3.

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

City of Lackawanna **Site No. 915094**
Lackawanna **Erie County**

DATE: April 1986

Prepared for:
New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Henry G. Williams, *Commissioner*

Division of Solid and Hazardous Waste
Norman H. Nosenchuck, P.E., *Director*

By:

Recra Environmental, Inc.

2/3325

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE I INVESTIGATIONS FOURTH ROUND

City of Lackawanna Landfill
Lackawanna, Erie County, New York
Site #915094

Prepared For:

Division of Solid and Hazardous Waste
New York State Department of Environmental Conservation
50 Wolf Road
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Prepared By:

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CITY OF LACKAWANNA LANDFILL
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1.0 EXECUTIVE SUMMARY

The City of Lackawanna Landfill is located on Abbott Road in Lackawanna, Erie County, New York (Figures 1 and 2). The landfill operated between 1961 and 1981. Wastes disposed of at the site included incinerator residue, digested sewage sludge and demolition debris. Approximately 1300 cubic yards of dry digested sewage sludge were deposited at the landfill in 1982.

In 1982, the NYSDEC conducted an investigation of the site and collected surface water and soil samples. Elevated levels of lead, zinc, chromium, copper and nickel were detected in the soils. Leachate breakouts were observed during the site inspection.

The Phase I Summary Report presented herein represents a compilation of available information regarding the City of Lackawanna Landfill. Information sources include NYSDEC Region 9, Erie County Department of Environmental and Planning, and various other sources. Recra Research, Inc. personnel conducted a site visit on January 24, 1986.

The intent of the Hazard Ranking System (HRS) is to provide a method by which uncontrolled hazardous waste sites may be systematically assessed as to the potential risk that a site may pose to human health and the environment. The HRS is designed to provide a numerical value through an assessment of technical data and information, and relating that information with respect to:

- migration of hazardous substances from the site (Sm)
- risk involved with direct contact (Sdc)

- the potential for fire and explosion (Sfe)

The risks involved with direct contact (Sdc) and the potential for fire and explosion (Sfe) are evaluated according to site specific information including toxicity of waste, quantity, site demographics, location with respect to sensitive habitats of wildlife, etc. Migration potential (Sm) is evaluated through the rating of factors associated with three routing modes: groundwater (Sgw), surface water (Ssw), and air (sa). The scored value for each route is composited to determine the risk to humans and/or the environment from the migration of hazardous substances from the site (Sm).

Based on the available information, the City of Lackawanna Landfill was scored according to the Mitre Corporation Hazard Ranking System (HRS), and the followings cores were obtained:

Sm = 6.53 (Sgw = 4.90; Ssw - 10.18; Sa = 0)

