2 E. wards, gabled and hipped roof sections, gabled and flared hipped dormers, front entrance recessed under 3-bay arcade flanked by projecting pavilion; 2 main-block towers with steeply hipped roofs, shed dormers, and corner turrets; machicolations, rectangular and segmental arched windows, wings with projecting cross-gable sections; 3 wards removed, 1960's; 4 service buildings; site plan by Frederick Law Olmsted. Richardsonian Romanesque elements. Early development example of Henry Hobson Richardson's work. *State.* HABS

Buffalo. **DELAWARE AVENUE HISTORIC 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 dwellings. Era's Neo-Classical and Georgian Revival styles

Hamburg. *Bethany Chapel (Hamburg Presbyterian Church)* 103 Hamburg Tpke. (2-29-80)
Wallpack Center vicinity. *Peters Valley Historic District.* Sandyston-Haney's Mill, Walpack, and Kuhn Rds. (2-29-80)

Union County

Fanwood. *Central Railroad of New Jersey (Fanwood Railroad Station Complex)* 238 North Ave. (7-17-80)
New Providence vicinity. *Feltville Historic District.* S of New Providence (6-6-80)

Warren County

Belvidere. *Belvidere Historic District.* Off U.S. 46 (10-3-80)
Vienna vicinity. *Mount Bethel Methodist Church.* S of Vienna on Mount Bethel Rd. (2-29-80)

NEW MEXICO

ANASAZI SITES WITHIN THE CHACOAN INTERACTION SPHERE THEMATIC RESOURCES. Reference—see individual listings under McKinley and San Juan Counties.

Bernalillo County

Albuquerque. *Hope Building.* 220 Gold St., SW. (8-29-80)
Albuquerque. *Pacific Desk Building.* 213-215 Gold Ave., SW. (9-30-80)

Grant County

San Juan vicinity. *Wheaton-Smith Site* (7-23-80)
San Lorenzo vicinity. *Janss Site* (7-23-80)

Luna County

Deming. *Mahoney Building.* Gold and Spruce Sts. (9-30-80)

McKinley County

Crownpoint vicinity. *Casa De Estrella Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Crownpoint vicinity. *Dalton Pass Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Crownpoint vicinity. *Greenlee Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Crownpoint vicinity. *Haystack Archeological District (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Crownpoint vicinity. *Upper Kin Klizhin Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Fort Wingate vicinity. *Fort Wingate Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)

Otero County

LA LUZ TOWNSITE MULTIPLE RESOURCE AREA. This area includes: La Luz. *La Luz Historic District.* Off NM 83; *Garcia, Juan, House.* Tularosa St.; *Queen Anne House.* Kearny St.; *Sutheriana, D. H., House.* Main St. (10-23-80)

Rio Arriba County

Espanola. *Bond, Frank, House.* Bond St. (3-6-80)

Sandoval County

Bernalillo. *Abenicio Salazar Historic District.* U.S. 85 (6-6-80)
Corrales. *San Ysidro Church.* Church Rd. (7-30-80)
Guadalupe vicinity. *Guadalupe Ruin.* SE of Guadalupe (3-24-80)

San Juan County

Bloomfield vicinity. *Halfway House Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)
Bloomfield vicinity. *Twin Angels Archeological Site (Anasazi Sites Within the Chacoan Interaction Sphere Thematic Resources)* (10-10-80)

San Miguel County

Las Vegas. *Distrito de las Escuelas.* S. Pacific and S. Gonzales Sts. (3-18-80)
Las Vegas. *Ilfeld, Adele, Auditorium.* New Mexico Highlands University campus (1-8-80)

Santa Fe County

Santa Fe vicinity. *Acequia System of El Rancho de las Golondrinas.* 12 mi. SE of Santa Fe (2-1-80)

Socorro County

Magdalena. *MacDonald Merchandise Building.* U.S. 60 (9-25-80)

Taos County

Taos. *Fechin, Nicholai, House.* NM 3 (12-31-79)

Valencia County

Encinal. *Village of Encinal Day School* (8-8-80)

NEW YORK

INTERBOROUGH RAPID TRANSIT SUBWAY CONTROL HOUSES THEMATIC RESOURCES. Reference—see individual listings under Bronx, King, and New York counties.
Women's Rights Historic Sites Thematic Resources. Reference—see individual listings under Seneca County.

Albany County

Albany. *Abrams Building.* 55-57 S. Pearl St. (2-14-80)
Albany. *Center Square/Hudson-Park Historic District.* Roughly bounded by Park Ave., State, Lark and S. Swan Sts. (3-18-80)
Albany. *Downtown Albany Historic District.* Broadway, State, Pine, Lodge and Columbia Sts. (1-31-80)
Albany. *St. Peter's Episcopal Church.* 107 State St. (1-16-80) NHL
Alcove. *Alcove Historic District).* SR 11 and Alcove Rd. (7-24-80)
Guilderland. *Albany Glassworks Site* (7-22-80)

Allegheny County

Alfred. *Firemen's Hall.* 7 W. University St. (3-18-80)

Bronx County

Bronx. *Bronx Central Annex-U.S. Post Office.* 558 Grand Concourse (5-6-80)
Bronx. *Fonthill Castle and the Administration Building of the College of Mount St. Vincent.* W. 261st St. and Riverdale Ave. (7-11-80)
Bronx. *Mott Haven Historic District.* An irregular pattern along Alexander Ave. and E. 140th St. (3-25-80)
Bronx. *New York, Westchester and Boston Railroad Administration Building.* 481 Morris Park Ave. (4-23-80)
Bronx. *Poe Cottage.* 2640 Grand Concourse (8-19-80)
Bronx. *St. Ann's Church Complex.* 295 St. Ann's Ave. (4-16-80)
New York. *Mott Avenue Control House (Interborough Rapid Transit Subway Control Houses Thematic Resources).* 149th St. and Grand Concourse (5-6-80)

Broome County

Binghamton. *Roberson Mansion.* 30 Front St. (3-25-80)
Binghamton. *Rose, Robert H., House.* 3 Riverside Dr. (8-26-80)
Windsor. *Windsor Village Historic District.* College Ave., Academy, Chapel, Church, Dewey, Elm and Main Sts. (7-30-80)

Cayuga County

Auburn. *Case Memorial-Seymour Library.* 176 Genesee St. (5-6-80)

Chautauqua County

Dunkirk. *Point Gratiot Lighthouse Complex.* Sycamore Rd. (12-18-79)

Chemung County

Elmira. *Elmira Civic Historic District.* E. Church, Lake, E. Market, Baldwin, Carroll, and State Sts. (7-30-80)
Horseheads. *Horseheads 1855 Extension Historic District.* Grand Central Ave., Fletcher, Sayre, W. Mill and Center Sts. (7-30-80)

Columbia County

Claverack. *Double-Span Whipple Bowstring Truss Bridge.* Van Wyck Lane (4-17-80)
Hudson vicinity. *Wiswall, Oliver, House.* W of Hudson (9-4-80)

Delaware County

Franklin. *New Stone Hall.* Center St. (5-6-80)

Dutchess County

Fishkill vicinity. *Stony Kill Farm.* W of Fishkill on NY 9D (3-20-80)
Hyde Park. *Roosevelt, Eleanor, National Historic Site.* Violet Ave. (3-20-80)
Pawling. *Kane, John, House.* 126 E. Main St. (10-20-80)
Red Hook vicinity. *Heermance Farmhouse.* N of Red Hook on W. Kerley Corner Rd. (5-6-80)

Erie County

Buffalo. *Allentown Historic District.* Off NY 384 (4-21-80)
Buffalo. *Buffalo and Erie County Historical Society.* 25 Nottingham Ct. (4-23-80)
Buffalo. *Niagara Frontier Transit Buildings.* 855 Main St. (5-14-80)
Buffalo. *West Village Historic District.* Roughly bounded by S. Elmwood Ave.,

Chippewa, Georgia, Prospect, Carolina and Tracy Sts. (5–6–80)
Orchard Park, *Johnson-Ipills Complex*, S–4287 S. Buffalo St. (5–6–80)

Fulton County

Ephratah vicinity, *Garoga Site* (7–22–80)
Ephratah vicinity, *Klock Site* (7–22–80)
Ephratah vicinity, *Pagerie, Smith, Site* (4–22–80)

Genessee County

North Bergen, *Gifford-Walker Farm*, 7083 N. Bergen Rd. (1–10–80) (also in Orleans County)

Greene County

Coxsackie, *Reed Street Historic District*, Reed, Ely, Mansion, and River Sts. (5–6–80)

Jefferson County

Alexandria Bay vicinity, *Ingleside*, W of Alexandria Bay on Cherry Island (4–16–80)
Watertown, *Flower, Roswell P., Memorial Library*, 229 Washington St. (1–10–80)
Watertown, *Paddock Mansion*, 228 Washington St. (12–11–79)
Watertown, *Watertown Masonic Temple*, 240 Washington St. (1–23–80)

Kings County

Brooklyn, *Brooklyn Borough Hall*, 209 Joralemon St. (1–10–80)
Brooklyn, *Hanson Place Seventh Day Adventist Church*, 88 Hanson Pl. (4–23–80)
Brooklyn, *Kings County Savings Bank*, 135 Broadway (4–16–80)
Brooklyn, *Monsignor McColrick Park and Shelter Pavilion*, Bounded by Nassau and Driggs Aves., Russell and Monitor Sts. (5–6–80)
Brooklyn, *New Utrecht Reformed Church and Buildings*, 18th Ave. and 83rd St. (4–9–80)
Brooklyn, *Prospect Park*, Bounded by Parkside, Ocean and Flatbush Aves., Prospect Park W. and Prospect SW. (9–17–80)
Brooklyn, *Old Gravesend Cemetery*, Gravesend Neck Rd. and MacDonald Ave. (9–17–80)
Brooklyn, *Russian Orthodox Cathedral of the Transfiguration of Our Lord*, 228 N. 12th St. (4–16–80)
Brooklyn, *St. Bartholomew's Protestant Episcopal Church and Rectory*, 1227 Pacific St. (4–23–80)
Brooklyn, *State Street Houses*, 291–299, 290–324 State St. (1–17–80)
Brooklyn, *Twentythird Regiment Armory*, 1322 Bedford Ave. (5–8–80)
Brooklyn, *Williamsburgh Savings Bank*, 175 Broadway (4–9–80)
New York, *Atlantic Avenue Control House (Interborough Rapid Transit Subway Control Houses Thematic Resources)* Flatbush and Atlantic Aves. (5–6–80)
New York, *Bennett, Floyd, Field Historic District*, Flatbush Ave. (4–11–80)
New York, *Public School 39*, 417 6th Ave. (4–17–80)

Livingston County

Avon vicinity, *Barber-Mulligan Farm*, NE of Avon at 5403 Barber Rd. (5–19–80) (also in Monroe County)
Lima, *Hillcrest*, 7242 W. Main St. (5–6–80)
Oakland vicinity, *Edgerley*, S of Oakland at 9303 Creek Rd. (7–16–80)

Monroe County

BARBER-MULLIGAN FARM, Reference—see Livingston County.
Fairport, *DeLand, Henry, House*, 99 S. Main St. (4–17–80)
Fairport, *Wilbur House*, 187 S. Main St. (5–6–80)
Perinton, *Richardson's Tavern*, 1474 Marsh Rd. (5–6–80)

Montgomery County

Amsterdam, *Greene Mansion*, 92 Market St. (12–31–79)
Canajoharie vicinity, *Rice's Woods* (7–18–80)
Nelliston, *Nelliston Multiple Resource Area* This area includes: *Nelliston Historic District*, Prospect, River, Railroad and Berthoud St.; *Ehle, Peter, House*, E. Main St.; *Lasher-Davis House*, U.S. 5; *Nellis, Jacob, Farmhouse*, Nellis St.; *Walrath-Van Horne House*, W. Main St.; *Waterman-Gramps House*, School St. (9–27–80)

Nassau County

Manhasset, *Onderdonk, Horatio Gates, House*, 1471 Northern Blvd. (4–16–80)

New York County

New York *Alwyn Court Apartments* 180 W. 58th St. (12–26–79)
New York, *American Fine Arts Society*, 215 W. 57th St. (5–8–80)
New York, *American Radiator Building*, 40–52 W. 40th St. (5–7–80)
New York, *Ansonia Hotel*, 2101—2119 Broadway (1–10–80)
New York, *Association of the Bar of the City of New York*, 42 W. 44th St. (1–3–80)
New York, *Audubon Terrace Historic District*, Bounded by Broadway, Riverside Dr., W. 155th and W. 158th Sts. (5–30–80)
New York, *Bailey House*, 10 St. Nicholas Pl. (4–23–80)
New York, *Battery Park Control House (Interborough Rapid Transit Subway Control Houses Thematic Resources)* State St. and Battery Pl. (5–6–80)
New York, *Belnord Apartments*, 225 W. 86th St. (4–23–80)
New York, *Bowling Green Fence and Park*, Broadway and Beaver Sts. (4–9–80)
New York *Building at 45 East 66th Street* (5–6–80)
New York, *Building at 85 Leonard Street* (4–23–80)
New York, *Building at 378—380 Lafayette Street* (12–28–79)
New York, *Bouwerie Lane Theater*, 330 Bowery St. (4–23–80)
New York, *Bowery Savings Bank*, 130 Bowery St. (4–23–80)
New York, *Chanin Building*, 122 E. 42nd St. (4–23–80)
New York, *Chapel of the Intercession Complex and Trinity Cemetery*, 550 W. 155th St. (7–24–80)
New York, *Church of Notre Dame and Rectory*, 405 W. 114th St. and 40 Morningside Dr. (5–6–80)
New York, *Church of St. Ignatius Loyola Complex*, Park Ave., 83rd and 84th Sts. (7–24–80)
New York, *Church of the Holy Communion and Buildings*, 656–682 6th Ave. (4–17–80)
New York, *Church of the Immaculate Conception and Clergy House*, 408–414 E. 14th St. (3–28–80)
New York, *Church of the Transfiguration*, 25 Mott St. (4–16–80)
New York, *Claremont Stables (Claremont Riding Academy)* 173–177 W. 89th St. (4–16–80)
New York, *Control House on 72nd Street (Interborough Rapid Transit Subway Control Houses Thematic Resources)* W. 72nd St. and Broadway (5–6–80)
New York, *East 78th Street Houses*, 157, 159, 161, and 163–165 E. 78th St. (3–25–80)
New York, *East 80th Street Houses*, 116–130 E. 80th St. (3–26–80)
New York, *Eldridge Street Synagogue*, 12–16 Eldridge St. (3–28–80)
New York, *Federal Reserve Bank of New York*, 33 Liberty St. (5–6–80)
New York, *First Houses*, E. 3rd St. and Ave. A (12–18–79)
New York, *First Shearith Israel Graveyard*, 55–57 St. James Pl. (4–17–80)
New York, *Former Police Headquarters Building*, 240 Centre St. (3–28–80)
New York, *Gramercy Park Historic District*, Roughly bounded by 3rd and Park Aves. S., E. 18th and 22nd Sts. (1–23–80)
New York, *Harlem Courthouse*, 170 E. 121st St. (4–16–80)
New York, *Harlem River Houses*, 151st to 153rd St., Macombs Pl. and Harlem River Dr. (12–18–79)
New York, *Harvard Club of New York City*, 27 W. 44th St. (3–28–80)
New York, *Holy Trinity Church, St. Christopher House and Parsonage*, 312–316 and 332 E. 88th St. (5–30–80)
New York, *House at 37 East 4th Street* (1–3–80)
New York, *Knickerbocker Hotel*, 142 W. 42nd St. (4–11–80)
New York, *Lescaze House*, 211 E. 48th St. (5–19–80)
New York, *Marble Collegiate Reformed Church*, 275 5th Ave. (4–9–80)
New York, *Mariner's Temple*, 12 Oliver St. (4–16–80)
New York, *McGraw-Hill Building*, 328 W. 42nd St. (3–28–80)
New York, *Municipal Asphalt Plant*, Between 90th and 91st Sts. (5–23–80)
New York, *New Amsterdam Theater*, 214 W. 42nd St. (1–10–80)
New York, *New York City Marble Cemetery*, 52–74 E. 2nd St. (9–17–80)
New York, *New York Public Library, 115th Street Branch*, 203 W. 115th St. (5–6–80)
New York, *New York Public Library and Bryant Park*, Avenue of the Americas, 5th Ave., 40th and 42nd Sts. (10–15–66) NHL
New York, *No. 8 Thomas Street Building*, 8 Thomas St. (4–30–80)
New York, *Old Colony Club*, 120 Madison Ave. (4–23–80)
New York, *Old Grolier Club*, 29 E. 32nd St. (4–23–80)
New York, *Park Avenue Houses*, 680, 684, 686 and 690 Park Ave. (1–3–80)
New York, *Public Baths*, Asser Levy Pl. and E. 23rd St. (4–23–80)
New York, *Public School 33 (Public School 133)* 931 1st Ave. (10–27–80)
New York, *Rice, Isaac L., Mansion (Villa Julia)* 346 W. 89th St. (6–25–80)
New York, *Riverside-West 105th Street Historic District*, Roughly bounded by W. End Ave., Riverside Dr., W. 104th and W. 108th Sts. (8–19–80)

Otero County

Sacramento vicinity, *Circle Cross Ranch Headquarters*, SW of Sacramento (11–17–80)

Valencia County

Belen, *Belen Hotel*, 200 Becker Ave. (11–12–80)

NEW YORK

STONE HOUSES OF BROWNVILLE THEMATIC RESOURCES. Reference—individual listings under Jefferson County.

Albany County

Albany, *Knickerbocker and Armink Garages*, 72—74 (11–28–80)

Cayuga County

Aurora, *Aurora Village-Wells College Historic District*, NY 90 (11–19–80)

Chenango County

Oxford, *Burr, Theodore, House*, Fort Hill Sq. (9–11–81)

Dutchess County

Hyde Park, *Hyde Park Railroad Station*, River Rd. (9–11–81)

Erie County

Buffalo, *Dorsheimer, William, House*, 434 Delaware Ave. (11–21–80)

Buffalo, *Lafayette High School*, 370 Lafayette Ave. (12–3–80)

Franklin County

Paul Smiths, *Smith's, Paul, Hotel Store*, Paul Smith's College Campus (12–3–80)

Fulton County

Johnstown, *Fulton County Jail (Tryon County Jail)* Perry and Montgomery Sts. (10–19–81)

Greene County

Athens, *VILLAGE OF ATHENS MULTIPLE RESOURCE AREA*. This area includes: *Athens Lower Village Historic District*, Roughly bounded by Hudson River, NY 385, Vernon and Market Sts.; *Brick Row Historic District*, Off NY 385; *Stranahan-DelVecchio House*, N. Washington St.; *Van Loon, Albertus, House*, N. Washington St.; *Zion Lutheran Church*, N. Washington St. (11–28–80)

Jefferson County

Brownville, *Archer, William, House (Stone Houses of Brownville Thematic Resources)* 112 Washington St. (11–19–80)

Brownville, *Brown, Gen. Jacob, Mansion (Stone Houses of Brownville Thematic Resources)* Brown Blvd. (11–19–80)

Brownville, *Brownville Hotel (Stone Houses of Brownville Thematic Resources)* Brown Blvd. and W. Main St. (11–19–80)

Brownville, *Vogt House (Stone Houses of Brownville Thematic Resources)* 110 Main St. (11–19–80)

Brownville, *Walrath, Arthur, House (Stone Houses of Brownville Thematic Resources)* 114 Corner Pike (11–19–80)

Kings County

Brooklyn, *Park Slope Historic District*, Roughly bounded by Prospect Park West, Berkeley Pl., 15th St., 6th, 7th and Flatbush Aves., (11–21–80)

New York, *Parachute Jump*, Coney Island (9–2–80)

Livingston County

North Bloomfield, *North Bloomfield School*, 7840 Martin Rd. (5–28–81)

Madison County

Oneida, *Cottage Lawn*, 435 Main St. (11–6–80)

Monroe County

Riga, *Riga Academy*, 3 Riga-Mumford Rd. (11–21–80)

New York County

Liberty Island, *Statue of Liberty National Monument, Ellis Island and Liberty Island* (10–15–66) (also in Hudson County, NJ)

New York, *Houses at 83 and 85 Sullivan Street*, 83–85 Sullivan St. (11–17–80)

New York, *New York Public Library, Hamilton Grange Branch*, 503 and 505 W. 145th St. (7–23–81)

New York, *Stuyvesant Square Historic District*, Roughly bounded by Nathan D. Perleman Pl., 3rd Ave., E. 18th and E. 15th Sts. (11–21–80)

Omondaga County

Syracuse, *Central Technical High School*, 700–745 S. Warren St. (4–9–81)

Orange County

Goshen, *Church Park Historic District*, Park Pl., Main and Webster Sts. (11–17–80)

Montgomery, *MONTGOMERY VILLAGE MULTIPLE RESOURCE AREA*. This area includes: *Bridge Street Historic District; Union Street-Academy Hill Historic District; Crabtree-Patchett House*, 232 Ward St.; *Miller, Johannes, House*, 272 Union St.; *Montgomery Worsted Mills*, Factory St. (11–21–80)

Newburgh, *New York State Armory*, Broadway and Johnson St. (6–18–81)

Otsego County

Cooperstown, *Cooperstown Historic District*, NY 28, NY 80 and Main St. (11–18–80)

Oneonta, *Stonehouse Farm*, E of Oneonta on NY 7 (11–19–80)

Oneonta vicinity, *Fortin Site*, (11–28–80)

Queens County

Rockaway Point vicinity, *Riis, Jacob, Park Historic District*, Rockaway Beach Blvd. (6–17–81)