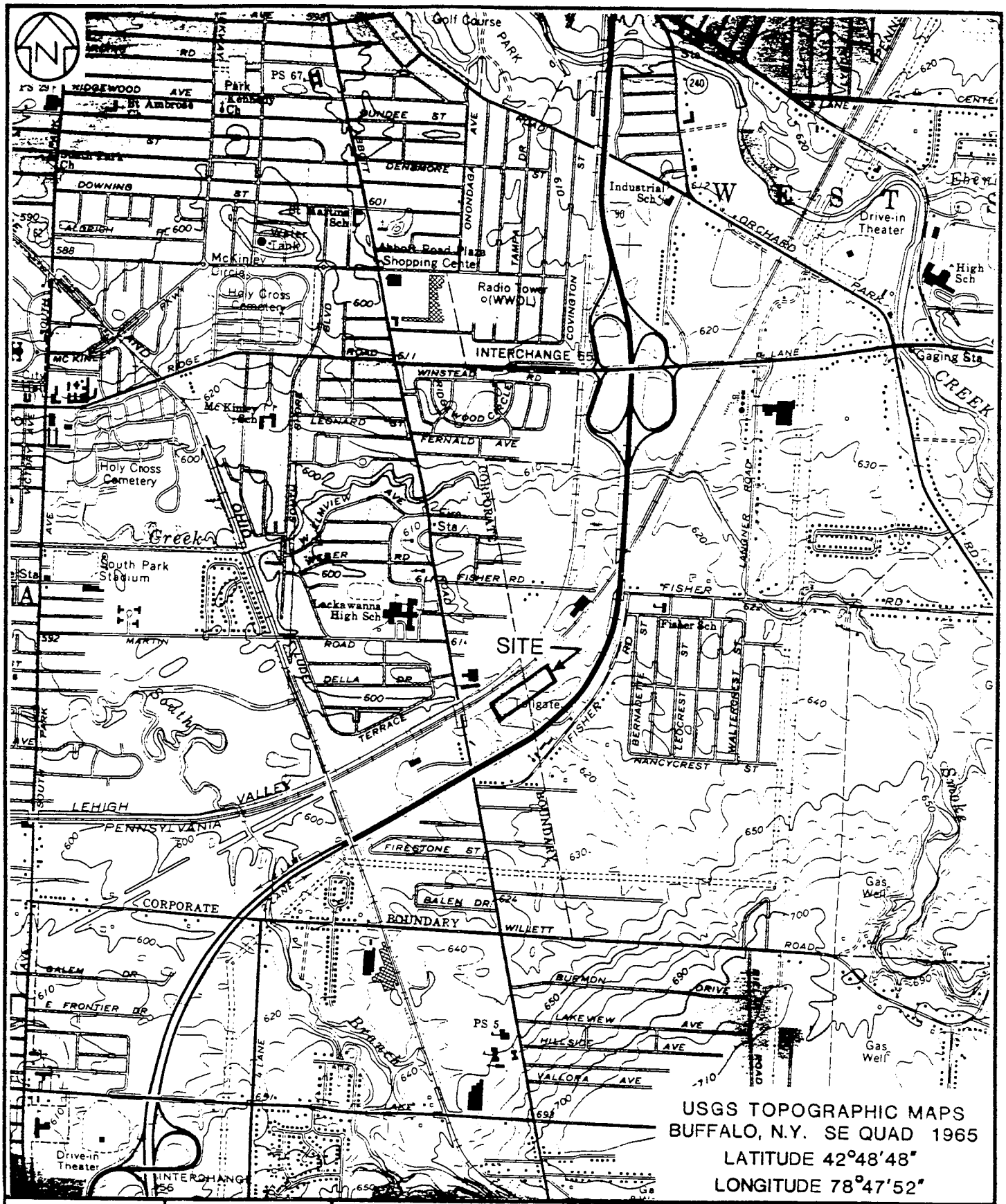
Sfe = N/A

Sdc = 62.5

A Phase II Investigation program has been proposed for the Lackawanna City Landfill which is designed to address the data inadequacies outlined in Section 6 and to expand the information base in order to obtain a final HRS score and facilitate the development of possible remedial alternatives.

The proposed Phase II work plan scope of work includes:

- o air monitoring
- o surface geophysics
- o test bore drilling and sampling
- o monitoring well installation
- o in-situ permeability testing
- o groundwater, surface water, and sediment sampling
- o surveying and mapping, and
- o chemical analytical testing.



USGS TOPOGRAPHIC MAPS
BUFFALO, N.Y. SE QUAD 1965
LATITUDE 42°48'48"
LONGITUDE 78°47'52"

RECRA RESEARCH INC.
BUFFALO, NEW YORK

Scale: 1:24000		
	By	Date
Dwn.	MJS	12/85
Ckd.		
Ap'vd.		
Rev.		

CITY OF LACKAWANNA
LANDFILL
LACKAWANNA, N.Y.
N.Y.S. SUPERFUND
PHASE I

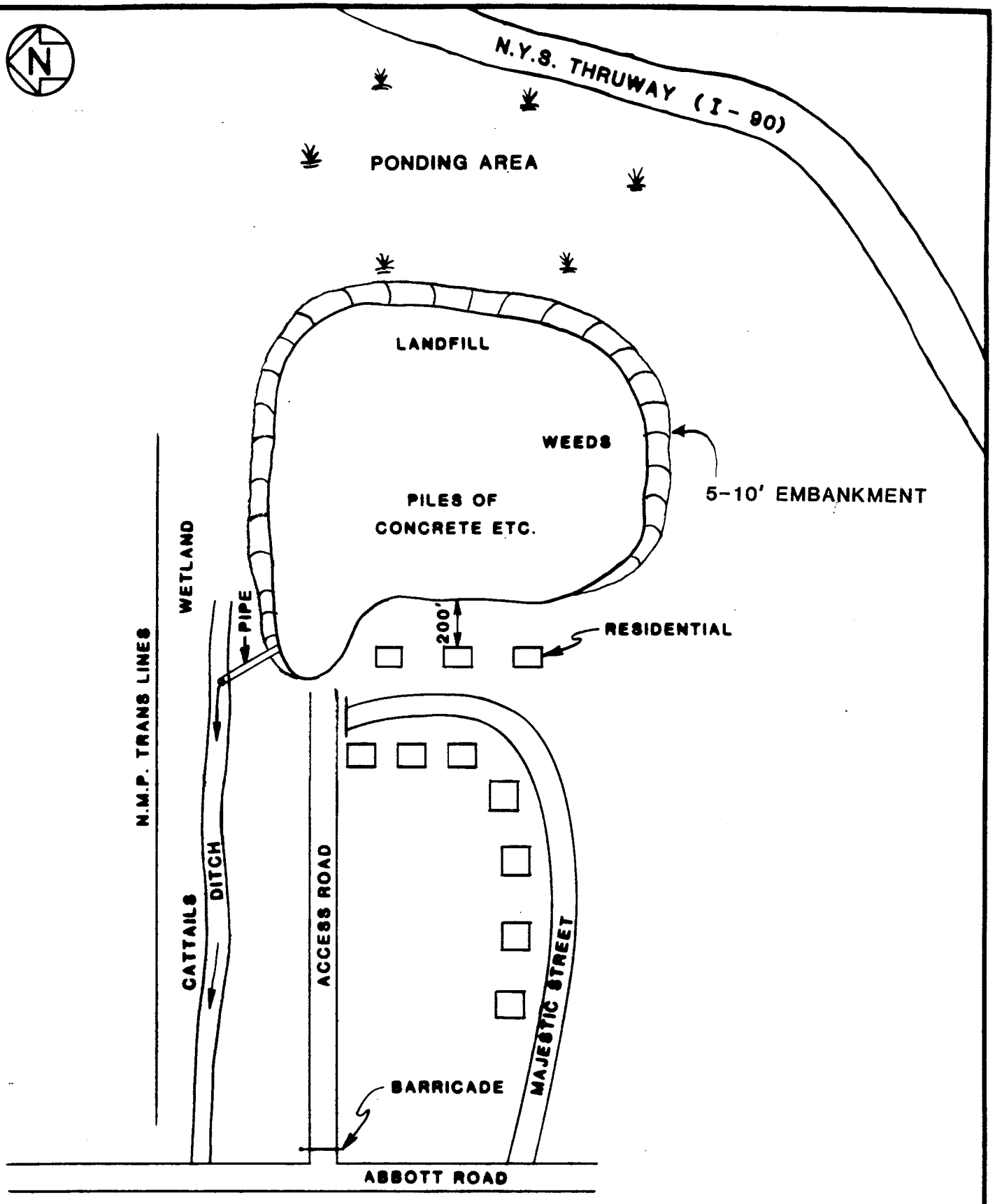
Project No. 5C280411

VICINITY MAP

A

FIGURE 1

BRUNING 61160-1



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: NTS	LACKAWANNA CITY LANDFILL LACKAWANNA, N.Y. N.Y.S. SUPERFUND PHASE I	SITE MAP
	By / Date		
	Dwn.		
	Ckd.		
	Ap'vd.		
	Rev.	Project No. 5C280411	A FIGURE 2

BRUNING 61160-1

2.0 PURPOSE

The objective of this Phase I investigation is to prepare a report for the City of Lackawanna Landfill that provides a history and preliminary assessment of the site based on a review of available data, assigns a numerical value to the site through the use of the Hazard Ranking System (HRS) and develops a proposed Phase II work plan designed to address the data inadequacies identified during report preparation. The purpose of developing a Phase I report in this manner is to provide an objective assessment of the site and the potential impact it may pose to human health and the environment.

The Phase I objective was met through the following activities:

- o site inspection.
- o collection and review of available data for report preparation and preliminary scoring of the HRS.
- o evaluation of data for completeness and identification of data inadequacies.
- o development of a proposed Phase II work plan to address the data inadequacies identified.

The site inspection is an integral part of the Phase I report preparation and is conducted to confirm actual site conditions. Typically, the site visit is designed to note the general topography and geology of the site, evidence of waste disposal, form of waste disposal, visible signs of contaminant release to the environment (e.g. leachate), access to the site,

and location, relative to water supplies, of population centers and sensitive environments such as wetlands.

3.0 SCOPE OF WORK

In order to permit an accurate preliminary assessment of the City of Lackawanna Landfill, Recra Research, Inc. (Recra) personnel conducted a search of literature and information regarding the site and site vicinity. This search included the review of general information available at area colleges and universities, such as, regional geography, geology and hydrogeology of the study area. The search also included review of state and county offices files as well as personal interviews with parties associated and/or familiar with the site and site vicinity.

Information received from NYSDEC Region 9 located at 600 Delaware Avenue, Buffalo, New York 14202 (telephone 716-847-4600) and the Erie County Department of Environment and Planning located at 95 Franklin Street, Buffalo, New York (telephone 716-846-8390), comprises the majority of the data base utilized in developing this report. Review of these office files provided information related to past operations and site conditions during past inspections.

Recra personnel contacted Mr. Nick Klaich, Sanitation Engineer City of Lackawanna, Ridge Road, Lackawanna, New York (telephone 716-827-6443) who granted permission for Recra to perform a site inspection. Subsequently, inspection of the site was conducted on January 24, 1986 in order to become familiar with the site and identify the present condition of the facility. The weather during the site inspection was partly cloudy and 28°F with no snow cover on the ground. No air monitoring was conducted at this time.

4.0 SITE ASSESSMENT

4.1 Site History

The City of Lackawanna Landfill is located on Abbott Road in Lackawanna, Erie County, New York (Figure 1). The 15 acre site was operated as a landfill between 1961 and 1981 (References 8 and 12). The landfill accepted incinerator residue, digested and dewatered sewage sludge, and construction and demolition debris (References 4, 12, and 15).

In 1980, the Lackawanna Sewage Treatment Plant was being renovated and a request was made to the NYSDEC to haul sewage sludge to the landfill (References 16 and 17). As of July 1980, the site contained an approximately 9+ acre freshwater wetland and pond (Reference 18). Provisions to ensure adequate separation of waste material from surface water necessitated a wetland boundaries determination (Reference 13 and 19). A five foot high earthen berm enclosing about one acre was constructed within the landfill specifically for the disposal of the sewage sludge (Reference 20 and 21). Since the site was considered a good retention basin for runoff from the Thruway and surrounding area, the berm was designed to reduce the flow of storm runoff from the landfilled sludge to the wetland (Reference 18 and 20). Approximately 1300 cubic yards of sludge were deposited at the landfill in 1982 (Reference 22).

In 1981, the NYSDEC performed a site inspection to determine if the site was in compliance with Part 360 of the Environmental Conservation Law (Reference 23). Several violations were noted and included inadequate

cover, improper grades and slopes, improper vegetation cover, and poor access control.

On January 24, 1986, Recra personnel inspected the site. Access to the site from Abbott Road is restricted by a locked gate but entry to the site via Majestic Street is unimpeded (Figure 2). No leachate seeps were observed during the inspection.

4.2 Site Area Surface Features

4.2.1 Topography and Drainage

Topography in the area surrounding the site is generally flat (Reference 27). The immediate site area is approximately 5 to 10 feet above the original grade with fairly steep side slopes along the north, east and south perimeter of the landfill (Figure 2).