Rensselaer County

Hoosick Falls, *Hoosick Falls Historic District*, Roughly bounded by RR tracks, Church, Main and Elm Sts. (12–3–80)

Richmond County

Staten Island, *St. Paul's Memorial Church and Rectory*, 225 St. Paul's Ave. (11–21–80)

Schenectady County

Schenectady, *General Electric Realty Plot*, Roughly bounded by Oxford Pl., Union Ave., Nott St., Lenox and Lowell Rds. (11–18–80)

Schoharie County

Fulton, *Slater Site*, (11–28–80)

Seneca County

Covert, *Covert Historic District*, NY 96 (11–21–80)

Steuben County

Rheims, *Pleasant Valley Wine Company*, SR 88 (11–18–80)

Suffolk County

Bay Shore vicinity, *Fire Island Light Station*, Robert Moses Causeway (9–11–81)

Huntington, *Fort Golgotha and the Old Burial Hill Cemetery*, Main St. and Nassau Rd. (3–2–81)

Mastic Beach, *Floyd, William, House (Old Mastic)* 20 Washington Ave. (10–15–80)

Tioga County

Owego, *Owego Central Historic District*, North Ave., Park, Main, Lake, Court, and Fronts Sts. (12–3–80)

Ulster County

Cragsmoor vicinity, *Chetolah (George Inne, Jr., Estate)*, S of Cragsmoor on Vista Maria Rd. (10–21–80)

Westchester County

Katonah, *Jay, John, Homestead*, Jay St. (5–28–81) NHL

Peeksill vicinity, *Van Cortlandt Upper Manor House*, Oregon Rd. (4–2–81)

Scarsdale, *Wayside Cottage*, 1039 Post Rd. (5–1–81)

Yorktown Heights, *Yorktown Heights Railroad Station*, Commerce St. (3–19–81)

Wyoming County

North Java, *Arcade and Attica Railroad* (11–17–80)

NORTH CAROLINA

Beaufort County

Belhaven, *Belhaven City Hall*, Main St. (1–27–81)

Bertie County

Windsor vicinity, *King House*, NW of Windsor off NC 308 (8–26–71)

Brunswick County

Southport, *Southport Historic District*, Roughly bounded by Cape Fear River, Rhett, Bay, Short and Brown Sts. (11–25–80)

Chatham County

Pittsboro vicinity, *Hadley House and Grist Mill*, NW of Pittsboro on SR 2165 (11–25–80)

Cumberland County

Fayetteville, *Confederate Breastworks*, Raleigh Rd. and U.S. 401 (10–7–81)

Currituck County

Poplar Branch vicinity, *Baum Site (31CK9)*, N of Poplar Branch (12–3–80)

Davidson County

Lexington vicinity, *Sowers, Philip, House*, SR 1102 (11–25–80)

Thomasville vicinity, *Brummell's Inn*, N of Thomasville (11–25–80)

Thomasville, *Thomasville Railroad Passenger Depot*, W. Main St. (7–31–81)

NEW JERSEY—Continued

Springfield. *SAYRE HOMESTEAD*, Sayre Homestead Lane, (8-24-79); 79-11-29 079 0005006
Union. *TOWNLEY, JAMES, HOUSE*, Morris Ave. and Green Lane, (5-14-79); 79/07/19 079 0001676

warren county

Alpha vicinity. *HUNT, GEORGE, HOUSE*, SW of Alpha at 135 Warren Glen Rd, (9-12-79); 79-11-29 079 0005007
Washington. *WASHINGTON RAILROAD STATION*, Railroad Ave., (7-3-79); 79/11/01079 0003307

NEW MEXICO

Albuquerque

Albuquerque. *FIRST NATIONAL BANK BUILDING*, 217–233 Central Ave., NW, (2-2-79); 79/07/16 079 0000178

bernalillo county

O'REILLY, J.H., HOUSE, 220 9th St., NW., (1/29/79); 79/07/16 079 0000179
Alberquerque. *LEWIS, CHARLES W. BUILDING*, 1405–1407 2nd St., SW., (7-3-79); 79/11/01079 0003308
Albuquerque. DE GRACIA, TOMASA GRIEGO, HOUSE, 6939 Edith Blvd., NE
Albuquerque. *BARELA-BLEDSOE HOUSE*, 7017 Edith Blvd., NE., (3-12-79); 79/07/12 079 0000592
Albuquerque. *FIRST NATIONAL BANK BUILDING*, 217-233 Central Ave., NW., (2-2-79); 80/01/10079 0006769
Albuquerque. *O'REILLY, J.H., HOUSE*, 220 9th St., NW., (1-29-79); 80/01/10079 0006770
Albuquerque. *SAN IGNACIO CHURCH*, 1300 Walter St., NE, (8-21-79); 79-11-29 079 0005008

colfax county

Eagle Nest vicinity. *EAGLE NEST DAM*, 3 mi. SE of Eagle Nest off U.S. 64, (4-18-79); 79/07/19 079 0001677
Springer. *COWAN, R. H., LIVERY STABLE*, 220 Maxwell Ave., (8-3-79); 79-11-13 079 0004381

de baca county

Fort Sumner vicinity. *FORT SUMNER RAILROAD BRIDGE*, 2 mi. (3.2 km) W of Fort Sumner over Pecos River, (3-21-79); 79/07/12 079 0000593

lincoln county

Nogal vicinity. *EL PASO AND SOUTHWESTERN RAILWAY WATER SUPPLY SYSTEM*, S of Nogal, (11-21-79); 80/01/10079 0006377

mckinley county

Gallup. COTTON, C.N., HOUSE, 406 W. Aztec Ave. (7-10-79)
Prewitt vicinity. *ANDREWS ARCHEOLOGICAL DISTRICT*, NE of Prewitt, (5-17-79); 79/07/19 079 0001678

mora county

Cleveland. *CASSIDY, DANIEL, AND SONS GENERAL MERCHANDISE STORE*, NM 3, (8-1-79); 79-11-13 079 0004362
Ocate. *STRONG, J. P., STORE*, NM 21 and NM 120, (7-27-79); 79-11-13 079 0004363

otero county

Cloudcroft vicinity. *MEXICAN CANYON TRESTLE*, NW of Cloudcroft off NM 83, (5-7-79); 79/07/19 079 0001679
La Luz vicinity. *LA LUZ POTTERY FACTORY*, 2 mi. (3.2 km) E of La Luz, (05-29-79); 79/11/06 079 0002139
Tularosa. *TULAROSA ORIGINAL TOWNSITE DISTRICT*, U.S. 54/70, (2-14-79); 80/01/10079 0006771

rio arriba county

Dulce vicinity. *VICENTI SITE*, (5-14-79); 79/07/19 079 0001680
Embudo. *EMBUDO HISTORIC DISTRICT*, U.S. 64, (3-12-79); 79/07/12 079 0000594

san juan county

La Plata vicinity. *MORRIS' NO. 41 ARCHEOLOGICAL DISTRICT*, (5-17-79); 79/07/19 079 0001681

san miguel county

Las Vegas. *LIBRARY PARK HISTORIC DISTRICT*, Liberty Park and environs, (3-12-79); 79/07/12 079 0000595
Las Vegas. *LINCOLN PARK HISTORIC DISTRICT*, 7th, 8th, Lincoln and Jackson Sts, (8-6-79); 79-11-13 079 0004364
Las Vegas. *RAILROAD AVENUE HISTORIC DISTRICT*, U.S. 85, (8-6-79); 79-11-13 079 0004365
Rociada vicinity. *PENDARIES GRIST MILL*, 1 mi. (1.6 km) E of Rociada off NM 105, (2-2-79); 80/01/10079 0006772

santa fe county

Lamy vicinity. *APACHE CANYON RAILROAD BRIDGE*, 3 mi. (4.8 km) NE of Lamy over Galisteo Creek, (4-27-79); 79/07/19 079 0001682
Santa Fe. *VIERRA, CARLOS, HOUSE*, 1002 Old Pecos Trail, (8-3-79); 79-11-13 079 0004366

sierra county

Arrey vicinity. *PERCHA DIVERSION DAM*, 2 mi. (3.2 km) NE of Arrey, (4-6-79); 79/07/16 079 0001081
Elephant Butte vicinity. *ELEPHANT BUTTE DAM AND RESERVOIR*, NW of Elephant Butte off NM 51, (4-9-79); 79/07/16 079 0001082

socorro county

Magdalena vicinity. *CLEMENS RANCHHOUSE*, S of Magdalena, (4-18-79); 79/07/19 079 0001683

taos county

Taos. *GASPARD, LEON, HOUSE*, Raton Rd., (2-23-79); 79/07/12 079 0000596
Tres Piedras. *TRES PIEDRAS RAILROAD WATER TOWER*, off U.S. 285, (2-2-79); 80/01/10079 0006773
Tres Piedras. *TRES PIEDRAS RAILROAD WATER TOWER*, Off U.S. 285, (2-2-79); 79/07/16 079 0000182

torrance county

Moriarty vicinity. *MORIARTY ECLIPSE WINDMILL*, 2 (3.2 km) W of Moriarty off NM 222, (06-04-79); 79/11/06 079 0002140

valencia county

Los Lunas. *ATCHISON, TOPEKA, AND SANTA FE RAILROAD DEPOT*, U.S. 85, (8-1-79); 79-11-13 079 0004367
San Mateo vicinity. *SAN MATEO ARCHEOLOGICAL SITE*, NW of San Mateo, (5-17-79); 79/07/19 079 0001684

waseca county

Janesville vicinity. *SEHA SORGHUM SYRUP MILL*, SE of Janesville off MN 60, (06-04-79); 79/11/06 079 0002141

NEW YORK

albany county

Albany. *TEN BROECK HISTORIC DISTRICT*, irregular pattern along Ten Broeck St. from Clinton Ave. to Livingston Ave., (1-25-79); 80/01/10079 0006774
Albany. *TEN BROECK HISTORIC DISTRICT*, Irregular pattern along Ten Broeck St. from Clinton Ave. to Livingston Ave., (1-25-79); 79/07/16 079 0000183
Cohoes. *SILLIMAN MEMORIAL PRESBYTERIAN CHURCH*, Mohawk and Seneca Sts., (8-1-79); 79-11-13 079 0004368
Menands. *ALBANY RURAL CEMETERY*, Cemetery Ave, (10-25-79); 80/01/0079 0006188

bronx county

Bronx. *HALL OF FAME COMPLEX*, Bronx Community College campus, (9-7-79); 79-11-29 079 0005009

chenango county

Greene. *ROSEKRANS BUILDING*, 62 Genessee St, (7-27-79); 79-11-13 079 0004369

columbia county

Claverack. *VAN HOESEN, JAN, HOUSE*, NY 66, (8-1-79); 79-11-13 079 0004370
Clermont vicinity. *SIXTEEN-MILE DISTRICT*, W of Clermont along Hudson River, (3-7-79) (also in Dutchess County); 79/07/13 079 0000597
Germantown vicinity. *CLERMONT ESTATES HISTORIC DISTRICT*, S of Germantown, (5-7-79); 79/07/19 079 0001686
Linlithgo vicinity. *OAK HILL*, N of Linlithgo on Oak Hill Rd., (6-26-79); 79/11/01079 0003310
Valatie. *FIRST PRESBYTERIAN CHURCH*, Church St, (9-7-79); 79-11-29 079 0005010

cortland county

Preble vicinity. *LITTLE YORK PAVILION*, S of Preble off NY 281, (7-27-79); 79-11-13 079 0004371

dutchess county

Beacon. *EUSTATIA*, 12 Monell Pl., (2-26-79); 79/07/13 079 0000599
Poughkeepsie. *POUGHKEEPSIE RAILROAD BRIDGE*, Spans Hudson River, (2-23-79) (also in Ulster County); 79/07/13 079 0000600
Rhinebeck. *RHINEBECK VILLAGE HISTORIC DISTRICT*, U.S. 19 and NY 308, (8-8-79); 79-11-13 079 0004372

erie county

Buffalo. *BLESSED TRINITY ROMAN CATHOLIC CHURCH BUILDINGS*, 317 LeRoy Ave, (8-3-79); 79-11-13 079 0004373
Hamburg vicinity. *KLEIS SITE*, (4-20-79); 79/07/19 079 0001687
West Seneca. *EATON SITE*, (4-3-79); 79/07/16 079 0001083

essex county

Elizabethtown. *HAND-HALE HISTORIC DISTRICT*, River and Maple Sts., (3-5-79); 79/07/13 079 0000601

genesee county

LeRoy. *KEENEY HOUSE*, 13 W. Main St, (9-11-79); 79-11-29 079 0005011

greene county

LEEDS VICINITY. *NEWKIRK HOMESTEAD*, NW of Leeds on Sandy Plains Rd., (7-22-79); 79/11/01079 0003311

Newark, *Lincoln Park Historic District Addendum*, 1078½, 1080½ Broad St.

Hudson County

Southern Hoboken Historic District
Jersey City, *Bergen Station Post Office*, 750–766 Grand St.
Jersey City, *Buildings at 273–273½ Tenth Street*

Hunterdon County

Dart Mill Historic District, Lambertville, *Lilley Mansion*

Monmouth County

Asbury Park, *Steinbach Building* Long Branch, *Congregation Brothers of Israel Synagogue*
Long Branch, *Doll House at 87 Second Avenue*
Long Branch, *Summer House at 87 Second Avenue*

Morris County

Upper Longwood Forge Historic District

Passaic County

Dundee Canal

Somerset County

Lyons, *Veterans Administration Medical Center* (63.3)

NEW MEXICO

Fort Bliss Multiple Resource Area

Bernalillo County

Archeological Site NM:0:3:1:11
Archeological Site NM:1:15:3:6

Dona Ana County

Archeological Site OCA:FA1
Archeological Site OCA:FA:2
Archeological Site OCA:FA5
Archeological Site OCA:FA8
Archeological Site OCA:FA9
Archeological Site OCA:FA:11
Archeological Site OCA:FA:12
Archeological Site OCA:FA:13
Archeological Site OCA:FA:15
Archeological Site OCA:FA:18
Archeological Site OCA:FA:20
Archeological Site OCA:FA:21
Archeological Site OCA:FA:22
Archeological Site OCA:FA:23
Archeological Site OCA:FA:24

Otero County

Fairchild Site, *Dog Canyon White Sands National Monument*

San Juan County

Archeological Site LA 20239

NEW YORK

Portchester, *Putnam-Mellor Engine and Hose Company*

Albany County

Albany, *South End Historic District-Plum Street Extension*

Bronx County

New York, *P.S. 15 Little Red Schoolhouse*, 4010 Dyre Ave.
New York, *P.S. 17 City Island Community Center*, 190 Fordham

South Bronx, *Morris High School Historic District*

Broome County

Binghamton, *Parlor City Historic District* (63.3)

Columbia County

Hudson, *Hudson Historic District* (63.3)

Erie County

Buffalo, *Buffalo Plank Road (UB 1682)*

Kings County

Brooklyn, *Brooklyn Army Terminal*

New York County

New York, *City Center Dance Theater*, W. 55th St.

Onondaga County

Syracuse, *Main Post Office*, 101 N. Clinton St.

Monroe County

Rochester, *Commercial Historic District*, South Ave.

Rockland County

Clarkstown, *Upper Nyack Firehouse*, 330 N. Broadway
Grand View on Hudson, *Grand View Village Hall*, 118 River Rd.
Haverstraw, *Haverstraw King's Daughters Public Library* (63.3)

Suffolk County

Northport, *Veteran's Administration Medical Center*, Middleville Rd.
Southold, *Southold Library*, Main Rd. (63.3)

Tompkins County

Ithaca, *St. James AME Zion Church*

Westchester County

Tarrytown, *Pierson School*

NORTH CAROLINA

Caswell County

Womack's Mill (County Line Creek Watershed) (also in Rockingham County)

Cumberland County

Shaw-Gillis House
Fayetteville, *Poe, Edgar Allen, House*, 208 Bradford Ave.

Durham County

Durham, *Old North Durham Historic District*

Gaston County

Mount Holly, *Davenport House*, 1505 N. Main St.
Mount Holly, *Nantz House*, 714 N. Main St.

Guilford County

Old Greensborough Historic District Boundary Extension, Elm, S. Davie, E. Washington, W. Washington and S. Green Sts.

Hoke County

McNeill House

Madison County

California Creek Missionary Baptist Church

Martin County

Smithwick-Green-Clark House, U.S. 17

Woolard-Perry House

Pitt County

Bethel vicinity, *Brown, Henry Williamston, House*
Bethel vicinity, *Brown, Herbert P., House*
Bethel vicinity, *Moore House*

NORTH DAKOTA

McKenzie County

Arnegard, *Cinnamon Creek Ridge Archeological District*

Mercer County

Zap, *Archeological Site 32ME228* (63.3)

OHIO

Allen County

Lima, *Holland Block Annex*, 112–116 E. High St.

Athens County

Athens, *West Hills Historic District*
Glouster, *Hisylvania No. 2 2 Mine Entrance and Tipple*

Cuyahoga County

Strongsville, *Strongsville Acuvity Center*

Hamilton County

Cincinnati, *Block 23 (Ben's Department Store)* Bounded by Central Ave., 7th, 8th, and former John Sts.
Cincinnati, *Building at 1032 Foracker Avenu*
Cincinnati, *Buildings at 1307–1309 Pendleton Street*
Cincinnati, *Building at 1422 Appones Street*
Cincinnati, *Building at 2843 Melrose Avenu*
Cincinnati, *Building at 3022 Park*
Cincinnati, *Buildings at 4008, 4010 and 4012 Gulow Street*
Cincinnati, *Building at 4217 Mad Anthony Street*
Cincinnati, *Building at 4224 Williams Place*
Cincinnati, *Building at 4267 Williams Place*
Cincinnati, *Carmel United Presbyterian Church*, 3549 Reading Rd.
Cincinnati, *St. Leo's Church Complex*, Baltimore St. and St. Leo Pl.

Hocking County

Logan, *Hocking County Courthouse*, E. Main St. (63.3)

Knox County

Lehmon Road Bridge, SR 259 (63.3)

Scioto County

Portsmouth, *Fowler Building*, 700 Second St (63.3)
Portsmouth, *Fowler Property #1*, 716 Second St. (63.3)
Portsmouth, *Fowler Property #2*, 712 Second St. (63.3)

Summit County

Akron, *Mustill, Frederick, House*, 234 Ferndale St.
Akron, *Mustill Store*, 248 Ferndale St.
Akron, *Ohio Canal Lock No. 15*
Akron, *Ohio Canal Locks No. 10–14 (Staircase of Locks)*

(PRUDENTIAL.
Pearl Sts., 1894–1895. Lo
rchitect. Steel frame, terra cotta
/2 stories, U-shaped, flat roof;
entrances, each with large lunett
level; first 2 stories topped by n
orm base for upper levels, upp
ration organized in vertical band
arches, oculi in coved section
decorative terra cotta ornament
overs entire building; interior l
on and leaded glass skylight,
nd cast iron stairway; 1st-story
altered 1970 to form flat plane
Sullivanesque. A milestone in
raper development by Louis Sul
uccessfully integrates structural
namentation. *Private:* NHL; HABS.

Buffalo. MACEDONIA BAPTI
511 Michigan Ave., 1845. B
ectangular, gabled roof, encl
vestibule flanked by round arch
recessed rectangular panels, ro
scribed stone plaque above entr
neetinghouse plan with apse; 2
tions. Social and religious cen
community for 125 years. Parish
ward Nash, a founder of the
League and the local branch of
Private.

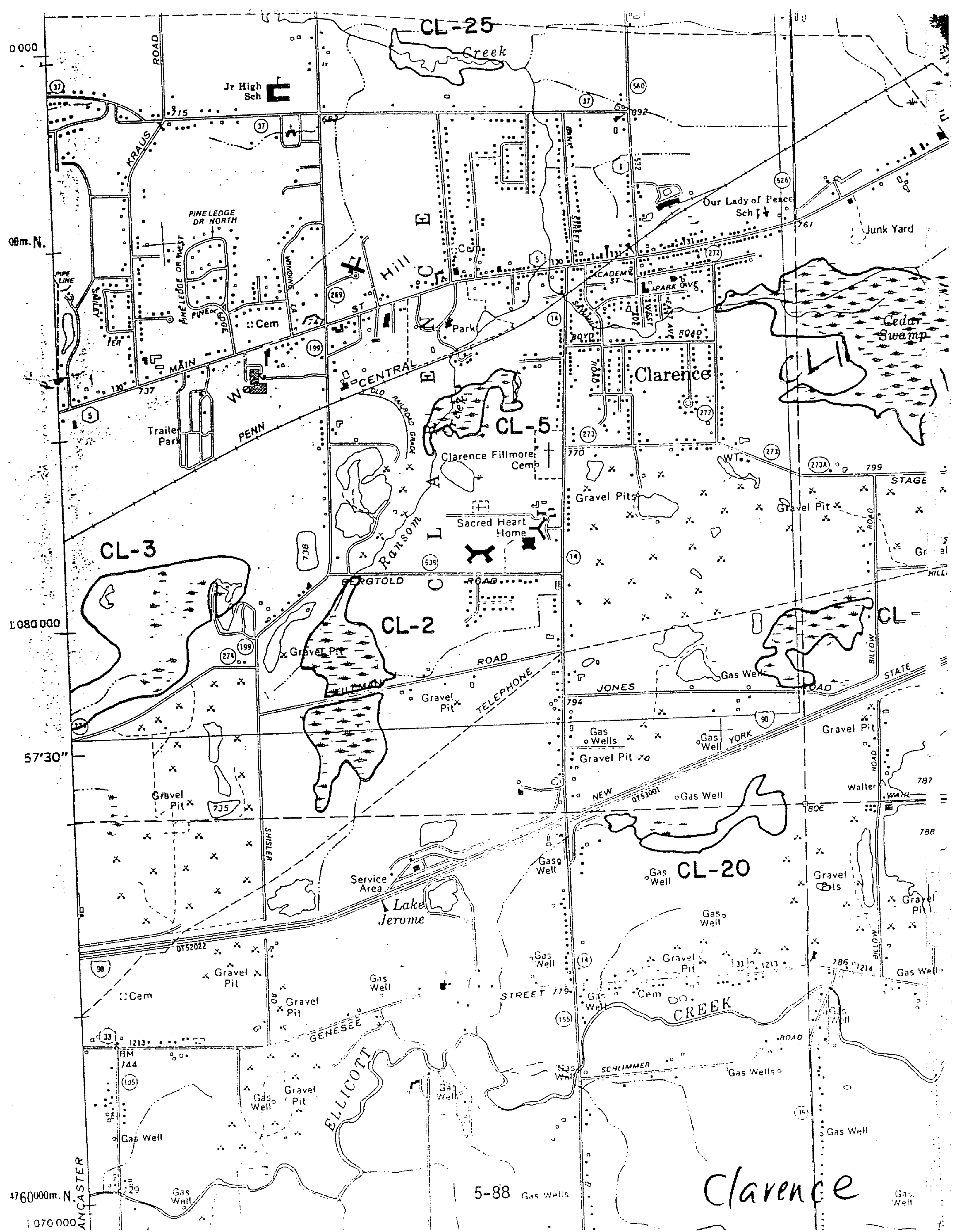
Buffalo. PIERCE ARROW FAC
PLEX, Elmwood and Great Arro
Albert Kahn, architect. Factory
taining 14 major buildings mainl
concrete steel with brick and
walls; saw-tooth roof sections, lar
60'; some Arts and Crafts decor,
on Administration Building fro
synthesis of trends foreshadov
ments in factory design; owned ar
Pierce Arrow Co. until 1938;
converted for diversified comme
tiple private.