Run-off from the site area is predominantly controlled by a drainage ditch along the northern boundary of the site which discharges through a storm sewer to Smoke Creek (Figure 2 and Reference 25). The site contains a large area between the landfill and the NYS thruway to the east that tends to pond (Figure 2 and Reference 13). In 1973, the City of Lackawanna addressed the ponding problem by installing storm sewer pipe from the origin of the water at the Thruway embankment to the drainage ditch on the opposite side of the landfill (Reference 25). During the 1986 site inspection, Recra personnel observed water flowing from the pipe into the drainage ditch (Figure 2). A pond was not observed at this time.

The entire area including the site is drained by Smoke Creek, South Branch and its associated tributaries (Reference 27).

4.2.2 Environmental Setting

The City of Lackawanna landfill is located in a residential area on Abbott Road in Lackawanna, New York (Reference 27). The nearest residents are located within a few hundred feet of the site (Figure 2). Although a locked gate prevents vehicular entry to the site from Abbott Road, entry may be readily gained from Majestic Street (Figure 2). The site is not fenced along its perimeter.

All residents within the site vicinity are served by municipal water. The water intakes are located approximately 6.0 miles northwest of the site in Lake Erie (Reference 10).

The landfill is not located within either a 100-year or 500-year flood zone (Reference 14). There are no critical habitats of endangered species or protected freshwater wetlands within one mile of the site (Reference 9).

The nearest downslope surface waters are Smoke Creek and South Branch, each located approximately 0.8 mile north and southeast, respectively, from the site (Reference 27).

Smoke Creek is a "Class D" water resource which is suitable for secondary contact recreation (Reference 6 and 7). South Branch is a "Class C" water resource which is suitable for fishing and all other uses except as a source of water for drinking, culinary or food processing purposes and primary contact recreation (References 6 and 7).

4.3 Site Hydrogeology

4.3.1 Geology

Bedrock underlying the site is the Skaneateles Formation of the middle Devonian Hamilton Group (Reference 24). The formation consists of two members. The lower Stafford Limestone member is a gray limestone approximately 10 feet thick that exhibits massive to shaly bedding. The upper Levanna Shale member is olive gray to dark gray and black, fissile shale with calcareous beds and some pyritiferous concretions. Total thickness of the unit is 60 to 90 feet. Regional dip of the bedrock is generally southward at approximately 40 feet per mile.

4.3.2 Soils

The USDA Soil Conservation Service classifies the Lackawanna Landfill overburden material as the Niagara Unit (Reference 3). This unit is characterized as nearly level, deep, somewhat poorly drained silty soils. There is a seasonal high water table in the upper part of the subsoil during excessive wet periods. Permeability of these soils is considered moderately slow.

4.3.3 Groundwater

Generally, the water table lies within the glacial deposits above the shale bedrock (Reference 1). A seasonal high water table occurs in the upper part of the subsoil during excessive wet periods (Reference 3).

The groundwater elevation in the vicinity of the landfill was reported to be approximately 591.0 feet above sea level (Reference 25). The low

ground elevation of the landfill is 608.0 feet above sea level. A six foot deep test pit dug at this site on July 9, 1980 did not indicate the presence of groundwater (Reference 20).

There are two shale bedrock wells located within three miles of the site that are used for irrigation (lawn sprinkling only) and industrial purposes (Reference 5). Groundwater occurrence within the bedrock beneath the site is unknown. However, based on the nature of the shale bedrock, groundwater would be expected to move along the joints, bedding planes and fracture zones (References 1 and 5).

4.4 Previous Sampling and Analysis

4.4.1 Groundwater Quality Data

There is no groundwater quality data available for this site.

4.4.2 Surface Water Quality Data

Surface water samples collected by the NYSDEC in 1982 show low concentrations for heavy metals, total organic carbon, and total halogenated organics (Reference 26).

4.4.3 Air Quality Data

There is no air quality data available for the site.

5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

5.1 Narrative

The City of Lackawanna Landfill is located on Abbott Road in Lackawanna, Erie County, New York (Reference 27). The site is approximately 15 acres in size and is owned by the City of Lackawanna.

Between 1961 and 1981 the wastes disposed of in the landfill included incinerator residue, digested sewage sludge and demolition debris (References 4, 8, 12 and 15). Approximately 1300 cubic yards of digested sewage sludge were deposited at the landfill in 1982 (Reference 22).

In 1981, the NYSDEC conducted a site inspection and found several Part 360 violations that included inadequate cover, improper grades and slopes, improper vegetation cover and inadequate access control (Reference 23). On January 24, 1986, Recra personnel inspected the site and found no observable adverse environmental conditions.

The site is located within a few hundred feet of a residential area (Reference 27). The population within three miles of the site is greater than 20,000 (Reference 11). All residents within three miles of the site are serviced by municipal water (Reference 10). There are no barriers to prevent entry to the site (Figure 2).

The water table is reported to be approximately 17 feet below the lowest ground elevation of the landfill (Reference 25). The site is located approximately 0.8 mile south of Smoke Creek and 0.8 northeast of South Branch (Reference 27). There are no protected wetlands or sensitive

environments within one mile of the site. The site is not located within a 100 year floodplain (References 9 and 14).

5.2 HRS WORKSHEET

Facility name: City of Lackawanna Landfill

Location: Abbott Road, Lackawanna, New York

EPA Region: 2

Person(s) in charge of the facility: Nick Klaich, Sanitation Engineer

Tony Collareno, City Engineer

Name of Reviewer: Recra Research, Inc. Date: 2/25/86

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 disposal site is 15 acres in size and is located on Abbott Road, Lackawanna. The site has been used for the disposal of incinerator residue, digested sewage sludge and roadbed materials. Asphalt, concrete and soil were used as fill materials. Elevated heavy metals (Pb, Zn, Cr, Cu, Ni) found in site soils by NYSDEC on 3/31/82.