Buffalo. ST. PAUL'S
CATHEDRAL, 125 Pearl St.
Richard Upjohn, architect. Sands
story, irregular shape, gabled roo
nice sections, some with modillio
trefoil arcading; front 3-stage t
spire, entrance porch, transept c
trance and adjacent 3-stage be
spire, nave lancet windows with
buttresses; towers completed 18
destroyed interior; new interior
English architect, Robert Gibs
added. Fine example of Gothic R
adapted to unusual triangular
HABS.

REFERENCE NO. 8

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


CL-25
Creek
Jr High Sch
ROAD
KRAUS
PINELEDGE DR NORTH
PINE LEDGE DR WEST
PIPE LINE
Cem
MAIN
ST
Hill
Park
Clarence
Our Lady of Peace Sch
Junk Yard
Cedar Swamp
ACADEMY ST
PARK AVE
BOYD
ROAD
CENTRAL
PENN
OLD RAILROAD GRADE
Trailer Park
CL-5
Clarence Fillmore Cem
Gravel Pits
Gravel Pit
Sacred Heart Home
Ransom
CL-3
BERGTOLD ROAD
CL-2
Gravel Pit
ROAD
JONES
TELEPHONE
Gravel Pit
Gas Wells
Gas Well
YORK
NEW
STATE
STAGE
HILL
BILLOW ROAD
CL-
Gravel Pit
Walter
WAHL
57'30"
1 080 000
Gravel Pit
SHISLER
CL-20
Service Area
Lake Jerome
Gas Well
Gravel Pits
STREET
GENESEE
CREEK
Cem
SCHLIMMER
ROAD
ELLICOTT
Gas Wells
BM 744
LANCASTER
4760000m. N.
1 070 000
5-88
Clarence

FRESHWATER WETLAND CLASSIFICATION

uctions: Circle numbers of applicable classification characteristics and place check next to appropriate class. Note r of species to which characteristics 13, 14 or 15 apply shall be identified in parentheses with species considered a ate Class II characteristic in determining item 7. Complete information on reverse side of form to substantiate your usions. A wetland with no Class I, II, or III characteristics is a Class IV wetland.

,Town, ~~Village~~) Clarence/Newstead
y Erie
name Clarence

Wetland name ____
Wetland no. CL-1 DEC no. ____
UTM Coord. 4762700m N. 208200m E.

Inspection Dates None
No. of sheets attached 5
Preparer Kevin Lynch Date 5/11/71

CLASS I ___

lassic kettlehole bog
les. hab., thr./endg. anim. sp.
Thr./endg. plant sp.
Jnus. 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
[illegible] 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
(40) Class III Covertype

STRUCTURAL GROUPS

	AREA	STRUCTURAL GROUPS
	19 %	Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.
X	49 %	Woody - deciduous, coniferous, shrub swamp min. 25%.
X	32 %	Water - submergent, floating veg., wetland open water min. 15%

COVERTYPE

PLY?	AREA	COVERTYPE (min. 50% of area)
	%	Wet Meadow
	19 %	Emergent marsh
	49 %	Deciduous swamp
	%	Coniferous swamp
	%	Shrub swamp
	%	Floating/submergent veg.
	32 %	Wetland open water

no single covertype is of at least 50% of the wetland ea, add up all the separate covertype areas in each class d assign the wetland to the class representing the largest oportion of the wetland's area.

		Class II
	19 %	Emgt. marsh; pur. loosestrife and/or phragmite max. 66% of covertype
	19 %	TOTAL Class II
X		Class III
	%	Emgt. marsh; pur. loosestrife and/or phragmite min. 66% of covertype
	49 %	Deciduous swamp
	%	Shrub swamp
	%	Floating/submergent veg.
	32 %	Wetland open water
	81 %	TOTAL Class III
		Class IV
	%	Wet meadow
	%	Coniferous swamp
	%	TOTAL Class IV

COMMENTS

Wetland area is 31 ± acres determined [illegible] an acre grid overlay.

Bureau of Wildlife Wetland Inventory [illegible] and the tentative regulatory map [illegible] same boundary for this wetland.

Covertype information is from Bureau [illegible] Wildlife Wetland Inventory Data. [illegible] portion and the Photo [illegible] are attached.

It is a high probability this wetland overlies an aquifer due to the large area of gravel deposits in this area.

Covertype info. should be checked.

Wetland data (computer-printout) indicates this wetland is near a recreation area.

Clarence

FRESHWATER WETLAND CLASSIFICATION

Circle numbers of applicable classification characteristics and place check next to appropriate class. Note cies to which characteristics 13, 14 or 15 apply shall be identified in parentheses with species considered a s II characteristic in determining item 7. Complete information on reverse side of form to substantiate your A wetland with no Class I, II, or III characteristics is a Class IV wetland.

~~Village~~) Clarence

Clarence

Wetland name Tillman Rd. Swamp
Wetland no. CL-2 DEC no. 915-10-0156
UTM Coord. 4762600m N. 285800m E.

Inspection Dates 6/19/73
No. of sheets attached 2
Preparer Kevin Lynch Date 5/1/81

CLASS I X

c kettlehole bog
hab., thr./endg. anim. sp.
endg. plant sp.
abund./div. anim. sp. in
on or state
nificant flood protection for
stantially developed area
./contig. to reservoir or public
ter supply or hydraulically
nnected 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

88 Acres

CLASS III

25. Emgt. marsh, pur. loosestrife a or phragmites min. 66% of cover
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 p
32. Adj. to fert. upland; high base soils
33. Res./mig. hab. of vuln. anim. Res. for region mig. for regi or state
34. Vuln. plant sp.; region
35. Part of significantly polluted permanent open water system in which pollution reduction occu
36. Visible and aesthetic/open spa value
37. 1 of 3 lgst. wetlands of same covertype within a town
38. Wetland acreage max. 1% of tot town acreage
39. Publicly owned land open to public use

STRUCTURAL GROUPS

AREA	STRUCTURAL GROUPS
60 %	Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.
10 %	Woody - deciduous, coniferous, shrub swamp min. 25%.
30 %	Water - submergent, floating veg., wetland open water min. 15%

COVERTYPE

AREA	COVERTYPE (min. 50% of area)
%	Wet Meadow
60 %	Emergent marsh
3 %	Deciduous swamp
%	Coniferous swamp
7 %	Shrub swamp
30 %	Floating/submergent veg.
%	Wetland open water

ngle covertype is of at least 50% of the wetland d up all the separate covertype areas in each class gn the wetland to the class representing the largest on of the wetland's area.

5-92

	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

COMMENTS

Wetland Size is 100+ acres. This covertype and most other information from Field report.

This wetland is in a wilderness area.

Wetland is associated with [illegible] creek as an External, Permanent open water system.

It is highly probable that a hydraulic connection to an aquifer exists due to the large gravel deposits in the vicinity.

Bureau of Wildlife Wetland map [illegible] large area of this wetland. Map [illegible] is attached.

There is no covertype location map with the field report thus locator map done by using aerial photos.

227 - 142 [illegible]

WETLAND INVENTORY FIELD DATA SHEET

INFLUENCES AND VALUES

ence	Min.	Mod.	Maj.
ing, trapping	[x]	[ ]	[ ]
traverses marsh	[x]	[ ]	[ ]
rban residences within 1 mile	[x]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]

ss to degradation 0 %

gion 9 Wildlife Unit estimate

ility to destruction

medium ---------- high

[ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5

n vulnerability classification

idential and commercial development
a continuing process in this locale;
ling is a possibility

Region 9 Wildlife Unit investiga-
ns

ment possibility

[ ] medium [ ] high

ted None

ership [ ] Federal [ ] State [ ] Local

vation Organization [ ] Sport [X] Private

HYDROLOGIC VALUES (Use boxed to describe)

Unique Geology

Source:

Unique in Environs 1

Presently natural productive marshes of this size are very rare on this Niagara Frontier

Source:

Flood Control

Source:

Sediment Filtering

Source:

Potential Use 3

Close proximity to Niagara Frontier urban area

Source:

Aesthetic/Open Space 1

Unspoiled wild area providing visual variety near suburban area

Source:

Historical Value

Source:

Migration Distribution

Flight Zone

Source:

CL-2

WETLAND INVENTORY FIELD DATA SHEET

UTM

CLASSIFICATION

ADDITIONAL COMMENTS

One of very few sizeable natural productive wetlands in Region 9.

ilman Road Swamp

dir SW from Clarence Ctr.

Clarence

Erie

Clarence

X Natural ☐ Artificial

ssion 9 Veg. Cover 50 %

oth 100 %

YPES

esh

ally flooded basins/flats ____ %

meadows ____ %

w fresh marshes ____ %

resh marshes 90 %

resh water ____ %

swamps 7 %

swamps 3 %

____ %

esh

w fresh marshes ____ %

fresh marshes ____ %

fresh water ____ %

aline

flats ____ %

meadows ____ %

ely flooded salt marshes ____ %

and bays ____ %

CLASSES

3 %

____ %

____ %

____ %

7 %

____ %

____ %

8. Aquatic shrubs	____ %
9. Dead shrubs	____ %
Emergents	
10. Sub-shrubs	5 %
11. Robust emergents	30 %
12. Tall meadow emergents	____ %
13. Short meadow emergents	5 %
14. Narrow-leaved marsh emergents	10 %
15. Broad-leaved marsh emergents	10 %
Surface Vegetation	
16. Floating-leaved vegetation	10 %
17. Floating vegetation	10 %
Submergents	
18. Submergents	10 %

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: R.L. Cheney

Title: Sr. Wildlife Biologist

Date: 6/19/73 Time: ____

915-10-D156
WETLAND # CL-2

TILLMAN SWAMP WETLANDS MANAGEMENT PLAN

New York State Department of Environmental Conservation
Division of Fish and Wildlife
Region 9 Wildlife Management Unit

Prepared: January 1978
R.L. Cheney
Senior Wildlife Biologist

I. SUMMARY:

Tillman Road Swamp is 100+ acres of predominantly deep fresh marsh in the south-central portion of the Town of Clarence, Erie County.

It is located approximately 8 miles east of the City of Buffalo, 2 miles southwest of the Village of Clarence in a suburban-rural setting.

Much of the wetland and adjacent uplands is owned by the Pine Hill Concrete Corporation, which actively excavates sand and gravel on an extensive acreage surrounding the project. Currently, acquisition negotiations are being conducted with Pine Hill and two other landowners, who jointly hold all of the land in the basin and periphery needed for this project.

In its present state, the swamp hosts a viable wetland community, with a good variety of sedentary and migratory wildlife species. Other wetland values associated with the swamp are of lesser importance. It provides some flood control on approximately 1,800 acres of watershed associated with the west branch of Ransom Creek, undoubtedly has some value for aquifer recharge and is the receptacle for a New York State Thruway service area tertiary-treated effluent outlet. Current public use is sparse. Hunting and trapping rights are held by a few people. Since the wetland is entirely posted against trespass, casual use is virtually non-existent. Perhaps the only significant public use is bird-watching from the edge of Tillman Road, which bisects the wetland.

Because of its location within a few minutes drive of urban-suburban Erie County, the primary potential use of the area will be for nature observation-nature study. Specifically, objectives of this project are:

1. To preserve in public ownership one of 4 sizeable high-quality wetland units in urban-suburban Erie County.

2. To provide for wetland nature observation-nature study use by regional citizens, particularly those in adjacent communities, including self-guided study and group study (schools, bird clubs, etc.).

3. To provide passive open space use by nearby suburban residents as appropriate, considering the prime objectives.

4. To provide consumptive use as appropriate, considering the prime objectives.

John McMahon
Gordon Batcheller
Dewatering of the Tillman Road wetland

October 8, 1982

Tillman Road Wildlife Management Area (WMA) (Erie County, Town of Clarence) comprises approximately 240 acres; the major feature of this area is a 83 acre freshwater emergent marsh (see the enclosed locator map).

Pursuant to Article 24, the Tillman Road wetland is a class I protected freshwater wetland. Dominant vegetative species are cattail (Typha spp.), and purple loosestrife (Lythrum salicaria). Historically this wetland has had 18-24 inches of standing water in almost all areas of the marsh.

During the summer of 1982 the Tillman Road wetland was dewatered. Although the precise time period in which this occurred is not known, I feel that most of the water drained between early July and late August. Although this is normally a dry period and some reduction in water level is usually observed during summer, this dewatering was complete. At this time, there is no standing water on the wetland. According to ECO Keppner this is the first time in at least 10-15 years that the wetland has been completely dewatered.

The dewatering of the Tillman Road wetland apparently coincided with the dewatering of the Ransom Creek and the partial dewatering of the Gunnville wetland (Erie County, Town of Clarence). According to Town of Clarence officials, approximately 12 houses experienced dewatering of their wells as of 1 September 1982.

Informal communications with Town of Clarence officials, and their consulting engineers brought several additional observations to my attention. They feel that this dewatering situation is fairly widespread in the Town of Clarence and small portions of Lancaster and Newstead. According to Art Bossert the water table in the Lancaster "aquifer" dropped 10-30 feet during the summer. To my knowledge no cause for this problem has been positively identified but Mr. Bossert seems to feel that a geological phenomenon is the most likely explanation.

I attended a meeting 16 September 1982 at the Clarence Town Hall. This was an informational gathering meeting; present were Town representatives and their consulting engineers, 2 representatives from U.S.G.S., a homeowner representative, and an official from Senator Floss' office. My function was

to gather information on the problem to assist the Bureau of Wildlife in management decisions regarding the Tillman Road WMA. During this meeting, the history of the problem was recited by Mr. Bossert; Town engineers and U.S.G.S. officials discussed in a very speculative manner possible causative factors, and the U.S.G.S expressed an interest in investigating the problem in detail. I made no commitments on behalf of D.E.C. other than to state our concern regarding the future of the Fillman Road WMA.

The Bureau of Wildlife considers the Tillman Road marsh as an outstanding wetland. It is unique in its proximity to a large number of people, and in fact, constitutes one of the best freshwater wetlands in suburban Erie County. Without water, the value of the wetland is extremely limited. Our intended management activities included the construction of a water level control structure and development of an interpretive natur trail. Further actions on these projects will not be conducted until we understand the long term water level regime at Tillman Road.

We will be setting up water level monitoring stakes in the near future to document this regime. We have planned no additional actions in response to this problem.

Gordon R. Batcheller
Conservation Biologist
Region 9

GRB:mkb
Attachment
cc: J. Spagnoli
L. Nelson
T. Moore
R. Speed

Clarence

FRESHWATER WETLAND CLASSIFICATION

ictions: 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 ite Class II characteristic in determining item 7. Complete information on reverse side of form to substantiate your isions. A wetland with no Class I, II, or III characteristics is a Class IV wetland.

,Town, ~~Village~~) Clarence
r Erie
name Clarence

Wetland name Roth Wetland
Wetland no. CL-5 DEC no. 915-10-6157
UTM Coord. 4764000m N. 206500m E.

Inspection Dates 9/14/7?
No. of sheets attached 1
Preparer [illegible] Date 5/?/81

CLASS I ✓

lassic kettlehole bog
es. hab.; thr./endg. anim. sp.
ir./endg. plant sp.
ius. abund./div. anim. sp. in
egion or state
ignificant flood protection for
ibstantially developed area
dj./contig. to reservoir or public
iter supply or hydraulically
onnected to public water supply
luifer.
or more Class II characteristics

5-98

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 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

21 Acres

AREA	STRUCTURAL GROUPS
18 %	Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.
72 %	Woody - deciduous, coniferous, shrub swamp min. 25%.
10 %	Water - submergent, floating veg., wetland open water min. 15%

AREA	COVERTYPE (min. 50% of area)
%	Wet Meadow
18 %	Emergent marsh
%	Deciduous swamp
%	Coniferous swamp
72 %	Shrub swamp
10 %	Floating/submergent veg.
%	Wetland open water

no single covertype is of at least 50% of the wetland ea, add up all the separate covertype areas in each class d assign the wetland to the class representing the largest oportion 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 21 acres.

Size and covertype information from Field Inspection Report

Wetland is near Clarence Municipal Park

This wetland is associated with Rainbow Creek as an external permanent open water body.

UTM coordinates from DOT Planimetric Map

Possible connection to an aquifer exists due to the large amount of gravel deposits in this area.

5-99

recycled paper

ecology and environment

UIN _ _ _ _ _ _ _ _

WETLAND INVENTORY FIELD DATA SHEET
CLASSIFICATION

...oth Wetland

...s 1/2 dir SW from Clarence

...opo quad Clarence

County Erie

Town ____

Region ___ ☐ 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 17.5 %
4. Deep fresh marshes ____%
5. Open fresh marshes ____%
6. Shrub swamps 72.5 %
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. Bushy shrubs 72.5 %
6. Low compact shrubs ____%
7. Low sparse shrubs ____%
8. Aquatic shrubs ____%
9. Dead shrubs ____%

Emergents

10. Sub-shrubs ____%
11. Robust emergents 17.5 %
12. Tall meadow emergents ____%
13. Short meadow emergents ____%
14. Narrow-leaved marsh emergents ____%
15. Broad-leaved marsh emergents ____%

Surface Vegetation

16. Floating-leaved vegetation ____%
17. Floating vegetation ____%

Submergents

18. Submergents 10 %

* *

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: Sr. Wildlife Biologist

Date: 9/14/78 Time: 9:30 am

Additional Comments

Wetland Size:

21 acres

Wetland Soils:

Lamson mucky very fine sandy loam — poorly or very poorly drained soils that have formed in thick calcareous glacial lake deposits of predominantly fine and very fine sand.

Cheektowaga fine sandy loam — deep poorly & very poorly drained soils form in sandy lacustrine deposits that overlie lacustrine clay.

UTM

WETLAND INVENTORY FIELD DATA SHEET
INFLUENCES AND VALUES

Human influence	Min.	Mod.	Maj.
- Construction activities	☐	☐	☒
for proposed housing	☐	☐	☐
development underway	☐	☐	☐
- Cattail marsh-drained	☐	☐	☒
this summer	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

Prod. loss to degradation 50 %

Source: J. Snider

Vulnerability to destruction

----low----------medium----------high----

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☒ 5

Reason for vulnerability classification

See human influence

Source:

Enhancement possibility

☐ low ☐ medium ☒ high

Work needed: dike structure needed to return prev. water level to drained marsh

Expected gain - Back to original productivity

Source: J. Snider

Known ownership ☐ Federal ☐ State ☐ Local ☐ Conservation Organ. ☐ Sport ☒ Private

MISCELLANEOUS VALUES (use boxes to describe)

Unique Geology ☐

Source:

Unique in Environs ☐

Source:

Flood Control ☐

Low level value - retaining runoff for slow release ✓

Source:

Sediment Filtering ☐

Low value

Source: J. Snider

Potential Use ☐

Source:

Aesthetic/Open Space ☐

Source:

Historical Value ☐

Source:

Migration Distribution
flight lane ☐

Located near state-Federal wetland Complex.

Source:

☐

Source:

WETLAND CLASSIFICATION FIELD DATA SHEET

Name Roth Wetland

Clarence

1/2 dir SW from Clarence

Erie

Clarence

ge 21

ETLAND VEGETATION COVERTYPES
(approximate percentage)

t meadow	____ %
ergent marsh	17.5 %
ciduous swamp	____ %
niferous swamp	____ %
rub swamp	72.5 %
bmergent &/or floating	10 %
etland open water	____ %

COVERTYPE GROUPS

2. = 17.5 %

4. & 5. = 72.5 %

7. = 10 %

not enter totals less than 15%)

OTHER CLASSICAL ASSOCIATIONS

Classic kettlehole bog

Associated with open water

(name) _____

SOIL TYPES

Lamson mucky very fine sandy loam

&

Cheektowaga fine sandy loam.