Scores: $S_M = 6.53$ ($S_{gw} = 4.90$ $S_{sw} = 10.18$ $S_a = 0$)

S_{FE} = N/A

$S_{DC} = 62.5$

FIGURE 1
HRS COVER SHEET

Ground 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	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	1	3	
Physical State	0 1 2 (3)	1	3	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	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
[5] Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
[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]			2808	57,330	
[7] Divide line [6] by 57,330 and multiply by 100		S_{gw} = 4.9			

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	3	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	3	3	
Total Route Characteristics Score			14	15	
3 Containment	0 1 2 (3)	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	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			6	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			6552	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 10.18			

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	0	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		17	20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		24	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})	4.90	24.01
Surface Water Route Score (S_{sw})	10.18	103.63
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		127.64
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		11.30
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		6.53

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	1	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	(0) 3	1	0	3	
Ignitability	(0) 1 2 3	1	0	3	
Reactivity	(0) 1 2 3	1	0	3	
Incompatibility	(0) 1 2 3	1	0	3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			8	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 (3) 4 5	1	3	5	
Distance to Nearest Building	0 (1) 2 3	1	1	3	
Distance to Sensitive Environment	(0) 1 2 3	1	0	3	
Land Use	0 1 2 (3)	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Buildings Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Total Targets Score			17	24	
4 Multiply 1 x 2 x 3			136	1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = N/A		

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	20	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			20	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]			13500	21,600	
[7] Divide line [6] by 21,600 and multiply by 100		S_{DC} = 62.5			

FIGURE 12
DIRECT CONTACT WORK SHEET

5.3 HRS DOCUMENTATION RECORDS

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: City of Lackawanna Landfill

LOCATION: Abbott Road, Lackawanna, NY 14218

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No analytical data

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Groundwater occurs in both the overburden (glaciolacustrine deposits) and the bedrock (Shale). (Ref. 1)

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

Approximately 17 feet below ground surface (Ref. 25)

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

Unknown

Net Precipitation

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

36 inches (Ref. 2, Fig. 5)

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

27 inches (Ref. 2, Fig. 4)

Net precipitation (subtract the above figures):

9 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Niagara - somewhat poorly drained silty soils (Ref. 3)

Permeability associated with soil type:

Moderately slow (Ref. 3)

$<10^{-5}$ $\geq 10^{-7}$ cm/sec (Ref. 2, Table 2)

Physical State

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

° fine material - incinerator ash and residue
° sludge - dewatered and digested sewage

(Ref. 4, 8, 12)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill is unlined. Landfill surface encourages ponding.

Method with highest score:

No liner

(Ref. 2, Table 3)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Heavy metals - Pb, Zn, Cr, Cu, Hg (Ref. 26)

Compound with highest score:

Pb, Cr, Cu, Hg

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):

81,000 cubic yards (Ref. 18)

Basis of estimating and/or computing waste quantity:

Incinerator ash:

$$\frac{250 \text{ days}}{\text{year}} \times \frac{16 \text{ cubic yards}}{\text{day}} \times 20 \text{ years} = 80{,}000 \text{ cubic yards}$$ (Ref. 25)

Sewage treatment sludge: 1,074 cubic yards (Ref. 20)

5 TARGETS

Ground Water Use

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

Industrial and irrigation (lawn sprinkling only) (Ref. 5)

Distance to Nearest Well

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

Industrial well located west of site (Ref. 5)

Distance to above well or building:

Approximately 2.5 miles (Ref. 5)

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

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

None

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

N/A

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

None

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

None

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

<1% (Ref. 27)

Name/description of nearest downslope surface water:

A ditch flowing adjacent to the landfill transports site run-off through a storm sewer to Smokes Creek, 0.8 miles away. This drainage ditch is judged to be perennial for HRS scoring purposes.

(Ref. 25 (pg. 2), 26 and 27)

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

<1% (Ref. 27)

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

Partially; the site contains a freshwater wetland and ponded area (Fig. 2; Ref. 13)

Is the facility completely surrounded by areas of higher elevation?

No (Ref. 27)

1-Year 24-Hour Rainfall in Inches

2.1 inches (Ref. 2, Fig. 8)

Distance to Nearest Downslope Surface Water

0.0 miles; perennial drainage ditch is adjacent to landfill and receives drainage from landfill. (Ref. 15 and 25)

Physical State of Waste

fine material - incinerator ash and residue
sludge - dewatered and digested sewage (Ref. 4, 8, 12)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill not adequately covered
and no containment system (Ref. 23)

Method with highest score:

Landfill not adequately covered
and no containment system (Ref. 2, Table 9)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Heavy metals - Pb, Zn, Cr. Cu, Hg

(Ref. 26, pg. 2)

Compound with highest score:

Pb, Cr, Cu, Hg

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):

81,000 cubic yards (Ref. 18)

Basis of estimating and/or computing waste quantity:

Incinerator ash:

$$\frac{250 \text{ days}}{\text{year}} \times \frac{16 \text{ cubic yards}}{\text{day}} \times 20 \text{ years} = 80{,}000 \text{ cubic yards}$$ (Ref. 25)

Sewage treatment sludge: 1,074 cubic yards (Ref. 20)

* * *

5 TARGETS

Surface Water Use

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

Smoke Creek is a Class "D" water resource which is suitable for secondary contact recreation. South Branch is a Class "C" water resource which is suitable for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation. Useage of both water resources is limited to casual recreation. (Ref. 6 and 7)

Is there tidal influence?

No

Distance to a Sensitive Environment

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

N/A

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

No NYS regulated wetlands within one mile of the site (Ref. 9)

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

None (Ref. 9)

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:

No intakes within three miles of the site (Ref. 10)

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

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

Lake Erie

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

Greater than 3 miles

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No analytical data

Date and location of detection of contaminants

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Unknown

Most incompatible pair of compounds:

Unknown

Toxicity

Most toxic compound:

Heavy metals - Pb, Cr, Cu, Hg (Ref. 26, pg. 2)

Hazardous Waste Quantity

Total quantity of hazardous waste:

81,000 cubic yards (Ref. 18)

Basis of estimating and/or computing waste quantity:

Incinerator ash:

$$\frac{250 \text{ days}}{\text{year}} \times \frac{16 \text{ cubic yards}}{\text{day}} \times 20 \text{ years} = 80{,}000 \text{ cubic yards} \quad \text{(Ref. 25)}$$

Sewage treatment sludge: 1,074 cubic yards (Ref. 20)

* * *

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

~400,000 (Ref. 11)

Distance to a Sensitive Environment

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

N/A

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

N/A (Ref. 9)

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

N/A (Ref. 9)

Land Use

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

0.5 miles (Ref. 27)

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

None in area

Distance to residential area, if 2 miles or less:

0.1 mile (Ref. 27)

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

N/A

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

N/A

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

No

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

N/A

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

81,000 cubic yards (Ref. 18)

Basis of estimating and/or computing waste quantity:

Incinerator ash:

$$\frac{250 \text{ days}}{\text{year}} \times \frac{16 \text{ cubic yards}}{\text{day}} \times 20 \text{ years} = 80{,}000 \text{ cubic yards} \quad \text{(Ref. 25)}$$

Sewage treatment sludge: 1,074 cubic yards (Ref. 20)

* * *

3 TARGETS

Distance to Nearest Population

0.1 mile (Ref. 27)

Distance to Nearest Building

0.1 mile (Ref. 27)

Distance to Sensitive Environment

Distance to wetlands:

N/A (Ref. 9)

Distance to critical habitat:

N/A (Ref. 9)

Land Use

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

0.5 miles (Ref. 27)

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

N/A (Ref. 27)

Distance to residential area, if 2 miles or less:

0.1 mile (Ref. 27)

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

N/A

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

N/A

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

No

Population Within 2-Mile Radius

Greater than 10,000 (Ref. 11 and 27)

Buildings Within 2-Mile Radius

Greater than 2,600 (Ref. 27)

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

N/A

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Locked gate off Abbott Road; no barrier to entry from Majestic Street (Ref. 15)

* * *

3 CONTAINMENT

Type of containment, if applicable:

Portions of site tend to pond following wet weather (Ref. 13, 15, 25, 27)

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Heavy metals - Pb, Zn, Cr, Cu, Hg (Ref. 26, pg. 2)

Compound with highest score:

Pb, Cr, Cu, Hg

* * *

5 TARGETS

Population within one-mile radius

Greater than 10,000 (Ref. 11 and 27)

Distance to critical habitat (of endangered species)

Greater than 1 mile (Ref. 9)

5.4 EPA PRELIMINARY ASSESSMENT
(Form 2070-12)

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
CITY OF LACKAWANNA LANDFILL	ABBOTT ROAD

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
LACKAWANNA	NY	14218	ERIE		

09 COORDINATES LATITUDE: 42° 48' 48" | LONGITUDE: 078° 47' 52"

10 DIRECTIONS TO SITE (Starting from nearest public road)
From NY thruway, get off at Exit 55, take Ridge Road west, toward Lackawanna. Proceed about 0.5 mile for Abbott Road. Follow Abbott for a mile until railroad tracks. Site is just past railroad tracts on left.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
City of Lackawanna	City Hall, Ridge Road

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Lackawanna	NY	14218	(716) 827-6452

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
same as owner	

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

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

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

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 3 31 82 (MONTH DAY YEAR)

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

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

03 YEARS OF OPERATION
1961 (BEGINNING YEAR) | 1981 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Incinerator ash and residue, digested sewage sludge and roadbed materials were disposed at this landfill.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
UnKnown

V. PRIORITY ASSESSMENT

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

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
PEDRO FIERRO	RECRA ENVIRONMENT, Inc	(716) 833-8203

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Kermit Studley		RECRA	(716) 833-8203	2 24 86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915094

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

TONS UnKnown

CUBIC YARDS _____

NO OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	UnKnown		
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)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	CHROMIUM			29 - 44	ppm
	COPPER			15 - 66	ppm
	LEAD			9 - 250	ppm
	NICKEL			44 - 24	ppm
	ZINC			100 - 730	ppm

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

NYSDEC SITE INVESTIGATION MARCH 31, 1982

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915094

II. HAZARDOUS CONDITIONS AND INCIDENTS

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

UNKNOWN

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

NONE OBSERVED FROM 3/31/82 NYSDEC TESTING

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

UnKnown

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

UNKNOWN

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

Site is not fenced along perimeter, therefore, a potential for direct contact exists.