HUMAN INFLUENCE - DEGRADATION

Present six acre marsh has been drained this summer

TOTAL ALKALINITY

(1) ____ (2) ____ (3) ____

(4) ____ (5) ____ mean ____

Test performed by _____

Not enough water to sample _____

Clarence

FRESHWATER WETLAND CLASSIFICATION

Instructions: Circle numbers of applicable classification characteristics and place check next to appropriate class. Note number of species to which characteristics 13, 14 or 15 apply shall be identified in parentheses with species considered a separate Class II characteristic in determining item 7. Complete information on reverse side of form to substantiate your conclusions. A wetland with no Class I, II, or III characteristics is a Class IV wetland.

City, Town, ~~Village~~) Newstead / Clarence
County Erie
Quad. name Clarence

Wetland name Cedar Swamp
Wetland no. CL-11 DEC no.
UTM Coord. 4764400m N. 208900m E.

Inspection Dates 10/3/78 10/30/80
No. of sheets attached 1
Preparer Kevin Lynch Date 5/11/81

CLASS I X

Classic kettlehole bog
Res. hab., thr./endg. anim. sp.
Thr./endg. plant sp.
Unusl. 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

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

208 ACRES

STRUCTURAL GROUPS

APPLY?	AREA	STRUCTURAL GROUPS
	2 %	Herbaceous-emgt. marsh, wet meadow min. 25% of wetland.
X	17 %	Woody - deciduous, coniferous, shrub swamp min. 25%.
	< 1 %	Water - submergent, floating veg., wetland open water min. 15%

COVERTYPE

APPLY?	AREA	COVERTYPE (min. 50% of area)
	1 %	Wet Meadow
	1 %	Emergent marsh
X	97 %	Deciduous swamp
	%	Coniferous swamp
	%	Shrub swamp
	%	Floating/submergent veg.
	< 1 %	Wetland open water

If no single covertype is of at least 50% of the wetland area, add up all the separate covertype areas in each class and assign the wetland to the class representing the largest proportion 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

5-104

Wetland area is 208 acres. This and most other information is from the field inspect report.

Covertype areas on locator map determined using aerial photos 4-29-72 Erie 2-28-72 4-29-72 Erie 2-28-72

Ramsam Creek, which flows through this wetland, is a C(t) stream in this area. 6NYCRR 837.4 Item 9h page 1612. It is also the external permanent open water body.

This wetland area is a wilderness area.

It is indicated in the inspection report that this wetland area contains White Cedar, and is thus unique.

about half of this wetland is shown on the Bureau of Wildlife Wetland Inventory Map. Map portions are enclosed in this file

FRESHWATER WETLAND DATA

WETLAND NAME: Cedar Swamp DEC # 915-22-0139

LOCATION:

Quad: (USGS)(DOT) Clarence

County: Erie

Town: Clarence

Miles 1/4 Dir. East From Clarence

INVESTIGATOR(S): James Snider

DATE(S) OF FIELD RECONNAISSANCE:

Date(s)	Weather
12/30/80	Overcast - 6" snow on ground

SIZE OF WETLAND: 208 acres

VEGETATION COMMUNITY:

1. Covertypes (estimated percentage)
   - a. Wet meadow 1%
   - b. Emergent marsh 1%
   - c. Deciduous swamp 97%
   - d. Coniferous swamp —%
   - e. Shrubs swamp —%
   - f. Submergent &/or floating —%
   - g. Wetland open water less than 1%

ECOLOGICAL ASSOCIATIONS:

2. Covertype Groups
   - a. + b. = 2%
   - c. + d. + e. = 97%
   - f. + g. = 1%
3. Classic Kettlehole bog —
4. Associated with open water — Water one of the headwaters to tributaries of Ransom Creek.
5. Proximity to Mud Flats —
6. Island present —
7. Adjacent to Class C(T) or higher stream — yes

SPECIAL FEATURES

8. Resident Animal Habitat for: Muskrat, Whitetail deer, Raccoon Wood duck?, mallard, mink gray squirrel, cottontail rabbit, numerous reptiles & amphibians, songbirds, and snipe

9. Traditional Migration Habitat for: Woodcock, Wood ducks, Songbirds Snipe

	YES	NO
10. Endangered or threatened species present		
11. Vulnerable species present		
12. Unusual animal species abundance or diversity for State or major geo-ecological Region of State		
13. Unusual animal species abundance or diversity for County.		
14. Demonstrable Archeological or paleontological significance.		
15. Significant (unusual or excellent representation) geological feature		
16. Alkalinity of at least 50 ppm		
17. Adjacent to Naturally Fertile Upland	X	

HYDROLOGICAL + POLLUTION CONTROL FEATURES

	YES	NO
18. Natural storm water retention facility.	X	
19. Adjacent or contiguous to surface water used as public water supply.		
20. Provides treatment for pollutants.		
21. Provides recharge for aquifer.	?	

DISTRIBUTION AND LOCATION:

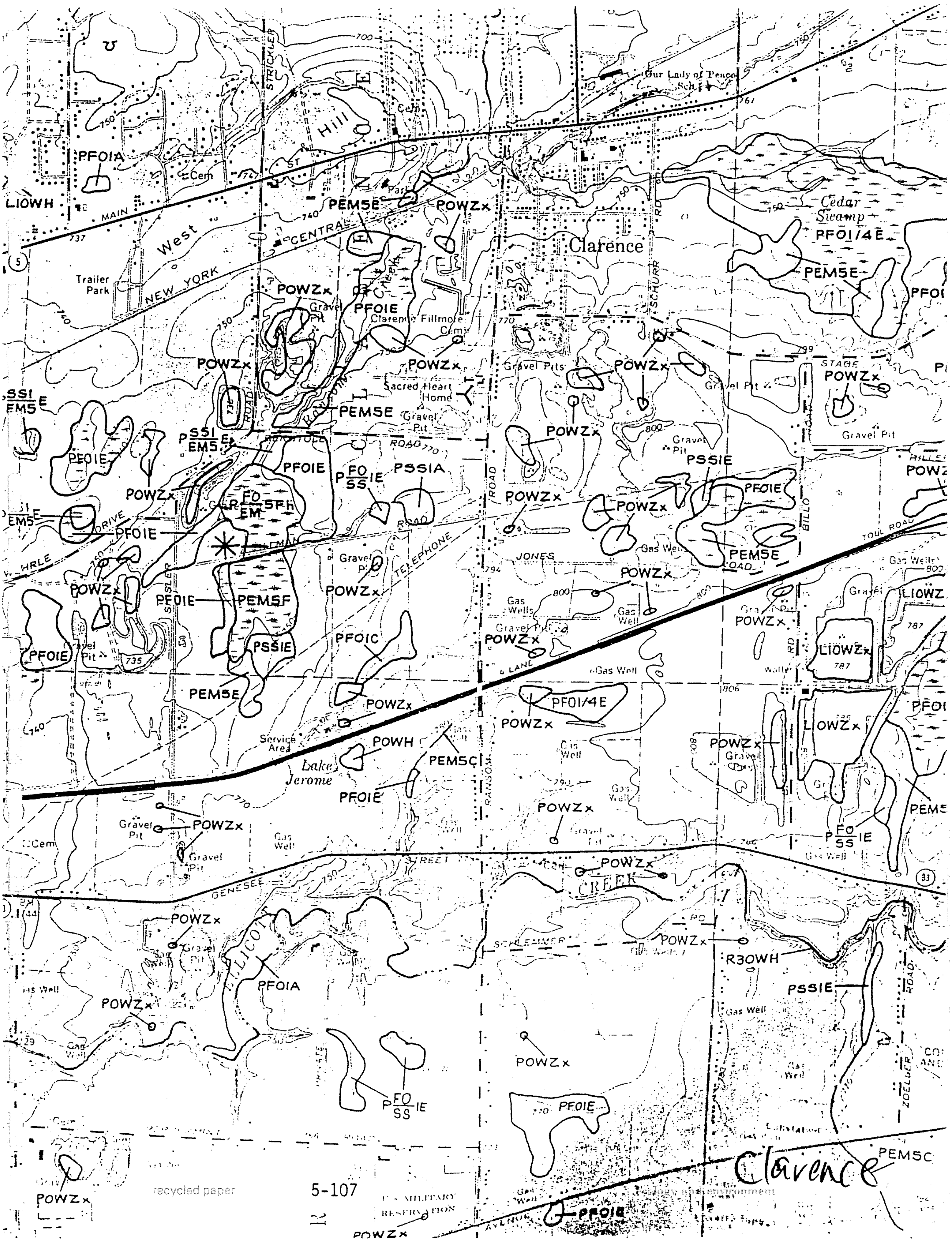
22. Within urbanized area	X adjacent to Clarence	
23. Visible from Interstate Highway, parkway, designated scenic highway, or passenger railroad.		
24. One of three largest wetlands, or three largest of same covertype within a city or town, or in a town where wetlands acreage is less then 1% of total.	X	
25. Within a publicly owned Recreation area.		
26. On Publicly owned land open to public use.		

EXPLANATION AND SUPPORT FOR ITEMS 8 THRU 26 ABOVE AND OTHER CONTENTS
(attach Floristic checklists and additional sheets as necessary. Also note human influences having an effect upon the above noted values, and any two or more values which are redundant):

This wetland is unique because of the white cedar (Thuja occidentalis) which is found growing there. There was plenty of natural regeneration of young cedar trees noted at the time of the field inspection. This is the first wetland which has contained cedar in all the field investigations which I have conducted in Erie and Niagara counties.

5. Should be checked by Engineer.

Add Additional Sheets As Necessary


Clarence
West
MAIN
NEW YORK
CENTRAL
Trailer Park
Hill
Cedar Swamp
Our Lady of Peace Sch
Clarence Fillmore Cem
Sacred Heart Home
Gravel Pit
Gravel Pits
Gas Well
Gas Wells
Service Area
Lake Jerome
GENESEE
STREET
CREEK
ELLICOTT
SCHLEMMER
JONES
TELEPHONE
RANSOM
ROAD
SCHURR
BILLO
ZOELLER
STAGE
AVENUE
PFOIA
LIOWH
PEM5E
POWZx
PFOIE
PFO1/4E
PSS1/EM5 E
PFO/SS IE
PSSIA
PSSIE
PFO/EM 5Fh
PEM5F
PFOIC
POWH
PEM5C
LIOWZx
R3OWH
U.S. MILITARY RESERVATION
Clarence

REFERENCE NO. 9

LABORATORY NOTEBOOK

ECOLOGY & ENVIRONMENT, INC.

5-109

Project No. ND-2021

Book No. _____ TITLE CLARENCE READY MIX

Page No. __

1 AUG 1987

0 Arrive at Clarence Ready Mix, NW corner of Stage + Ransom Road in Clarence, NY. Weather is Sunny, Breeze 2-4 5-5 mph ave N, 80°F. Awaiting Al Gilewitz, CS Engineers.

) Mr. Gilewitz Arrives on site

Plans are:

1) To excavate landfill, mix + recycle materials with C+D wastes and dispose in secure landfill on site
2) Declassify. 327 acres to 35 acre secure
3) Installation of test pits and groundwater monitoring

Operation Late 60's → mid 70's

1NU - no readings above background

1030 photo 1, from NE corner to south
water at pond turbid, white, murky,
stressed vegetation, pos. due to soil or asphalt - 4' diameter

1040 photo 2, from South, mid pond.

1045 photo 3 to pond

1045 photo 4 from SE corner to SW
no leachate in pond observed, all clean fill surface pocketed with sinkholes (small) and woodchuck holes. Vegetation 4' high. Some stressed areas noted.

1110 MW-1 located as indicated on map. PVC, 2", unsecure.
photo 5 - from North to South.

Mr Gilewitz's/CRM's remediation plan issued to DEC 2 weeks.

no guard - no fence

150 Off site A. Gilewicz 8-21-87

Albert J. Gilewicz, P. E.

Phone (716) 847-1630

5-110

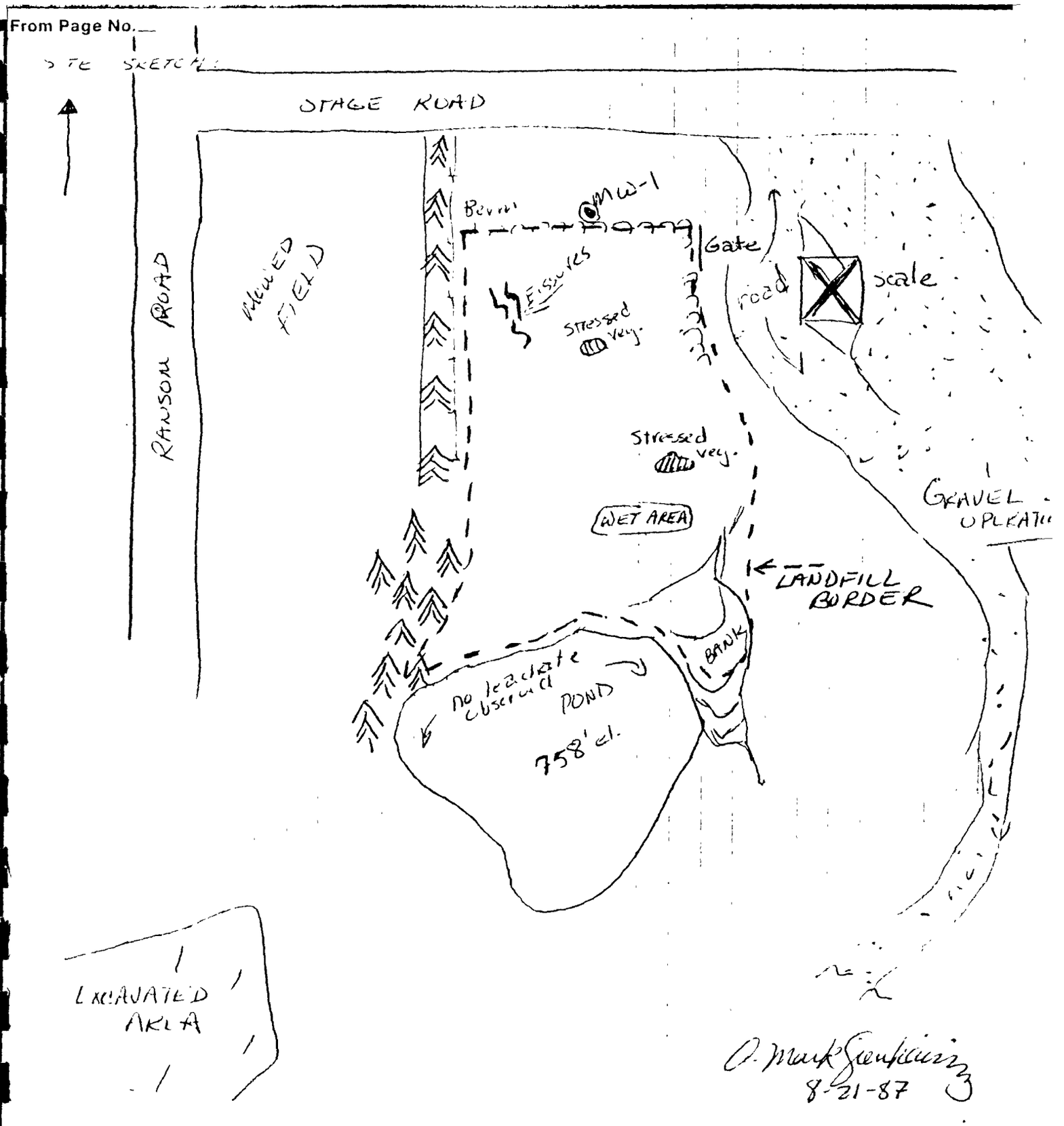
Calocerinos & Spina
CONSULTING ENGINEERS
69 Delaware Avenue, Buffalo, New York 14202

essed & Understood by me. | Date | Inv | Remarks

Project No._____

TITLE _____ Book No._____

From Page No.___



To Page No.___

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

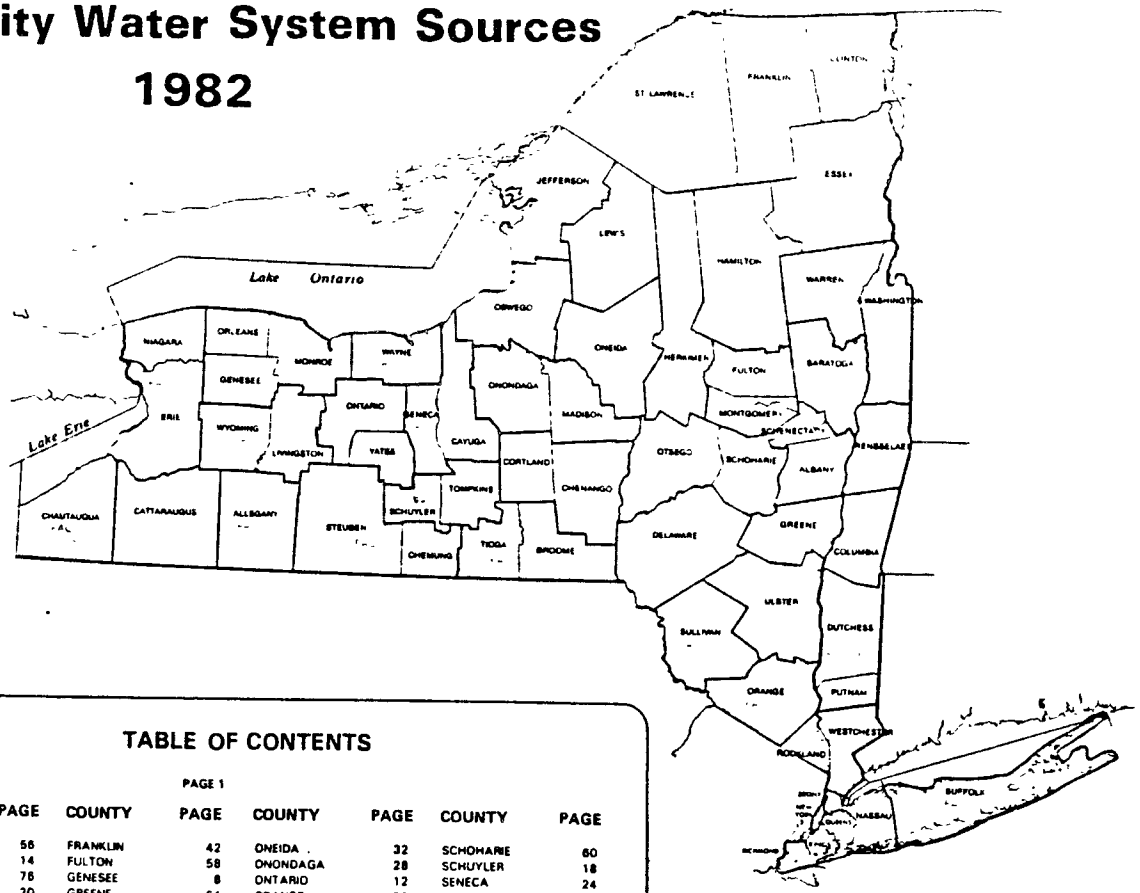
REFERENCE NO. 10

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH 518-474-2121
DIVISION OF ENVIRONMENTAL PROTECTION 518-458-6423
BUREAU OF PUBLIC WATER SUPPLY PROTECTION 518-458-6731
/6743
DIVISION OF ENVIRONMENTAL HEALTH 518-458-6400

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE
DEPARTMENT OF HEALTH



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BROOME	20	GREENE	64	ORANGE	72	STEUBEN	16
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CAYUGA	24	HERKIMER	34	OSWEGO	30	SULLIVAN	70
CHAUTAUQUA	2	JEFFERSON	38	OTSEGO	60	TIOGA	20
CHEMUNG	16	KINGS	76	PUTNAM	66	TOMPKINS	18
CHENANGO	22	LEWIS	36	QUEENS	76	ULSTER	68
CLINTON	44	LIVINGSTON	10	RENSSELAER	56	WARREN	50
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DELAWARE	62	MONTGOMERY	58	ST LAWRENCE	40	WESTCHESTER	74
DUTCHESS	66	NASSAU	76	SARATOGA	54	WYOMING	10
ERIE	6	NEW YORK	76	SCHENECTADY	56	YATES	12
ESSEX	46	NIAGARA	6				

LEGEND

BOUNDARIES AND PLACES

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

CLASSIFICATION OF POPULATED PLACES

100 000 or more — YONKERS
50 000 to 100 000 — Levittown
12 500 to 50 000 — Poughkeepsie
2 500 to 12 500 — Hampton Bays
250 to 2 500 — Boonville
250 or less — Otto

TRANSPORTATION

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

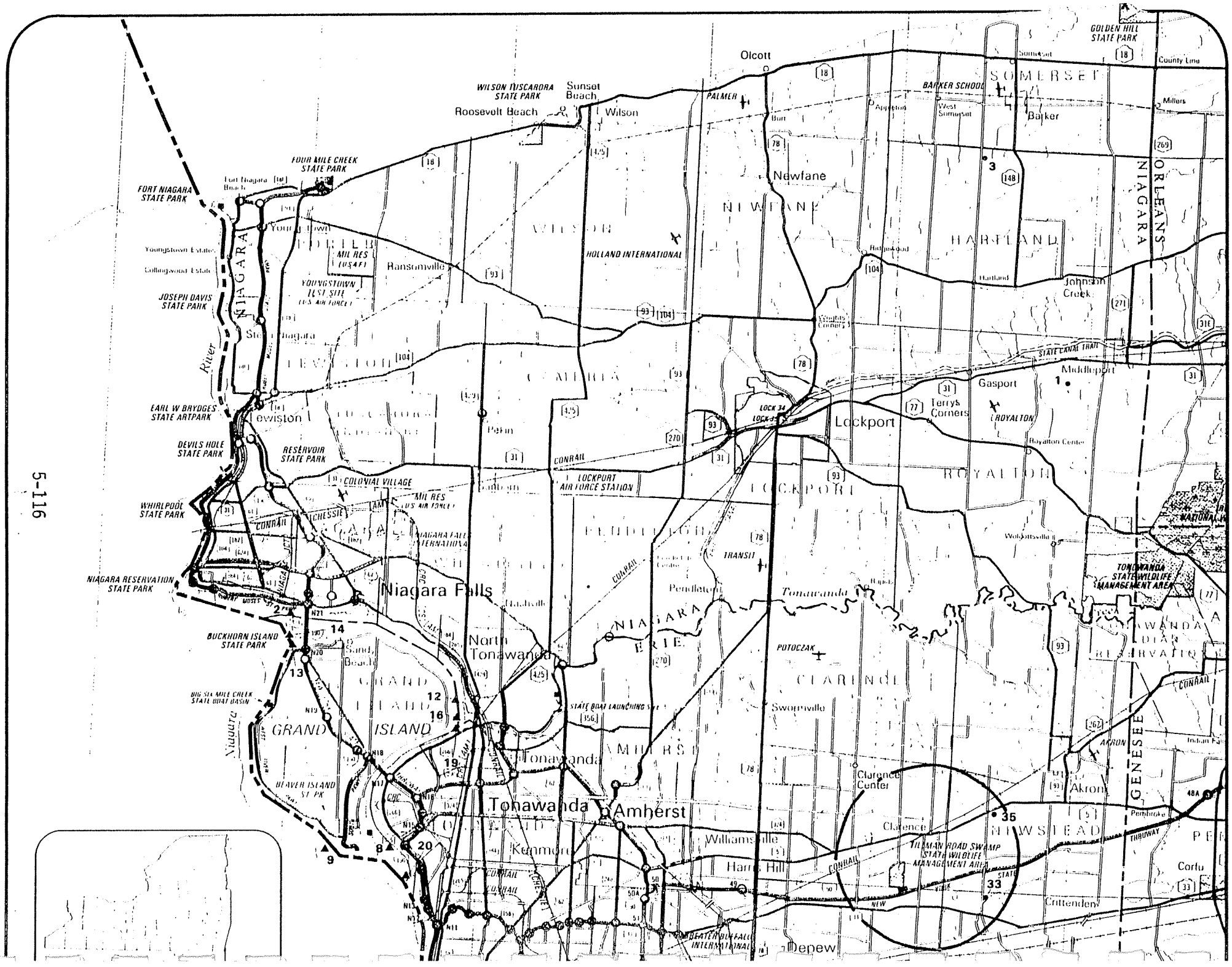
Railroads
Operating Line
Service Discontinued
Operator (DELAWARE AND HUDSON)
Owner (If Other than Operator) (PENN CENTRAL)
Company Having Trackage Rights (CONRAIL)

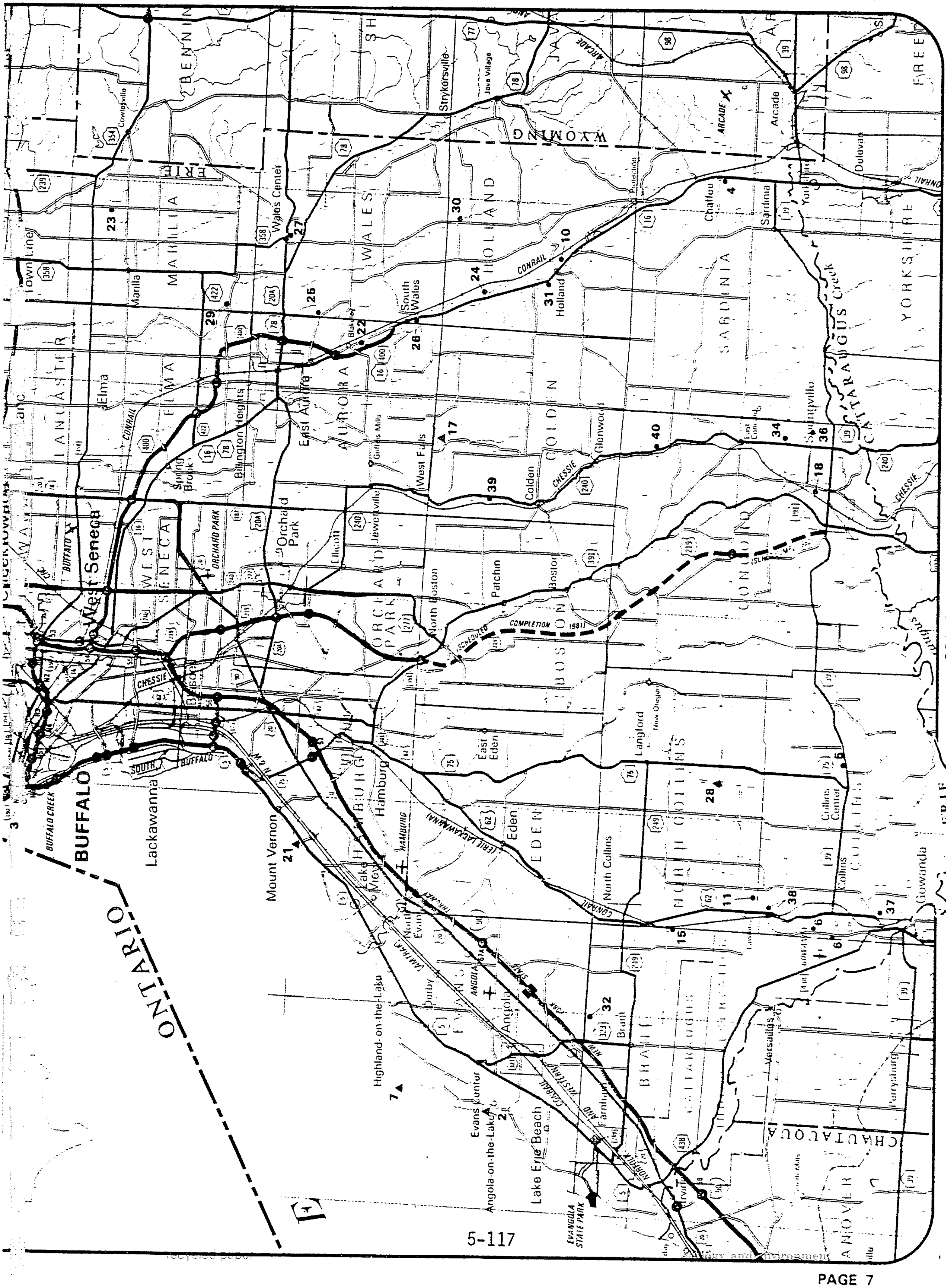
Airports (Open to the Public Military)
Runway under 4000'
Runway over 4000'

Rest Areas
Food Gas Rest Rooms
Gas Rest Rooms
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




BUFFALO
West Seneca
Lackawanna
Lake Erie
ONTARIO
Mount Vernon
Hamburg
Lake View
Orchard Park
East Aurora
Elma
Marilla
Wales Center
South Wales
Holland
Sardinia
Chaffee
Arcade
Strykersville
Java Village
Delevan
Yorkshire
Springville
East Concord
Glenwood
Colden
West Falls
Jewettville
Ellicott
North Boston
Patchin
Boston
East Eden
Eden
Langford
New Oregon
North Collins
Collins Center
Collins
Gowanda
Angola
Derby
North Evans
Highland-on-the-Lake
Evans Center
Angola-on-the-Lake
Lake Erie Beach
Brant
Farnham
Versailles
Perrysburg
Irving
EVANGOLA STATE PARK
Billington Heights
Spring Brook
Blakeley
Cowlesville
Town Line
ERIE
WYOMING
CHAUTAUQUA
CATTARAUGUS
LANCASTER
MARILLA
WALES
HOLLAND
SARDINIA
ELMA
AURORA
COLDEN
CONCORD
WEST SENECA
ORCHARD PARK
BOSTON
HAMBURG
EDEN
NORTH COLLINS
COLLINS
EVANS
BRANT
CONRAIL
CHESSIE
ERIE LACKAWANNA
SCHEDULED COMPLETION 1981
Cattaraugus Creek
BUFFALO CREEK
NORTH
SCALE 1:250,000
5 MILES

REFERENCE NO. 11

GEOLOGY AND HYDROLOGY OF THE ONONDAGA AQUIFER IN EASTERN ERIE COUNTY, NEW YORK, WITH EMPHASIS ON GROUND-WATER-LEVEL DECLINES SINCE 1982

By Ward W. Staubitz and Todd S. Miller

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 86-4317

Prepared in cooperation with

ERIE COUNTY DEPARTMENT OF ENVIRONMENT AND PLANNING

TOWNS OF CLARENCE AND NEWSTEAD

Ithaca, New York

1987

recycled paper

ecology and environment

Geology and Hydrology of the Onondaga Aquifer in Eastern Erie County, New York, with Emphasis on Ground-Water-Level Declines Since 1982

By Ward W. Staubitz and Todd S. Miller

ABSTRACT

The Onondaga aquifer is a nearly flat-lying, 25- to 110-foot-thick, cherty limestone with moderately developed karst features such as sinkholes, disappearing streams, and solution-widened joints. Most ground water moves through solution-widened bedding planes, and some moves through vertical joints. Yield of water to 42 wells ranges from 3 to 100 gallons per minute and averages 20 gallons per minute.

Ground-water levels in the Onondaga aquifer declined during the fall of 1981 and summer and fall of 1982-85 near a 2.2-mile-long and 800-foot-wide land-surface depression in the eastern part of Erie County. More than 60 wells and several wetlands went dry, and at least three sinkholes developed. Ground-water levels were measured in 150 wells during a high-water-level period in April 1984 and a low-water period in October 1984. Water levels fluctuated 20 to 50 feet near the depression and near quarries but fluctuated only 5 to 10 feet elsewhere. The water-level decline is caused by the combined effect of ground-water removal by pumpage from a quarry (the water is then discharged to Dorsch Creek) and by the diversion of some water of Dorsch Creek since 1981 away from swallets in the 2.2-mile-long depression area, which are recharge points for the aquifer. In 1982, sinkholes formed in a surface-depression area in Harris Hill. The enlargement of sinkholes in the Harris Hill area seems unrelated to the water-level decline in the eastern part of the county and is probably caused by local drainage alterations.

INTRODUCTION

Ground-water levels in some parts of the Towns of Newstead and Clarence in eastern Erie County (fig. 1) declined greatly during the fall of 1981 and each summer and fall during 1982-85. More than 60 wells went dry during this period, most of which were then drilled deeper. Some of the redrilled wells went dry in subsequent years, and others have nearly gone dry. Several wetlands in the central part of the Towns of Newstead and Clarence reportedly dried up during the summer of 1982, and at least three sinkholes developed or enlarged in the Harris Hill area in the Town of Clarence (pl. 1).

The area where water levels declined is underlain by the Onondaga Limestone--an important aquifer that, in eastern Erie County, supplies water to approximately 750 households, 20 commercial and industrial facilities, and many farms. The Onondaga aquifer is a major source of water supply elsewhere in New York State (fig. 1) and is particularly important because it provides water of suitable quality for most uses. Water in the underlying Akron and Bertie Dolomites and Camillus Shale is less desirable for most uses because it contains elevated levels of hydrogen sulfide and dissolved iron and manganese.

Table 8.--Chemical analyses of water from selected degree of saturation of each water sample

[Concentrations are in milligrams per liter.

Constituent or characteristic	Well or spring number[1], formation[2], 09-44 OLS (4-84)	49-47 OLS (4-84)	39-48 OLS (4-84)	53-20 OLS (8-85)	40-20 OLS (8-85)	13-07 OLS (8-85)	36-13 OLS (8-85)	31-11 OLS (8-85)	23-39 OLS (8-85)	34-24 OLS (4-84)
					Concentration					
Specific conductance (µS/cm)	790	783	636	790	730	870	760	710	1,100	1,610
pH	7.5	7.1	7.3	7.1	6.9	7.0	6.9	6.9	6.9	7.0
Calcium (mg/L)	94	97	80	116	98	126	106	106	135	155
Magnesium (mg/L)	46	36	38	20	16	19	35	23	46	34
Sodium (mg/L)	13	30	13	21	26	36	6.8	11	68	158
Chloride (mg/L)	55	72	28	38	53	68	7.5	23	75	325
Sulfate (mg/L)	77	47	47	196	101	161	98	75	89	66
Bicarbonate (mg/L)	176	172	174	113	118	123	172	168	261	188
Mineral					Saturation Index[3]					
Anhydrite ($CaSO_4$)	-2.0	-2.2	-2.24	-1.40	-1.78	-1.56	-1.76	-1.90	-1.77	-1.95
Aragonite ($CaCO_3$)	-.165	-.55	-.41	-.50	-.83	-.69	-.64	-.71	-.39	-.47
Calcite ($CaCO_3$)	-.01	-.396	-.26	-.35	-.68	-.54	-.49	-.56	-.24	-.32
Dolomite [$CaMg(CO_3)_2$]	-.195	-1.09	-.70	-1.14	-1.93	-1.71	-1.18	-1.57	-.67	-1.16
Gypsum ($CaSO_4.2H_2O$)	-1.60	-1.79	-1.85	-1.16	-1.45	-1.19	-1.47	-1.55	-1.48	-1.55
Magnesite ($MgCO_3$)	-.50	-1.00	-.76	-1.15	-1.59	-1.50	-1.05	-1.35	-.78	-1.16

[1] Well numbers and locations of wells are described in table 12; spring numbers and locations of springs are listed in table 10.

[2] OLS = Onondaga Limestone, BDL = Akron and Bertie Dolomites, CMS = Camillus Shale

Ground Water in the Onondaga Limestone

Ground water occurs in bedding planes and vertical joints and fractures in the Onondaga Limestone, some of which have been widened by dissolution. The upper 5 to 15 ft of the limestone contains the most joints, all of which are widened by the more intense weathering that occurs near land surface.

Bedding planes.--Bedding planes, which transmit most of the water in the Onondaga Limestone, are planar openings parallel to the nearly horizontal bedding in the rock. They were formed by the expansion of the rock during removal of weight by erosion of overlying rock units and by the retreat of

wells and springs in the Newstead-Clarence area and with respect to selected minerals.

Analyses by Erie County Laboratory.]

and date (month-year) of samples											
34-24 OLS (8-85)	24-48 OLS (4-84)	24-48 OLS (8-85)	55-48 OLS (4-84)	55-48 OLS (8-85)	38-59 BDL (2-84)	56-59 CMS (2-84)	30-59 OLS (2-84)	Spring 22 (4-84)	Spring 9 (4-84)	Spring 8 (4-84)	Spring 12 (4-84)
					Concentration						
1,300	1,600	1,400	1,090	1,100	580	1,020	640	490	597	481	433
7.2	6.8	7.1	7.1	7.1	7.5	7.5	7.5	7.0	6.8	6.7	7.1
141	150	150	110	126	79	160	81	75	92	76	68
35	53	42	49	50	14	28	12	11	9.1	8.3	5.8
92	125	65	44	61	17	4	33	23	35	20	22
170	275	135	10	145	36	9.4	68	40	65	40	43
236	121	230	93	118	33	310	31	37	22	23	19
137	250	187	176	226	124	130	114	95	119	104	88
					Saturation Index						
-1.3	-1.71	-1.40	-1.86	-1.61	-2.33	-1.24	-2.4	-2.3	-2.5	-2.5	-2.61
-.28	-.55	-.34	-.48	-.13	-.31	-1.11	-.34	-.63	-1.04	-1.26	-.95
-.134	-.40	-.19	-.48	+.02	-.16	+.40	-.19	-.47	-.88	-1.11	-.79
-.537	-1.08	-.70	-.82	+.02	-.90	-.49	-1.05	-1.69	-2.69	-3.09	-2.54
-1.08	-1.34	-1.05	-1.50	-1.42	-1.96	-.87	-1.98	-1.90	-2.07	-2.09	-2.19
-.77	-1.08	-.851	-.82	-.38	-1.07	-.86	-1.20	-1.52	-2.11	-2.29	-2.06

[3] Saturation index (SI) <0 indicates the water is undersaturated with respect to the mineral,
SI = 0 indicates the water is in theoretical equilibrium with the mineral.
SI >0 = indicates the water is oversaturated with respect to the mineral.

glaciers from the area. Major bedding planes extend at least several miles, which makes them effective conduits for ground water. Although the separation along bedding planes is generally small (less than 1/4 inch), dissolution has widened them to several inches in some places. Bedding planes widened by dissolution were observed in quarries and along the escarpment at the bottom of the Onondaga and at the top of the Clarence Member of the Onondaga. These planes undergo a greater rate of dissolution than smaller joints because they form a preferential path for horizontal ground-water flow. The downward migration of water is inhibited by the relatively impermeable underlying Akron and Bertie Dolomites and some massive beds within the Onondaga, especially the Clarence Member of the Onondaga, 50 to 75 percent of which is highly insoluble chert.

The walls of quarries show where prominent joints occur in the Onondaga Limestone. A quarry in the southwestern part of the study area (pl. 1) has large seeps of water from two prominent bedding planes; one was observed on top of the cherty Clarence Member (altitude about 625 ft), and the other was reported by the quarry operator to be at the base of the Onondaga (altitude 565 ft), where water cascades into a sump pit.

Vertical joints.--Vertical joints are planar openings roughly perpendicular to bedding planes but are generally less extensive and therefore form less significant water-bearing openings except where dissolution has widened them. Vertical joints in the study area are typically 5 to 18 ft apart, penetrate 10 to 25 ft, and are preferentially oriented N75°E, N40°W, and N5°E (Goldberg-Zoino Associates, 1984). Most vertical joints extend several tens of feet laterally, but some extend for several miles. A quarry that previously occupied the site of Spaulding Lake, north of Main Street in the Town of Clarence (pl. 1), was abandoned when mining intercepted a major vertical joint from which large volumes of water flooded the quarry. The joint's trend is N43°W and is traceable on air photos from the escarpment at County Route 216 (Old Goodrich Road) to Tillman Swamp.

The separation along vertical joints ranges from less than 1/16 inch to 0.5 ft. The wider separations are in the upper 5 to 15 ft of the Onondaga Limestone, where dissolution is most rapid, and at the escarpment, where tension-release stresses from the absence of supporting rock mass has caused the rock to expand away from the cliff. Vertical joints become narrower, less numerous, and less continuous with depth.

Well yields.--The reported yield of 42 wells with open-hole construction that tap the Onondaga aquifer indicated that the yields of wells range from 3 to 100 gal/min and average 20 gal/min. The yield of water to a well depends on how many saturated bedding planes and vertical joints with significant openings are penetrated. The highest reported well yields in the study area are near the channellike depression in the central part of Newstead (pl. 1), which indicates the presence of numerous, continuous, solution-widened joints beneath the depression area.

Recharge.--The ultimate source of recharge is precipitation, which reaches the saturated zone in the Onondaga aquifer by (1) direct areal infiltration of rain and snow-melt through the overlying unconsolidated deposits (lake deposits and till), (2) flow of stream water into swallets and into vertical joints that intersect stream channels, and (3) seepage of water from wetlands through the underlying organic debris and glacial deposits into the Onondaga aquifer. Recharge occurs over most of the study area except at the base of the escarpment, in quarries where water is pumped, in the upgradient parts of wetlands during periods of high water levels, and in the channellike depression during periods of low water levels. The rate of recharge to the aquifer depends on the amount of precipitation and streamflow available for recharge, the amount of water lost through evapotranspiration, and the permeability of the Onondaga Limestone and overlying unconsolidated deposits. Each of these factors is described below.

Infiltration of precipitation. If the amount of water available for recharge either exceeds the rate at which water can move to the water table, or the

rate at which water can flow through the aquifer, recharge either becomes ponded at land surface or is lost as runoff. This occurs in many places in the spring, when large amounts of snowmelt and rain exceed the infiltration capacity of the area. During this period, intermittent streams flow from a few weeks to several months, and water accumulates in low areas, such as wetlands and the channellike depression areas in Newstead and Harris Hill.

Conversely, when the amount of water available for recharge is less than the discharge from the aquifer, ground-water levels decline. Comparison of the long-term average monthly precipitation with the corresponding estimated potential evapotranspiration (table 4) reveals that the 19.6 inches of potential evapotranspiration exceeds the 16.1 inches of precipitation from May through September, which means that little of the precipitation during this period is available for ground-water recharge, so that ground-water levels decline. Intermittent streams flow and water ponds in low areas only during heavy rains and snowmelt. After periods of significant precipitation, ground-water levels rise for a time (from several hours to 3 days). Hydrographs of water levels in wells measured during 1983-85 (pl. 4) show that water levels declined from May through October and rose from November through April.

Infiltration from streams. Streamflow that seeps into swallets provides a significant amount of recharge to the Onondaga aquifer. At least 14 swallets were identified in the study area, the majority of which are clustered within the channellike depression near South Newstead Road, Steiner Road, and Ayers Road in the Town of Newstead (pl. 1). Individual swallets were observed to accept streamflow at rates of 0.1 to 1.5 ft^3/s without overflowing; a cluster of swallets, such as those within the channellike depression in the Newstead area, could probably accept several times that amount before ponding would occur. Immediately after snowmelt or particularly heavy rains, however, the swallets may not accept all of the incoming streamflow if the carrying capacity of the aquifer is exceeded and ground-water levels rise. During these periods, the swallet may overflow and produce runoff to tributaries that drain outside the study area. During the summer and fall, intermittent streams that flow into swallets dry up.