01 ☒ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 3/31/82) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: UNKNOWN (Acres) 04 NARRATIVE DESCRIPTION

NYSDEC FOUND ELEVATED LEVELS OF Pb, Zn, Cr, Cu and Ni IN SITE SOILS

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

No potential exists

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

UnKnown

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

UnKnown

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915094

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

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

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

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
Landfill is unlined.

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

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

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

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS
The landfill was used by the City for the disposal of incinerator residue, digested sewage sludge and roadbed material. Asphalt, concrete and soil were reused for fill material.

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)
NYSDEC SITE INVESTIGATION, MARCH 31, 1982

5.5 EPA SITE INSPECTION REPORT
(Form 2070-13)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915094

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
CITY OF LACKAWANNA LANDFILL	ABBOTT ROAD

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
LACKAWANNA	NY	14218	ERIE		

09 COORDINATES: LATITUDE 42° 48' 48._ | LONGITUDE 078° 47' 52._

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

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
1 24 86 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1961 (BEGINNING YEAR) 1981 (ENDING YEAR) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR Recra Research, Inc (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Andre LaPres	Staff Geologist	Recra	(716) 833-8203
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Sheldon S. Nozik	Environmental Scientist	Recra	(716) 833-8203
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Nick Klaich	Sanitation Inspector	City of Lackawana Lackawana, N.Y.	(716) 827-6443
Anthony Collarena	City Engineer	City of Lackawana Lackawana, N.Y.	(716) 827-6452
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	11:00 AM	Partly Cloudy, 28°F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
PEDRO FIERRO	Recra ENVIRONMENTAL	(716) 833-8203

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Kermit Stidley		Recra	(716) 833-8203	2 24 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915094

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

TONS: unknown
CUBIC YARDS: _____
NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	unknown		
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)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	CHROMIUM			29-44	ppm
	COPPER			15-66	ppm
	LEAD			9-250	ppm
	NICKEL			4.4-24	ppm
	ZINC			100-730	ppm

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

NYSDEC SITE INVESTIGATION, MARCH 31, 1982

EPA FORM 2070-13(7-81)

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
A potential for groundwater contamination exists from contaminated site soils

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: UNKNOWN
04 NARRATIVE DESCRIPTION
A potential for surface water contamination exists from contaminated site soils

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

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

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: UNKNOWN
04 NARRATIVE DESCRIPTION
Site is not fenced along perimeter, therefore, a potential for direct contact exists.

01 ☐ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 3/21/82) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: UNKNOWN (Acres)
04 NARRATIVE DESCRIPTION
ELEVATED LEVELS OF Pb, Zn, Cr, Cu and Ni FOUND IN SITE SOILS

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION
No potential exists

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

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

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

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

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

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums)
02 ☒ OBSERVED (DATE: 3/31/86) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION
Landfill is unlined. Leachate breakouts observed.

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

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

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

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
None

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS
The landfill was used by the City for the disposal of incinerator residue, digested sludge and roadbed material. Asphalt, concrete and soil was used for fill materials.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
NYSDEC SITE INVESTIGATION. MARCH 31, 1986.

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915094

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Enter all applicable)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
A. NPDES				
B. UIC				
C. AIR				
D. RCRA				
E. RCRA INTERIM STATUS				
F. SPCC PLAN				
X G. STATE	2204			NY solid waste disposal permit
H. LOCAL				
I. OTHER				
J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Enter all applicable)	02 AMOUNT	03 UNIT OF MEASURE
A. SURFACE IMPOUNDMENT		
B. PILES		
C. DRUMS, ABOVE GROUND		
D. TANK, ABOVE GROUND		
E. TANK, BELOW GROUND		
X F. LANDFILL	Unknown	
G. LANDFARM		
H. OPEN DUMP		
I. OTHER		

04 TREATMENT (Enter all applicable)
none
- A. INCINERATION
- B. UNDERGROUND INJECTION
- C. CHEMICAL/PHYSICAL
- D. BIOLOGICAL
- E. WASTE OIL PROCESSING
- F. SOLVENT RECOVERY
- G. OTHER RECYCLING/RECOVERY
- H. OTHER

05 OTHER
- A. BUILDINGS ON SITE

none

06 AREA OF SITE
15 Acres

07 COMMENTS
Site is grassed. Some areas containing roadbed material were observed. No leachate was observed on site.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES
A. ADEQUATE, SECURE | B. MODERATE | X C. INADEQUATE, POOR | D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.
Landfill is unlined.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE X YES NO

02 COMMENTS
No barriers to entry

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Erie Co. Department of Environment and Planning files
Site investigation, Recra Research, Inc, 11/24/86

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

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

02 STATUS

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

03 DISTANCE TO SITE
A. 6.0 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER: 0

03 DISTANCE TO NEAREST DRINKING WATER WELL: N/A (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
Unknown (ft)	possibly north, toward Smoke Creek	N/A (ft)	N/A (gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
Private wells do exist, however, these wells do not supply potable water. All potable water is derived from the surface waters of Lake Erie.

10 RECHARGE AREA		11 DISCHARGE AREA	
X YES ☐ NO	COMMENTS: A wetland adjacent to the site drains into a ditch which transports water into storm sewer and eventually into Smoke Creek	☐ YES X NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Smoke Creek	☐	0.8 (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. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. 220,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 0.05 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
> 500	0.05 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
Site is located in an urban area consisting mostly of single family homes. A high school and various shops are located in a shopping district approximately one half mile from site.