At the top of the escarpment, some streamflow seeps downward through vertical joints exposed in the stream channels. These joints have been enlarged by tension-release stresses, ice wedging, and dissolution; they range in width from 0.25 to 8 inches. Most of the water that seeps into the Onondaga aquifer at the top of the escarpment discharges to springs and streams at the base of the escarpment, where more impermeable bedrock units (Akron and Bertie Dolomites) that underlie the Onondaga Limestone retard further vertical seepage.

Regional flow and discharge.--Ground water in the Onondaga aquifer moves from areas of higher head (recharge areas) to areas of lower head (discharge areas) through a network of joints and bedding planes. The direction of ground-water movement in the Onondaga aquifer during a period of high ground-water levels (April 1984) and low ground-water levels (October 1984) is shown by arrows on the potentiometric-surface maps in plates 2 and 3, respectively. Water levels in approximately 150 wells were measured once during each of

these two months to document the seasonal fluctuation of ground-water levels and the changes in direction of ground-water flow. Ground water discharges to wells, springs, wetlands, the channellike depressions, and quarries.

Ground-water movement in the Onondaga aquifer generally follows the east-to-west slope of the Erie-Niagara basin--that is, it moves from the higher parts of the basin in eastern Erie County to lower areas further west and eventually discharges to Lake Erie or the Niagara River (fig. 3). In the central part of the study area, flow paths in the underlying Akron and Bertie Dolomites and Camillus Shale are similar to those of the Onondaga aquifer (Goldberg-Zoino and Associates, 1984), except that the Akron and Bertie Dolomites have a larger downward component of flow than the Onondaga aquifer (fig. 3).

The differences in hydraulic conductivity (permeability) of the four formations have a significant effect on the regional flow system. Hydraulic conductivity values for the Onondaga Limestone, Akron Dolomite, Bertie Dolomite, and Camillus Shale are summarized in table 9. The Camillus Shale is the most permeable aquifer. As a result of dissolution of gypsum, the shale is 2 to 3 times more permeable than the Onondaga Limestone, which is, in turn, 4 to 10 times more permeable than the Akron and Bertie Dolomites.

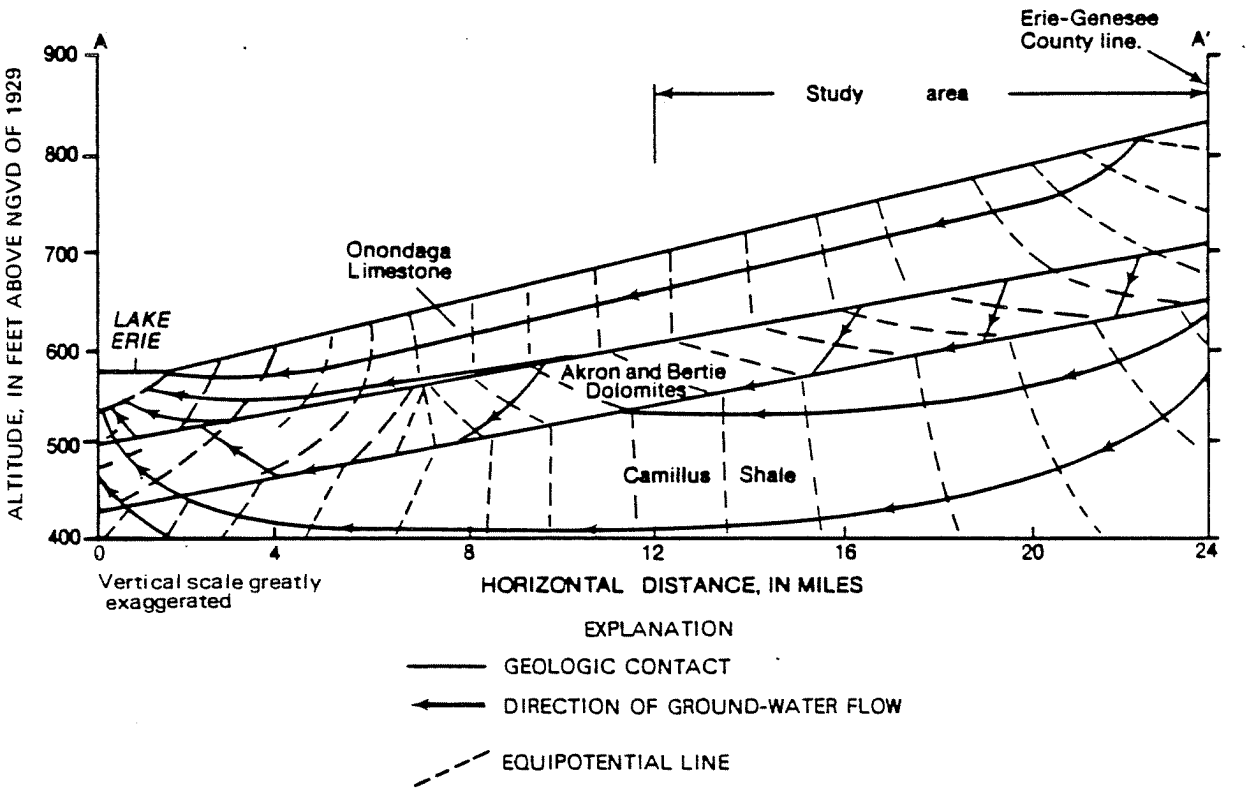


Figure 3.--Generalized regional ground-water movement from study area to Lake Erie.

Table 12.--Records of Selected Wells in Eastern Erie County, N.Y.

NUMBERING AND ARRANGEMENT OF WELLS

All wells and borings are identified by latitude and longitude to the nearest second, as measured from 7 1/2-minute topographic maps, scale 1:24,000. The location of each well or boring record was plotted on these maps by U.S. Geological Survey staff during a visit to the site or from large-scale engineering drawings.

The location of each well and boring is shown on plate 4 and on additional maps within the text. The four numbers used to identify each well on these illustrations are the seconds of latitude and longitude. For example, a well located at 42°45'38" latitude and 78°34'31" longitude is identified in illustrations as well 38-31. Data are arranged in 1-minute strips of latitude and longitude, and well numbers are placed near the well symbols. The first well in this listing is in the southernmost strip and is followed by other strips successively farther north.

ABBREVIATIONS

1. Type of well

Drl = drilled
Dug = dug
Drv = driven
Aug = augered

2. Well finish

S = screen
O = open hole

3. Aquifer type

On = Onondaga Limestone
AB = Akron and Bertie Dolomites
Cm = Camillus Shale
S&G = Sand and gravel

4. Land-surface elevation

in feet above sea level, estimated from topographic maps.

Table 12.--Records of selected wells in eastern Erie County, N.Y. (continued).

Location latitude-longitude	Owner	Date drilled	Type of well	Well depth (ft)	Casing or hole diam. (in.)	Well finish	Aquifer type	Land-surface elevation (ft)	Water level: Depth below land surface (ft) April 24-25, 1984	Water level: Depth below land surface (ft) Oct. 11-12, 1984	Well yield (gal/min)	Remarks
4257 42 7837 58	A. Pfuelb	--	Drl	--	6	0	On	736.3	15.0	15.0		
4257 43 7830 48	K. Smith	--	Drl	54	6	0	On	796	11.3	20.2		
4257 45 7834 20	L. Wisniewski	1983	Drl	96	6	0	On	793.2	32.3	64.4		
4257 47 7834 21	Massinger	--	Drl	95	6	0	On	792.1	32.5	63.1		Redrilled, old depth = 72 ft
4257 47 7834 25	B. McCumber	--	Drl	95	6	0	On	790.6	31.9	60.9		Redrilled, old depth = 70 ft
4257 50 7834 20	Remington	10/82	Drl	100	6	0	On	791.9	30.9	62.8	10	Redrilled, old depth = 60 ft
4257 51 7838 41	--	1981	Drl	38	0.75	S	On	722	+0.1	3.5		Redrilled
4257 52 7833 42	--	--	Drl	54	6	0	On	798	23.6	Dry		
4257 53 7834 20	Reinecki	10/82	Drl	110	6	0	On	792.1	31.1	63.2	50	Redrilled
4257 54 7838 11	--	1981	Drl	35	.75	S	On	723	1.2	3.3		
4257 55 7829 45	Tarboy	--	Drl	50	6	0	On	809	7.0	13.7		
	Richardson	9/82	Drl	94	6	0	On	807	--	--		
4257 55 7830 28	D. Mileham	--	Drl	70	6	0	On	800	5.8	12.7		Redrilled
4257 55 7830 48	Guidie	7/83	Drl	82	8	0	On	803	21.9	32.4	10	
4257 55 7834 20	Hoffman	1982	Drl	102	6	0	On	791.4	30.6	62.5	20	
4257 56 7837 59	GZA	1984	Drl	175	6	S	Cm	727.7	--	--		
4257 57 7829 01	Brzuszkiewicz	--	Drl	30	2	0	On	813	4.1	3.9		
4257 57 7834 23	Tagliarino	--	Drl	125	6	0	On,Ab	801	--	72.1	1	Redrilled, old depth = 77 ft
4257 59 7836 29	U.S. Geological Survey	1981	Aug	12	.75	S	S & G	763.7	8.1	9.9		
4258 01 7830 48	Vohwinkel	--	Drl	32	6	0	S & G	805	7.1	--	30	
4258 02 7840 00	--	1981	Drl	41	6	S	On	694.9	30.6	45.6		
4258 05 7830 45	Schoenthal	--	Drl	22	6	0	S & G	803	2.7	--		
4258 05 7830 48	Koelles	--	Drl	20	6	0	S & G	805	3.5	--		
4258 09 7839 42	Burdette	--	Drl	--	6	0	On	705	--	11.0		
4258 09 7839 46	Laugs	--	Drl	--	6	0	On	705	4.7	11.3		
4258 11 7828 42	Goodhue	--	Drl	--	2	0	On	832.9	32.2	32.3	5	
4258 11 7834 03	T. Wende	--	Drl	--	6	0	On	783.9	21.0	33.0		
4258 11 7834 23	U.S. Geological Survey	--	Aug	32	2	S	S & G	798.4	14.8	18.7		
4258 13 7833 07	Schultz	--	Drl	100	6	0	On	784.4	15.2	48.6	75	Redrilled, old depth = 57 ft
4258 15 7834 51	Town of Clarence	--	Drl	>100	2	S	Ab,Cm	801.9	52.1	74.0		
4258 16 7832 51	Burke	--	Drl	86	6	0	On	791.0	21.3	54.5		Redrilled, old depth = 56 ft
4258 18 7835 30	U.S. Geological Survey	1981	Aug	43	2	S	S & G	770.1	23.3	32.1		
4258 19 7835 07	Melbourne	--	Drl	40	6	0	On	790.1	24.8	24.3		
4258 20 7831 39	Neiman	--	Drl	105	6	0	On	788	--	35.6		
4258 20 7831 54	Thompson	--	Drl	--	6	0	On	785	11.0	27.8		Redrilled, old depth = 37 ft
4258 20 7832 01	Perris	8/83	Drl	170	6	0	On,Ab,Cm	785	12.0	--	20	Redrilled, old depth = 60 ft

Table 12.--Records of selected wells in eastern Erie County, N.Y. (continued).

Location latitude-longitude	Owner	Date drilled	Type of well	Well depth (ft)	Casing or hole diam. (in.)	Well finish	Aquifer type	Land-surface elevation (ft)	Water level Depth below land surface (ft) April 24-25, 1984	Water level Depth below land surface (ft) Oct. 11-12, 1984	Well yield (gal/min)	Remarks
4258 21 7831 32	Werner	8/83	Drl	81	6	O	On	789	14.0	--		Redrilled, old depth = 29 ft
4258 21 7835 20	H. Bloodsworth	--	Drl	49	6	O	On	779.5	32.5	40.5		
4258 21 7835 23	R. Bickert	--	Drl	50	6	O	On	776.6	31.4	39.4		
4258 22 7833 08	D. Buganhagen	--	Drl	95	6	O	On	782.9	13.5	46.1		
4258 22 7833 42	G. Dorr	8/82	Drl	110	6	O	On	767.0	2.1	31.6	10	Redrilled, old depth = 28 ft
4258 22 7839 42	G. Compton	--	Drl	--	6	O	On	713	5.6	15.7		
4258 23 7827 51	Jarudzin	--	Drl	72	6	O	On	843.1	--	51.0		Redrilled, old depth = 50 ft
4258 23 7831 39	Browdy	--	Drl	--	6	O	On	795	--	--		
4258 23 7832 17	J. Weaver	--	Drl	86	6	O	On	782.4	11.5	41.1	10	Redrilled
4258 23 7833 34	A. Buganhagen	8/82	Drl	100	6	O	On	772.0	7.3	31.8		Redrilled, old depth = 40 ft
4258 23 7841 14	--	8/81	Drl	34	0.75	S	On	703	8.2	17.5		
4258 24 7830 48	Richardson	9.82	Drl	94	6	O	On	807	--	--		Redrilled, old depth = 81 ft
4258 24 7839 38	K. Metz	--	Drl	--	6	O	On	714	5.1	14.2		
4258 29 7827 50	Jarudzin	7/78	Drl	84	6	O	On	842.7	28.1	51.6	10	Redrilled
4258 29 7828 46	Carlson	9/76	Drl	73	6	O	On	817.7	17.2	--		
4258 29 7837 34	Stephan	--	Drl	--	6	O	On	731	6.2	13.5		
4258 30 7832 16	Szpylmans	9/83	Drl	131	6	O	On,Ab	781.9	9.4	43.9	3	Redrilled
4258 31 7827 41	Fisher	--	Drl	110	6	O	On	821	23.2	38.3		
4258 31 7829 11	Raduns	8/85	Drl	76	6	O	On	807.4	10.4	25.6		Redrilled from 32 to 76 ft, yield = 20 gal/min
4258 32 7829 46	Casseri	--	Drl	--	6	O	On	800	11.3	23.6		
4258 33 7830 55	U.S. Geological Survey	7/84	Drl	40	2	S	On	790	--	38.9		
4258 34 7828 14	Hyde	--	Drl	90	6	O	On	823	20.8	24.0		
4258 34 7828 32	Fosmer	1972	Drl	50	6	O	On	822.5	23.8	31.6		
4258 34 7828 35	Kuhn	--	Drl	--	6	O	On	823.0	--	38.8	15	
4258 35 7830 25	Baumler	--	Drl	72	6	O	On	802	27.5	62.5		Redrilled
4258 34 7833 07	D. Berghom	9/82	Drl	96	6	O	On	719.2	15.9	32.3	10	
4258 35 7829 55	W. Nadrowski	--	Drl	52	6	O	On	798.3	10.6	23.9		
4258 35 7830 25	Baumler	--	Drl	75	6	O	On	802	26.9	dry		
4258 35 7833 10	Rebrovitch	--	Drl	40	6	O	On	770.3	12.9	22.3		
4258 35 7835 55	Twele	7/82	Drl	62	6	O	On	732	15.8	21.5	25	Redrilled
4258 36 7828 43	Ballow	--	Drl	--	6	O	On	823.6	24.2	--		
4258 36 7829 50	S. Nagy	--	Drl	--	6	O	On	798.6	16.4	29.1		
4258 36 7832 13	Eckert	8/82	Drl	91	6	O	On	781.9	11.6	43.7	10	Redrilled
4258 36 7838 49	McLaughlin	--	Drl	97	6	O	On	726	12.8	23.6		
4258 37 7828 43	Bednarek	--	Drl	--	6	O	On	819.2	17.4	28.6	10	

REFERENCE NO. 12

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 knowledgeab individuals. Most locations have not 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/// - New York State Department of Environmental Conservation
Bureau of Wildlife - Wildlife Habitat Section - Significant Habitat Program

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 degradate 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

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

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.

AK
#15-18

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. Turkey Vulture nest - unconfirmed

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
ecology and environment

REFERENCE NO. 13

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: Clarence Ready Mix

I.D. NUMBER: 915114

PERSON CONTACTED: David Weaver

DATE: 4/12/89

PHONE NUMBER: (716) ~~655-1210~~ 652-5453

AFFILIATION: Cooperative Extension Agent ~~Soil Conservation Service~~

CONTACT PERSON(S):

ADDRESS: 21 S. Grove St., East Aurora, NY ~~14731~~ 14052

TYPE OF CONTACT: Telephone Call

INTERVIEW SUMMARY

Mr. Weaver stated that as far as he knew, there was no crop irrigation within 3 miles of the site.

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: David O. Weaver

Date: 4/26/89

REFERENCE NO. 14

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

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

VNR VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

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

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

II. SITE NAME AND LOCATION

01 Site Name (Legal, common, or descriptive name of site)	02 Street, Route No., or Specific Location Identifier				
Clarence Ready Mix	Ransom and Stage Roads				
03 City	**04 State**	**05 Zip Code**	**06 County**	**07 County Code**	**08 Cong. Dist.**
Clarence	NY	14031	Erie	029	38

09 Coordinates Latitude	Longitude	10 Type of Ownership (Check one)
42 58 15.0	78 35 27.0	[X] A. Private [ ] B. Federal _____ [ ] C. State [ ] D. County [ ] E. Municipal [ ] F. Other _____ [ ] G. Unknown

III. INSPECTION INFORMATION

01 Date of Inspection	02 Site Status	03 Years of Operation
8 / 21 / 87 (Month Day Year)	[ ] Active [X] Inactive	Circa 1970 (Beginning Year) / 1978 (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, Inc. (Name of Firm) [ ] G. Other _____ (Specify)

05 Chief Inspector	06 Title	07 Organization	08 Telephone No.
A. Mark Sienkiewicz	Env. Specialist	Ecology & Environment	(716) 684-8060
09 Other Inspectors	**10 Title**	**11 Organization**	**12 Telephone No.**
			( )
			( )
			( )
			( )
			( )

13 Site Representatives Interviewed	14 Title	15 Address	16 Telephone No.
Albert J. Gilewitz, P.E.	Engineer	CS Consulting Engineers Inc. 69 Delaware, Buffalo	(716) 847-1630
			( )
			( )
			( )
			( )

17 Access Gained By (Check one)	18 Time of Inspection	19 Weather Conditions
[X] Permission [ ] Warrant	10:00	Clear, sunny, 80°F, SW breeze

IV. INFORMATION AVAILABLE FROM

01 Contact	02 Of (Agency/Organization)	03 Telephone No.
Walter E. Demick	NYSDEC	(518) 457-9538

04 Person Responsible for Site Inspection Form	05 Agency	06 Organization	07 Telephone No.	08 Date
M.J. Farrell		E & E	(716) 684-8060	10 / 2 / 87 (Month Day Year)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 State: NY	02 Site Number: 915114

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States (Check all that apply)

[X] A. Solid
[ ] B. Powder, Fines
[ ] C. Sludge
[ ] D. Other _____ (Specify)
[ ] E. Slurry
[ ] F. Liquid
[ ] G. Gas

02 Waste Quantity at Site (Measure of waste quantities must be independent)

Tons _____
Cubic Yards 3,667 (Est.)
No. of Drums _____

03 Waste Characteristics (Check all that apply)

[ ] A. Toxic
[ ] B. Corrosive
[ ] C. Radioactive
[ ] D. Persistent
[ ] E. Soluble
[ ] F. Infectious
[ ] G. Flammable
[ ] H. Ignitable
[ ] I. Highly volatile
[ ] J. Explosive
[ ] K. Reactive
[ ] L. Incompatible
[ ] M. Not applicable
[X] Unknown

III. WASTE TYPE Construction/demolition debris, municipal trash

Category	Substance Name	01 Gross Amount	02 Unit of Measure	03 Comments
SLU	Sludge			
OLW	Oily waste			
SOL	Solvents			
PSD	Pesticides			
OCC	Other organic chemicals			
IOC	Inorganic chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy Metals			

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

01 Category	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration*	06 Measure of Concentration
OCC	PCB	1336-36-3	Gravel Pit	0.11	mg/l
OCC	Phenol	108-95-2	Gravel Pit	0.45	mg/l

V. FEEDSTOCKS (See Appendix for CAS Numbers)

*Detected in groundwater by USGS in 1981 and 1982

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)

E & E, Site Inspection, 1987

D172

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. Groundwater Contamination
02 [X] Observed (Date 3/82) [ ] Potential [ ] Alleged
03 Population Potentially Affected 751
04 Narrative Description:

PCBs, chloroform, phenol, alpha-BHC detected near site, low levels, unknown source.

01 [X] B. Surface Water Contamination
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Population Potentially Affected 0
04 Narrative Description:

High potential exists for materials to enter the south pond due to high permeability of soil.

01 [ ] C. Contamination of Air
02 [ ] Observed (Date) [ ] Potential [ ] Alleged
03 Population Potentially Affected
04 Narrative Description:

Low potential, no on-site ambient air readings above background were detected by an HNU air monitoring instrument during the site inspection.

01 [X] D. Fire/Explosive Conditions
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Population Potentially Affected Unknown
04 Narrative Description:

The potential exists for methane production from the decomposition of organic materials.

01 [X] E. Direct Contact
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Population Potentially Affected Unknown
04 Narrative Description:

A low potential exists for direct contact by employees.

01 [X] F. Contamination of Soil
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Area Potentially Affected 6 (Acres)
04 Narrative Description:

The potential exists for soil contamination onsite.

01 [X] G. Drinking Water Contamination
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Population Potentially Affected 751
04 Narrative Description:

The potential exists for possible contaminants from the site to enter the Onondaga Aquifer.

01 [X] H. Worker Exposure/Injury
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Workers Potentially Affected Unknown
04 Narrative Description:

Potential exists for past exposure of landfill employees.

01 [X] I. Population Exposure/Injury
02 [ ] Observed (Date) [X] Potential [ ] Alleged
03 Population Potentially Affected 751
04 Narrative Description:

There is potential exposure due to drinking water contamination.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

II. HAZARDOUS CONDITIONS AND INCIDENTS (Cont.)

01 [X] J. Damage to Flora — 02 [X] Observed (Date 8-21-87) [ ] Potential [ ] Alleged
04 Narrative Description:

Two locations at the site had burnt brown vegetation.

01 [X] K. Damage to Fauna — 02 [ ] Observed (Date _____) [X] Potential [ ] Alleged
04 Narrative Description:

The potential exists for harm to area wildlife.

01 [X] L. Contamination of Food Chain — 02 [ ] Observed (Date _____) [X] Potential [ ] Alleged
04 Narrative Description:

The potential exists because the site inspection revealed evidence that animals were inhabiting the site and PCBs and phenols may be constaminants of concern.

01 [X] M. Unstable Containment of Wastes (Spills/Runoff/Standing liquids, Leaking drums) — 02 [ ] Observed (Date _____) [X] Potential [ ] Alleged
03 Population Potentially Affected _____ 04 Narrative Description:

Pit containing waste is not adequately covered. Fissures were noted during the site inspection.

01 [X] N. Damage to Offsite Property — 02 [ ] Observed (Date _____) [X] Potential [ ] Alleged
04 Narrative Description:

The Village of Clarence is 2,000 feet south (downgradient) from the site.

01 [X] O. Contamination of Sewers, Storm Drains, WWTPs — 02 [ ] Observed (Date _____) [X] Potential [ ] Alleged
04 Narrative Description:

The Village of Clarence is 2,000 feet south (downgradient) from the site.

01 [X] P. Illegal/Unauthorized Dumping — 02 [X] Observed (Date 12-6-78) [ ] Potential [ ] Alleged
04 Narrative Description:

Observed by NYSDEC on a site inspection performed on 12-6-78.

05 Description of Any Other Known, Potential, or Alleged Hazards

III. TOTAL POPULATION POTENTIALLY AFFECTED 751

IV. COMMENTS

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

NYSDEC file information, E & E site inspection, ECDEP file information

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

II. PERMIT INFORMATION

01 Type of Permit Issued (Check all that apply)	02 Permit Number	03 Date Issued	04 Expiration Date	05 Comments
[ ] A. NPDES				
[ ] B. UIC				
[ ] C. AIR				
[ ] D. RCRA				
[ ] E. RCRA Interim Status				
[ ] F. SPCC Plan				
[ ] G. State (Specify)				
[ ] H. Local (Specify)				
[ ] I. Other (Specify)				
[X] J. None				

III. SITE DESCRIPTION

01 Storage Disposal (Check all that apply)	02 Amount	03 Unit of Measure	04 Treatment (Check all that apply)
[ ] A. Surface Impoundment			[ ] A. Incineration
[ ] B. Piles			[ ] B. Underground Injection
[ ] C. Drums, Above Ground			[ ] C. Chemical/Physical
[ ] D. Tank, Above Ground			[ ] D. Biological
[ ] E. Tank, Below Ground			[ ] E. Waste Oil Processing
[X] F. Landfill	3,667	cu. yds.	[ ] 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

6 Acres

07 Comments

Gravel pit filled with debris, tires, trash, and appliances.

IV. CONTAINMENT

01 Containment of Wastes (Check one)

[ ] A. Adequate, Secure [ ] B. Moderate [X] C. Inadequate, Poor [ ] D. Insecure, Unsound, Dangerous

02 Description of Drums, Diking, Liners, Barriers, etc.

Cover cracked and slumping, woodchuck holes observed. No liner.

V. ACCESSIBILITY

01 Waste Easily Accessible: [ ] Yes [X] No

02 Comments:

Fill is covered but there are cracks.

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

E & E, 1987, Site Inspection

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

II. DRINKING WATER SUPPLY

01 Type of Drinking Supply (Check as applicable)

	Surface	Well
Community	A. [X]	B. [ ]
Non-community	D. [ ]	D. [X]

02 Status

Endangered	Affected	Monitored
A. [ ]	B. [ ]	C. [ ]
D. [ ]	E. [ ]	F. [ ]

03 Distance to Site

A >2 (mi)

B 0.1 (mi)

III. GROUNDWATER

01 Groundwater Use in Vicinity (Check one)

[X] 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 Groundwater 751

03 Distance to Nearest Drinking Water well 0.1 (mi)

04 Depth to Groundwater	05 Direction of Groundwater Flow	06 Depth to Aquifer of Concern	07 Potential Yield of Aquifer	08 Sole Source Aquifer
0-30 (ft)	WNW	30 (ft)	Unknown (gpd)	[ ] Yes [X] No

09 Description of Wells (Including usage, depth, and location relative to population and buildings)

Drinking wells in area north of site 0.1 mile, depth 40-50 feet, in Onondaga Limestone Aquifer, USGS monitoring well at north end of site.

10 Recharge Area

[X] Yes

[ ] No

Comments: Aquifer recharged by precipitation

11 Discharge Area

[ ] Yes

[X] No

Comments: Discharge is to Lake Erie

IV. SURFACE WATER

01 Surface Water (Check one)

[ ] A. Reservoir, Recreation, Drinking Water Source

[ ] B. Irrigation, Economically Important Resources

[X] C. Commercial, Industrial

[ ] D. Not Currently Used

02 Affected/Potentially Affected Bodies of Water

Name:	Affected	Distance to Site
Pond at south end of site	[ ]	10 feet (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. 2,298 No. of Persons	B. 5,553 No. of Persons	C. 8,530 No. of Persons

02 Distance to Nearest Population

0.1 (mi)

03 Number of Buildings Within Two (2) Miles of Site

1,877

04 Distance to Nearest Off-Site Building

100 yards (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)

Sparse residential

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

VI. ENVIRONMENTAL INFORMATION

01 Permeability of Unsaturated Zone (Check one)

[ ] A. 10^{-6} - 10^{-8} cm/sec [ ] B. 10^{-4} - 10^{-6} cm/sec [ ] C. 10^{-4} - 10^{-3} cm/sec [X] D. Greater Than 10^{-3} cm/sec

02 Permeability of Bedrock (Check one)

[ ] A. Impermeable (Less than 10^{-6} cm/sec) [ ] B. Relatively Impermeable (10^{-4} - 10^{-6} cm/sec) [X] C. Relatively Permeable (10^{-2} - 10^{-4} cm/sec) [ ] D. Very Permeable (Greater than 10^{-2} cm/sec)

03 Depth to Bedrock	04 Depth of Contaminated Soil Zone	05 Soil pH
47 (ft)	Est. 25 (ft)	Unknown

06 Net Precipitation	07 One Year 24-Hour Rainfall	08 Slope Site Slope	Direction of Site Slope	Terrain Average Slope
9 (in)	2.1 (in)	6 %	South	3-5 %

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	OTHER
A. _____ (mi)	B. 0.3 (mi)

12 Distance to Critical Habitat (of Endangered Species)

>2 (mi)

Endangered Species: _____

13 Land Use in Vicinity

Distance to:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. 0 (mi)	B. 0.1 (mi)	C. 0.3 (mi)	D. 0.3 (mi)

14 Description of Site in Relation to Surrounding Topography

Site is 2,000 feet south of the Village of Clarence. Immediately north of the site is Stage Road and a sparse residential area. East and south of the site are the gravel mining operations. West of the site is a mowed field, Ransom Road, then a large cemetery.

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

E & E, 1987, Site Inspection
USGS Topographical Map, Clarence Quadrangle
NYSDEC Files
Staubitz, USGS, 1987
ECDEP Files
Wetland Maps

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

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 readings above background.

IV. PHOTOGRAPHS AND MAPS

01 Type [X] Ground [ ] Aerial

02 In Custody of E & E
(Name of organization or individual)

03 Maps [X] Yes [ ] No

04 Location of Maps Ecology and Environment, Buffalo, New York

V. OTHER FIELD DATA COLLECTED (Provide narrative description of sampling activities)

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

E & E Site Inspection, 1987

D1720

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 7 - OWNER INFORMATION	I. IDENTIFICATION	
	01 State NY	02 Site Number 915114

II. CURRENT OWNER(S)			PARENT COMPANY (If applicable)		
01 Name Paul A. Schmidt, Clarence Materials Handling Corp.		02 D+B Number	08 Name		09 D+B Number
03 Street Address (P.O. Box, RFD #, etc.) 1007 Pineledge Drive		04 SIC Code	10 Street Address (P.O. Box, RFD #, etc.)		11 SIC Code
05 City Clarence	06 State NY	07 Zip Code 14031	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 Eric A. Krehbidl		02 D+B Number	01 Name		02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.) Unknown		04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code
05 City	06 State NY	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)

Al Weber, Town of Clarence - Real Property Appraisor, 1987

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner				

III. PREVIOUS OPERATOR(s) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				
01 Name		02 D+B Number	10 Name		11 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)		04 SIC Code	12 Street Address (P.O. Box, RFD #, etc.)		13 SIC Code
05 City	06 State	07 Zip Code	14 City	15 State	16 Zip Code
08 Years of Operation	09 Name of Owner During This Period				

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

Al Weber, Town of Clarence - Real Property Appraisor, 1987

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

II. ON-SITE GENERATOR

01 Name	02 D+B Number	
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	
05 City	06 State	07 Zip Code

III. OFF-SITE GENERATOR(S)

01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code
01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code

IV. TRANSPORTER(S)

01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code
01 Name	02 D+B Number	01 Name	02 D+B Number
03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
05 City	06 State / 07 Zip Code	05 City	06 State / 07 Zip Code

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

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

II. PAST RESPONSE ACTIVITIES

01 [ ] A. Water Supply Closed — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] B. Temporary Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] C. Permanent Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] D. Spilled Material Removed — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] E. Contaminated Soil Removed — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] F. Waste Repackaged — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] G. Waste Disposed Elsewhere — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] H. On Site Burial — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] I. In Situ Chemical Treatment — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] J. In Situ Biological Treatment — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] K. In Situ Physical Treatment — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] L. Encapsulation — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] M. Emergency Waste Treatment — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] N. Cutoff Walls — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] O. Emergency Diking/Surface Water Diversion — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] P. Cutoff Trenches/Sump — 02 Date _____ — 03 Agency _____
04 Description:

01 [ ] Q. Subsurface Cutoff Wall — 02 Date _____ — 03 Agency _____
04 Description:

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 State NY	02 Site Number 915114

II. PAST RESPONSE ACTIVITIES (Cont.)

01 [ ] R. Barrier Walls Constructed 02 Date _____ 03 Agency _____
04 Description:

01 [ ] S. Capping/Covering 02 Date _____ 03 Agency _____
04 Description:

01 [ ] T. Bulk Tankage Repaired 02 Date _____ 03 Agency _____
04 Description:

01 [ ] U. Grout Curtain Constructed 02 Date _____ 03 Agency _____
04 Description:

01 [ ] V. Bottom Sealed 02 Date _____ 03 Agency _____
04 Description:

01 [ ] W. Gas Control 02 Date _____ 03 Agency _____
04 Description:

01 [ ] X. Fire Control 02 Date _____ 03 Agency _____
04 Description:

01 [ ] Y. Leachate Treatment 02 Date _____ 03 Agency _____
04 Description:

01 [ ] Z. Area Evacuated 02 Date _____ 03 Agency _____
04 Description:

01 [ ] 1. Access to Site Restricted 02 Date _____ 03 Agency _____
04 Description:

01 [ ] 2. Population Relocated 02 Date _____ 03 Agency _____
04 Description:

01 [ ] 3. Other Remedial Activities 02 Date _____ 03 Agency _____
04 Description:

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

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 State	02 Site Number
NY	915114

II. ENFORCEMENT INFORMATION

01 Past Regulatory/Enforcement Action [X] Yes [ ] No

02 Description of Federal, State, Local Regulatory/Enforcement Action

NYSDEC Legal Referral
Alleged Violation of 6NYCRR360
December 8, 1978.

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

NYSDEC File Information

6. ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

Little data is available concerning site-specific contaminants and the nature of materials buried at the landfill. This lack of data may result in an unrealistically low HRS score.

Calocerinos and Spina, the consultant for the Clarence Materials Handling Company, has submitted a Feasibility Study and Remedial Action plan to Jack Tygert of NYSDEC which proposes to exhume the wastes in the landfill and entomb them in a permitted construction and demolition landfill. According to the plan, remedial investigations will occur prior to and during the exhumation (E & E 1987).

It is recommended that no further actions be conducted at the Clarence Ready Mix site pending the outcome of the negotiations between NYSDEC and Calocerinos and Spina.

In the event that negotiations are discontinued, a Phase II study should be conducted to determine the nature and extent of materials buried in the gravel pit. The study should include:

- Installation of groundwater monitoring wells up- and down-gradient;
- Collection of groundwater samples;
- Collection of surface water samples from the on-site pond; and
- Collection of surficial soil samples to determine if soils are contaminated.

7. REFERENCES

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Appendices

APPENDIX A

PHOTOGRAPHIC RECORD

ecology and environment, inc.

P H O T O G R A P H I C R E C O R D

Client: New York State Department of Conservation E & E Job No.: ND-2021

Camera: Make Olympus OM-10 SN: 2387486

Photographer: M. Sienkiewicz

Date/Time: 8/21/87 10:45

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 5

Comments*: Site from south-east corner looking to the northwest corner.

Photographer: M. Sienkiewicz

Date/Time: 8/21/87 10:45

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 6

Comments*: Site from the north end looking to the south.

*Comments to include location

ecology and environment, inc.

PHOTOGRAPHIC RECORD

Client: New York State Department of Conservation

E & E Job No.: ND-2021

Camera: Make Olympus OM-10

SN: 2387486

Photographer: M. Sienkiewicz

Date/Time: 8/21/87 10:30

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 1

Comments*: Site from north-east corner looking south to pond.

Photographer: M. Sienkiewicz

Date/Time: 8/21/87 10:40

Lens: Type: 35-70 mm

SN: 301285

Frame No.: 2

Comments*: Stressed vegetation on site.

*Comments to include location

D1720

ecology and environment, inc.

PHOTOGRAPHIC RECORD

Client: New York State Department of Conservation | E & E Job No.: ND-2021

Camera: Make Olympus OM-10 | SN: 2387486

Photographer: M. Sienkiewicz
Date/Time: 8/21/87 10:40
Lens: Type: 35-70 mm
SN: 301285
Frame No.: 3
Comments*: Site from south pond looking north to the northeast corner.

Photographer: M. Sienkiewicz
Date/Time: 8/21/87 10:45
Lens: Type: 35-70 mm
SN: 301285
Frame No.: 4
Comments*: Pond, located at south end of site.

*Comments to include location

D1720

APPENDIX B

UPDATED NYSDEC INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

Priority Code: 2a Site Code: 915114

Name of Site: Clarence Ready Mix Region: 9

Street Address: 10725 Stage Road

Town/City: Clarence, New York County: Erie

Name of Current Owner of Site: Paul A. Schmidt/Clarence Materials Handling Corp.

Address of Current Owner of Site: 1007 Pineledge Road, Clarence, New York

Type of Site: [ ] Open Dump [ ] Structure [ ] Lagoon
[X] Landfill [ ] Treatment Pond

Estimated Size: 6 acre(s)

Site Description:

Six-acre, 25-foot deep, landfill, allegedly used for the illegal disposal of construction and demolition material. No liner exists, cover of 2 feet is cracked and slumping.

Groundwater sampled from the USGS well near Ransom and Stage Roads had slightly elevated concentrations of PCBs and phenol.

Hazardous Waste Disposed: [ ] Confirmed [ ] Suspected
Unknown

Type and Quantity of Hazardous Wastes Disposed:

Type	Quantity (Pounds, Drums, Tons, Gallons)

Time Period Site was Used for Hazardous Waste Disposal:

circa, 1970 To circa, 1978

Owner(s) During Period of Use: Paul A. Schmidt/Clarence Materials Handling Corp.

Site Operator During Period of Use: Paul A. Schmidt/Clarence Materials Handling Corp.

Address of Site Operator: 1007 Pineledge Road, Clarence, New York

Analytical Data Available: [ ] Air [ ] Surface Water [X] Groundwater
[ ] Soil [ ] Sediment [ ] None

Contravention of Standards: [X] Groundwater [ ] Drinking Water
[ ] Surface Water [ ] Air

Soil Type: Palmyra gravelly loam

Depth to Groundwater Table: 0-30 feet

Legal Action: Type: Legal Referral [X] State [ ] Federal

Status: [ ] In Progress [X] Completed

Remedial Action: [X] Proposed [ ] Under Design
[ ] In Progress [ ] Completed

Nature of Action: Exhume and entomb wastes

Assessment of Environmental Problems:

Unknown - dependent on site contaminants

Assessment of Health Problems:

Unknown - dependent on site contaminants

Person(s) Completing This Form:

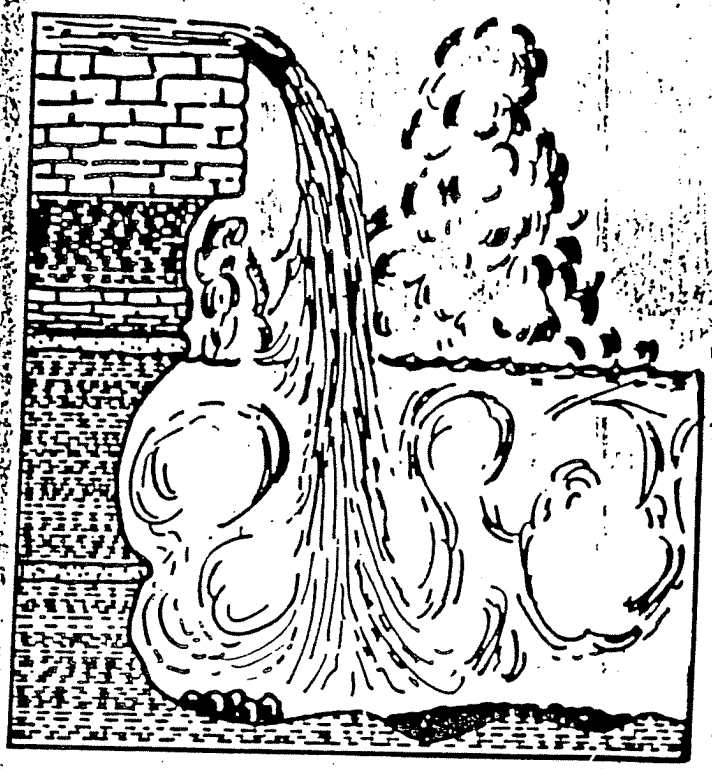
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION		NEW YORK STATE DEPARTMENT OF HEALTH	
Name:		Name:	
Title:		Title:	
Name:		Name:	
Title:		Title:	
Date:		Date:	

APPENDIX C

PHOTOCOPIED REFERENCES

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.

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.

recycled paper ecology and environment

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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

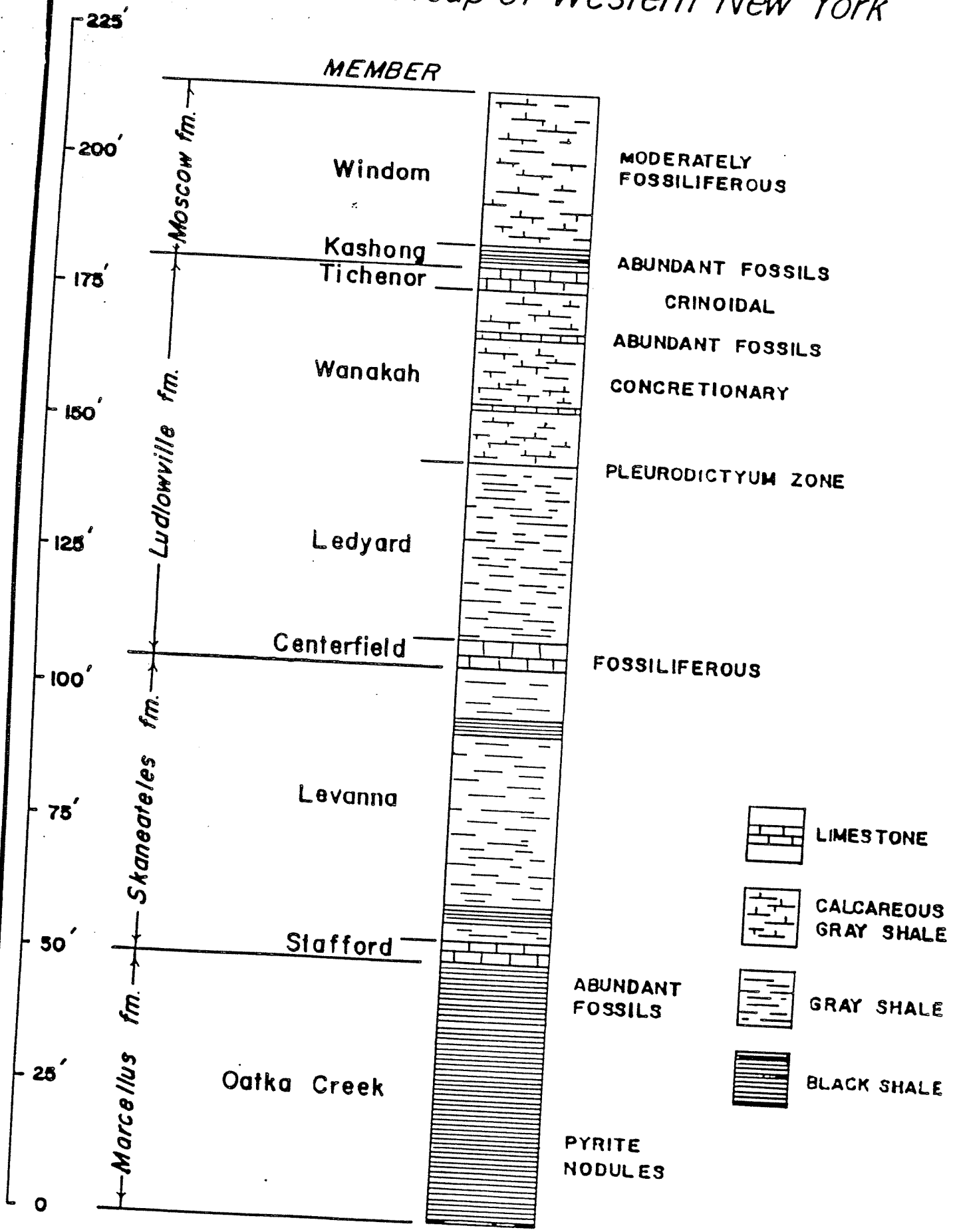
Circumstances which developed at the last minute left us without a paper on the Hamilton Group of Western New York. There was, of course, no intent to slight this most interesting and richly fossiliferous section of rock. Therefore, a column (fig. 1) a few notes and references are inserted here.

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



UPPER DEVONIAN STRATIGRAPHY AND PALEONTOLOGY OF SOUTHWESTERN NEW YORK STATE (ERIE, CHAUTAUQUA AND CATTARAUGUS COUNTIES)

by Dr. Irving H. Tesmer

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Upper Devonian rocks in southwestern New York State consist of about 2500 feet of largely detrital material associated with the Catskill Clastic Wedge. During Late Devonian time, clastic sediment gradually spread westward and northwestward across New York State and Pennsylvania, eventually filling the epeiric seas that occupied the Appalachian Trough and adjacent areas.

There is some disagreement as to the exact boundaries that mark the base and top of the Upper Devonian in southwestern New York State but the present writer includes all strata from the base of the Geneseo Member of Genesee Formation to the top of the Cattaraugus Formation (Cooper et al., 1942; Rickard, 1964). The overlying Knapp Conglomerate is considered to be Lower Mississippian (Holland, 1959).

Some authors have subdivided Upper Devonian strata into two series, an earlier Senecan and a later Chautauquan. Although there may be some paleontological evidence (especially cephalopods) to suggest this, the present writer does not see strong justification for such a division in southwestern New York State and therefore assigns all Upper Devonian units to a single series, the Chautauquan.

Within the Chautauquan Series, three groups are recognized (Tesmer, 1955), in ascending order the Seneca (600 feet), Arkwright (1250 feet) and Conewango (650 feet). The boundaries between these groups are based upon lithologic changes and facies differences that are persistent throughout the three counties of southwestern New York, namely Erie (Buehler and Tesmer, 1963), Chautauqua (Tesmer, 1963) and Cattaraugus. The Seneca Group extends from the base of the Geneseo Member of the Genesee Formation to the top of the Hanover Member of the Java Formation. The Arkwright Group includes strata from the base of the Dunkirk Member of the Canadaway Formation to the top of the Ellicott Member of the Chadakoin Formation. Locally assigned to the Conewango Group is the Cattaraugus Formation. It includes redbeds, conglomerates and coarse buff sandstones interbedded with marine siltstones and shales.

The Seneca Group includes in ascending order the Genesee, Sonyea, West Falls, and Java Formations. These units are largely gray and black shales although a few limestone and siltstone beds also occur. Although the Genesee Formation varies only from about 10 to 20 feet in thickness, various members have been recognized including the Geneseo Shale (2 inches to 2 feet of black shale), Penn Yan Shale (9 inches of dark gray shale) [deWitt and Colton, 1959], Genundewa Limestone (2 inches to 2 feet of light to dark gray limestone) and West River Shale (8 to 14) feet of gray shale. The Genundewa and West River Members include numerous species of conodonts and fish but the faunal content of the thin Geneseo and Penn Yan Members is less well known in Erie County.

The Sonyea Formation (Colton and deWitt, 1958) is divided into an older Middlesex Shale and younger Cashaqua Shale Member. The 6 to 8 feet of black Middlesex shales contain some conodonts and the 35 to 75 feet of gray Cashaqua shales have a modest molluscan fauna including several species of the cephalopod *Manticoceras*.

The next youngest unit is the West Falls Formation (Colton, 1956; de Witt, 1956; Pepper, de Witt and Colton, 1956) consisting of an older Rhinestreet Shale (150 to 195 feet of black shale), Angola Shale (220 to 340 feet of mostly light gray shale with some interbedded dark gray shale, thin limestones and calcareous siltstones) and younger Nunda Siltstone (0 to 25 feet of light gray siltstone) Member. The Rhinestreet has a very rich conodont (Youngquist, Hibbard and Reimann, 1948) and fish (Carter, 1945) fauna, including several species of *Dinichthys* while the gray Angola shales have an entirely different faunal assemblage, almost all mollusks (Clarke, 1904). The faunal content of the Nunda Siltstone Member, limited to eastern Erie County, is as yet unknown locally.

The Java Formation (Pepper and deWitt, 1950; deWitt and Colton, 1953; deWitt, 1960) is divided into an older Pipe Creek and a younger Hanover Member. The Pipe Creek contains from one to two feet of black shale with some carbonized plant remains and conodonts. In the 85 to 95 feet of Hanover, some conodonts and mollusks have been collected. The Hanover is largely composed of gray shales but also includes some interbedded dark gray shales and thin limestones, as well as several zones of calcareous nodules. It is similar in appearance to the older Angola Shale Member of the West Falls Formation.

The Arkwright Group (Tesmer, 1955) includes an older Canadaway and younger Chadakoin Formations. These units consist of black and gray shales interbedded with an increasing percentage of gray siltstone toward the top of the group. Seven members are recognized in the Canadaway Formation of Chautauqua County, the Dunkirk (oldest), South Wales (Pepper and deWitt, 1951), Gowanda, Laona, Westfield, Shumla and Northeast (youngest). The Dunkirk Shale is composed of about 40 feet of black shale containing a few carbonized plants and conodonts. The overlying South Wales Member includes from 60 to 80 feet of interbedded gray and black shales with a limited faunal and floral content similar to the underlying Dunkirk Shale Member. Above the South Wales are found from 120 to 230 feet of mostly gray shales and siltstones with some black shale beds, assigned to the Gowanda Member. Although Gowanda fossils are not numerous nor widely distributed stratigraphically, a considerable number of species have been collected, largely mollusks and conodonts. The faunal assemblage and accompanying lithologies are quite like the older Angola Member of the West Falls Formation and the Hanover Member of the Java Formation. This marks the last appearance of the "Naples Fauna" of Clarke (1904).

The Laona Siltstone Member of the Canadaway Formation contains many species introduced for the first time in southwestern New York State. These include the brachiopods *Ambocoelia gregaria, Athyris angelica, Camarotoechia contracta* and *Tylothyris mesacostalis* as well

as the pelecypod *Mytilarca chemungensis*. The Laona attains a maximum thickness of about 25 feet of mostly gray siltstone and is essentially confined to Chautauqua County.

Above the Laona Siltstone one finds the Westfield Shale Member of the Canadaway Formation, comprised of 100 to 220 feet of gray shales with a few interbedded gray siltstones. These strata are largely barren of megafossils but a few brachiopods, plant stems and conodonts have been collected. The next youngest Shumla Siltstone Member has a nearly identical appearance to the older Laona Siltstone but is almost always barren except for scattered conodonts (Hass, 1958). The Shumla lenses as did the Laona, reaching a maximum thickness of about 35 feet. It is also essentially limited to Chautauqua County.

The thickest member of the Canadaway Formation is the uppermost Northeast Shale Member, varying from about 400 to 600 feet, and containing gray shales with considerable percentages of interbedded gray siltstones, particularly toward the top of the unit and in an eastward direction. In Cattaraugus County, where the Laona and Shumla Siltstone Members are not present, the nearly identical Gowanda, Westfield and Northeast Shale Members merge to form a very thick, undifferentiated sequence of gray shale beds with a fair percentage of interbedded gray siltstones. The Northeast Shale Member is often quite barren near the base of the unit, but the upper part of the member contains numerous specimens of *Ambocoelia gregaria, Camarotoechia contracta, Chonetes* spp., *Cyrtospirifer* spp., bryozoans and crinoid columnals.

In Chautauqua County, the Chadakoin Formation (Caster, 1934) contains an older Dexterville and a younger Ellicott Member. Both members are interbedded gray shales and siltstones, often nearly identical in appearance. The Dexterville Member, however, can be recognized by the presence of an index fossil, the brachiopod *Pugnoides duplicatus*, which is confined to this unit. In Cattaraugus County where *Pugnoides duplicatus* is nearly completely absent, the Chadakoin Formation is not differentiated into members. The Chadakoin Formation is about 250 feet thick, the Dexterville including the lower 100 feet, where recognized. Fossils are quite abundant in the Chadakoin (Caster, 1934) and various groups are represented, particularly bryozoans, brachiopods, pelecypods and conodonts. Many of the species were first introduced to the area during Laona times when a similar environment must have prevailed.

Much work remains to be done on the Conewango Group, which is locally the Cattaraugus Formation. This formation exhibits great variations in lithology, ranging from typical marine gray shales and siltstones through near-shore coarse buff sandstones and conglomerates to non-marine red shales, siltstones and sandstones. Total thickness is about 650 feet, within which there are many sandstone-conglomerate lenses. These lenses cannot be distinguished from one another in the field and must be separated by careful plotting as to geographic location and elevation. It is hoped that eventually the Cattaraugus Formation may be divided into an appropriate number of formal members (Tesmer, 1958) but presently the Cattaraugus is largely undifferentiated,

particularly in Cattaraugus County, its type locality. Faunal content is somewhat similar to the underlying Chadakoin Formation but several new genera are introduced, notably the pelecypod *Ptychopteria* (Butts, 1903; Chadwick, 1935). Some of the conglomerate lenses likely to be retained as members include the Panama, Pope Hollow, Salamanca and Wolf Creek.

GONIATITE ZONATION OF THE NEW YORK STATE DEVONIAN

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Goniatites are not uncommon in calcareous shales concretions, shales and siltstones in western New York and typically horizons bearing them tongue eastwards towards the more littoral deposits of the Catskills. Earlier goniatite horizons, in general, tongue farther east than the later horizons. Thus the Cherry Valley agoniatitid fauna is known almost to the Helderbergs, whilst the latest Famennian faunas, of the Gowanda and Ellicot Shales, have not been traced farther east than Chautauqua County. Faunas lack generic diversity when compared with corresponding European faunas, but they have a value far exceeding this apparent poverty since the horizons may be placed within successions which are known with greater stratigraphic precision than those of Europe. Their importance in establishing a zonal standard and for evolutionary studies generally cannot be over emphasized.

The most striking absentees from the New York goniatite faunas are, from the Middle Devonian, *Maenioceras*, *Sobolewia* (both known in Virginia), *Wedekindella* (known with *Maenioceras* in Canada), *Anarcestes* and *Pinacites*. The Senecan shows greater European affinity, but the probable absence of *Koenenites* (known in Michigan) and *Timanites* (known in Canada) and the rarity of *Beloceras* is striking. Only three genera of Famennian goniatites are known and clymenids are apparently absent. Future collecting may nevertheless yield more records. Elsewhere the author has related the unusual features of the goniatite faunas to a possible migration route from Europe and European Russia via the Arctic, around the northern borders of the Old Red Sandstone continent (House 1964).

ONONDAGA FORMATION

The earliest certain goniatite occurence in the state is *Foordites* cf. *Buttsi* (Miller) from the Nedrow member (Oliver 1956). This genus is not known before the Eifelian in Europe. No indubitably Lower Devonian goniaties are known.

HAMILTON GROUP

The first probable Givetian indicator is *Cabrieroceras plebeiforme* (Hall) from the Werneroceras Bed (Rickard 1952) just below the Cherry Valley Limestone: it occurs with *Parodiceras* sp. and *Subanarcestes* cf. *micromphalus* (Roemer). Shales immediately above the Werneroceras Bed contain *Agoniatites nodiferus* (Hall) (*fide* Rickard).

The Cherry Valley Limestone has yielded the types of *Agoniatites vanuxemi* (Hall), *A. intermedius* Flower, and *A. floweri* Miller, but it has been suggested (House 1962, p. 254) that these may be synonyms. In view of the importance of its descendants, *Parodiceras discoideum* (Hall) may be used as the zonal index. The succession given here for the higher Hamilton is substantially more detailed than an earlier generalized statement by the author in 1962. This results from study of the Tornoceratidae (House 1965). Skaneateles tornoceratids, *T. (T.) arkonense* etc., (better known from the Ontario contemporaries) are characterised by a shallower lateral lobe than those of the Ludlowville [*T. (T.) uniangulare widderi*], and this trend, essentially towards an increasingly steep ventrad face to the lateroumbilical saddle continues in the Moscow with the genotype from the Leicester Pyrite, *T. (T.) uniangulare uniangulare* (Conrad). A distinct ribbed form first noted by Professor J. W. Wells, from the King Ferry Shale on Cayuga Lake has been named *T. (T.) amuletum*. It is probable, but not certain, that this species is younger than *T. (T.) uniangulare aldenense* from the Alden Marcasite. Agoniatitids are also not uncommon in the Hamilton, but these have not, as yet, been studied in detail. The highest agoniatitid known is *Sellagoniatites unilobatus* (Hall) from Norton's Landing, Cayuga Lake. This genus occurs in the Canadian N. W. T. and in Europe is restricted to the upper Givetian (House and Pedder 1963, p. 512).

GENESEE GROUP

The earliest occurrence of Frasnian goniatites is in the Tully where *Pharciceras amplexum* occurs. Tornoceratids are common including forms comparable to *T. (T.) arcuatum* (House) from the Koenenites-bearing Squaw Bay Limestone of Michigan.

Typical lowest Frasnian ponticeratids occur in the Geneseo Shale, especially *P. perlatum* (Hall), and others, also *Epitornoceras peracutum* (Hall), the latter a rare genus also known in the European low Frasnian. From the Genundewa Limestone come the types of *Probeloceras genundewa, Manticoceras apprimatum, M. contractum, M. fasciculatum* and *M. styliophylum*. At Bethany Center *T. (T.) uniangulare compressum* is abundant. The record of a *Koenenites* from the West River Shale may be based on a *Manticoceras*.

SONYEA GROUP

From The Middlesex shale there are several records of noded goniatites probably referable to *Sandbergeroceras*. Goniatites are rare at this level and all so far found are crushed.

The fauna of the Cashaqua Shale is rich and varied. This is the source of *Probeloceras lutheri, P. (?) accelerans, Manticoceras sinuosum, M. tardum, M. neapolitanum* (formerly thought to be a clymenid), *Neomanticoceras naplesense, Eobeloceras* and probably also *Sandbergeroceras*. The fauna is at present being studied by Mr. W.T. Kirchgasser of Cornell. Particularly famous is the horizon of concretions with barytic replacements which lies some six feet below

the top of the formation in the gullies between Conesus and Honeoye Lake and especially in Shurtleff's Gully, 2.75 miles S. E. of Livonia.

WEST FALLS GROUP

There are singularly few records from the Rhinestreet Shale. At the top of the Unit *Manticoceras* and *Tornoceras* occur in concretionary horizons just below the 'Scraggy Bed' on Big Sister Creek and thereabouts. Large manticoceratids occur in giant concretions around the northern promontory of Grandview Bay. From the Angola Shale, however, many fine specimens are known. Recent work by the author has shown that Clarke's Big Sister Creek localities lie in the lower part of the Angola Shale where cyclothemic units of black shale, worm burrowed shale, grey shale and shale with concretions are repeated many times. A succession of the lowest six of these has been traced bed-for-bed as far east as the Warsaw Valley. The Gibson's Glen goniatite horizon is higher than these. The concretionary horizons almost invariably yield goniatites, but these become rarer to the east. Manticoceratids are chiefly of the *M. rhynchostoma* group and oxyconic groups: *Aulatornoceras* and *Tornoceras* are also common. Scattered records are known from the Gardeau, and farther east the records of *Beloceras* by Wells (1956) and of *Shindewolfoceras* are of interest in that they have not yet been found in supposed equivalent rock in the west.

JAVA GROUP

Goniatites are extremely rare in the Pipe Creek Shale, but from the Hanover Shale, especially from nodules in the lower fifteen feet, they are not uncommon. This is probably the source of the types of *M. cataphractum* and *Aulatornoceras rhysum*.

CANADAWAY GROUP

No goniatites are yet known from the Dunkirk Shale or South Wales Shale. From the Gowanda Shale at Corell's Point on Lake Erie shore 250 yards S.W. of the outlet of Walker Creek, 2.85 miles west of Brocton, Chatauqua Co. (House 1962) the *Cheiloceras* fauna is known. The same horizon, with *Cheiloceras amblylobum, Tornoceras (T.) concentricum* and *Aulatornoceras bicostatum* has now been located, in an identical concretionary layer, in Little Canadaway Creek below Lamberton, 2,200 feet N.W. of the junction of Lake Road and Rt. 20 at an altitude of about 630 feet, and again in Walnut Creek, below Forestville, about 200 yards upstream of the railroad culvert and at an altitude of about 847 feet. It is now clear that the horizon which yielded the types of *Aulatornoceras clarkei* is lower than this and occurs three feet above a 2 inch siltstone in the creek floor below the Sheridan Road bridge over Walnut Creek at Forestville. Both horizons are in the upper part of the Gowanda Shale.

GEOLOGY

OF

ERIE COUNTY

New York

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BUFFALO SOCIETY OF NATURAL SCIENCES

BULLETIN

Vol. 21, No. 3 Buffalo, 1963

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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

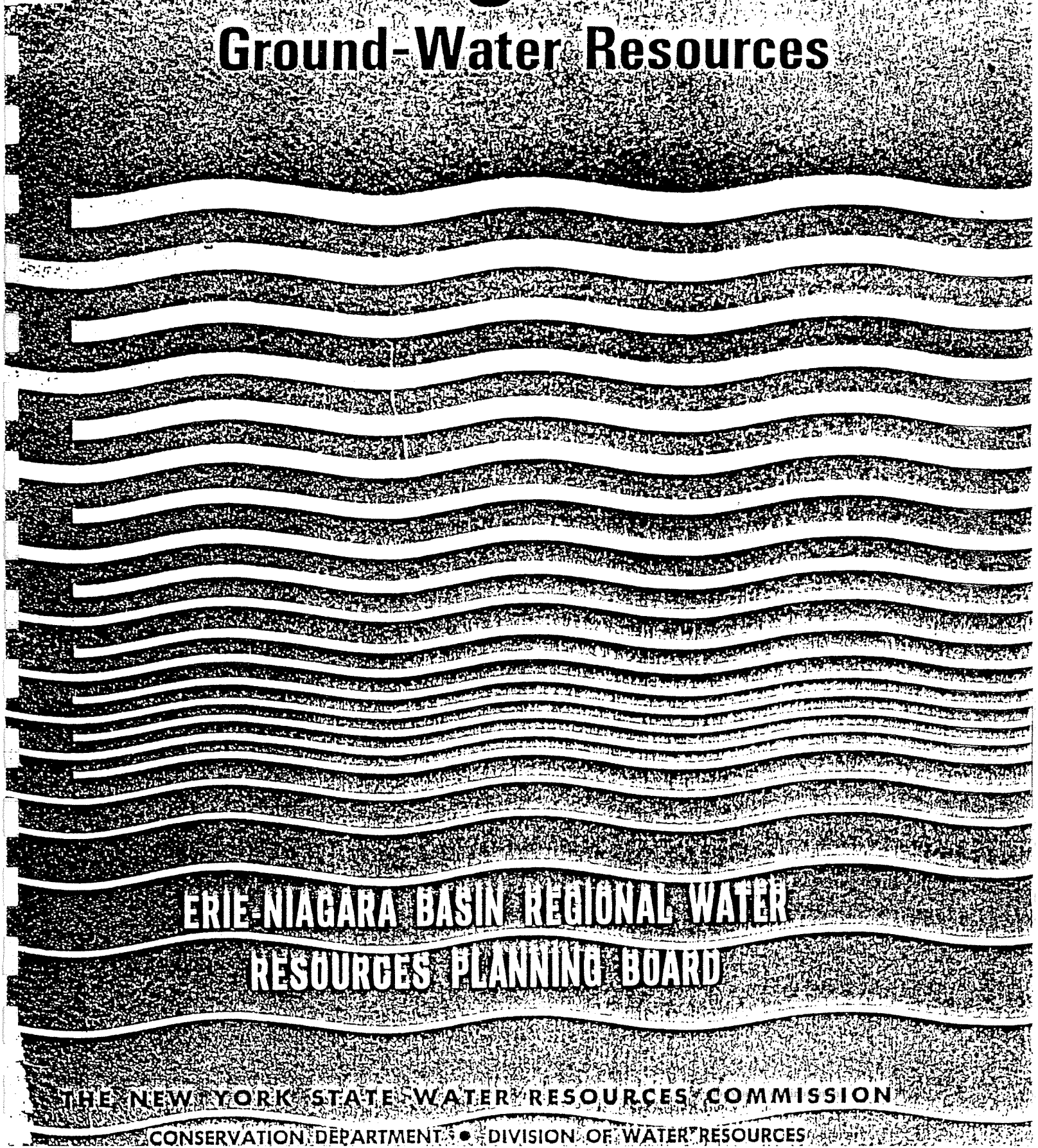
Kansan Glacial Stage

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

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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.

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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 acr
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	