EPA FORM 2070-13 (7-81)

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

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

02 PERMEABILITY OF BEDROCK (Check one)

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

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
UnKnown (ft)	UnKnown (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)	1.0 %	SW	1.0 %

09 FLOOD POTENTIAL
SITE IS IN N/A YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE: N/A
A. _____ (mi)
OTHER
B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
N/A _____ (mi)
ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 0.5 (mi)	B. 0.05 (mi)	C. N/A (mi)	D. N/A (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is located on a rectangular tract of land. It is surrounded by the NYS Thruway to the south and east, the Lehigh Valley railroad to the north and Abbott Road to the west. A series of power lines run parallel to the railroad tracks. The site is vegetated. Surface runoff associated with the thruway is drained ~~northward~~ through a sewer pipe into a drainage ditch which then transports the water ~~westward~~ into another existing storm sewer and eventually into Smoke Creek. The topography surrounding the site is relatively flat.

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

Uncontrolled Hazardous Waste Site Ranking System, Users Manual, Draft, 1982; NYS Atlas of Community Water System Sources, 1982, NYS Dept. of Health; Flood Insurance Rate Map, City of Lackawanna, Panel 2 of 2, 360247-0002 B, 7/2/80; LaSala, 1968, Groundwater of the Erie-Niagara Basin, N.Y., Basin Planning Report, ENB-3; 1980 Census of Population, N.Y. US Dept of Commerce; G.R. Batheller - NYSDEC letter to S.S. Nazik, Recra Research, Inc., 12/13/85; USGS Topographic Map, Buffalo SE, N.Y., 1965.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915094

II. SAMPLES TAKEN

No samples taken

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
	None taken

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____
(Name of organization or individual)

03 MAPS
☐ YES
☒ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None

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

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915094

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
City of Lackawanna	

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

05 CITY	06 STATE	07 ZIP CODE
Lackawanna	NY	14218

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER
N/A	

10 STREET ADDRESS (P O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

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

01 NAME	02 D+B NUMBER
City of Lackawanna	

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

05 CITY	06 STATE	07 ZIP CODE
Lackawanna	N.Y.	14218

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

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

01 NAME	02 D+B NUMBER
No realty owner	

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

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

Erie Co. Department of Environment and Planning files

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
N.Y.	915094

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
N/A Site is inactive	

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER
N/A	

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

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

01 NAME	02 D+B NUMBER
None	

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER
N/A	

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

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

INFORMATION AVAILABLE FROM

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER

03 STREET ADDRESS	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
City of Lackawanna			

03 STREET ADDRESS	04 SIC CODE	03 STREET ADDRESS	04 SIC CODE
City Hall, Ridge Road			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Lackawana	NY	14218			

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

03 STREET ADDRESS	04 SIC CODE	03 STREET ADDRESS	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
City of Lackawanna			

03 STREET ADDRESS	04 SIC CODE	03 STREET ADDRESS	04 SIC CODE
Sanitation Bureau, So. Park Ave & Reddon			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Lackawanna	NY	14218			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Niagara Sanitation, Inc.			

03 STREET ADDRESS	04 SIC CODE	03 STREET ADDRESS	04 SIC CODE
262 Pullman Ave			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Kenmore	NY	14217			

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

Erie Co. Department of Environment and Planning files

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II. PAST RESPONSE ACTIVITIES

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

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

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

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

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

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

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

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

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

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

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

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915094

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

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

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

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

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: N/A

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: none

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

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915094

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

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

6.0 ADEQUACY OF AVAILABLE DATA

Based on the available information, the City of Lackawanna Landfill was found to have a migration potential (Sm) score of 6.53. This Sm score was based on the information acquired through a review of available literature. During the completion of the HRS, several data inadequacies were encountered. These inadequacies include:

- amount of waste disposed between 1961 and 1981.
- subsurface information including depth to the water table and/or aquifers of concern, permeability, groundwater quality and groundwater flow direction.
- air quality information.

7.0 PROPOSED PHASE II WORK PLAN

This section outlines the recommended procedures and technical means by which a Phase II investigation may be conducted. Any work plan which is submitted to NYSDEC for conducting a Phase II type study must follow the guidelines established by NYSDEC and subsequently be approved by NYSDEC.

7.1 Project Objectives

The purpose and objective of this proposed Phase II investigation is to obtain a final HRS score for the site as defined under the auspices of the New York State Superfund program, and assess concerns regarding past disposal practices. The site investigation proposed herein is designed to generate data for the above identified tasks. The scope of this investigation may include:

- o preliminary sampling
- o air monitoring
- o geophysical survey
- o test bore drilling
- o monitoring well installation
- o in-situ permeability testing
- o groundwater, leachate stream, surface water, soil and sediment sampling
- o surveying and mapping
- o chemical analytical testing
- o groundwater well survey

- o data analysis and reporting
- o scoring the site under the Hazard Ranking System
- o reporting.

7.2 Scope of Work

7.2.1 Preliminary Sampling

Prior to the initiation of a Phase II study including monitoring well installation and groundwater testing, a preliminary sampling program should be implemented that would provide an indication of the potential threat the site may pose to the environment. Information from the preliminary study could be used to assess the usefulness of conducting additional study at the site.

Surface water and sediment samples should be collected from the ponded area west of the site and from the drainage ditch running parallel to the northern boundary of the site (Figure 3). Samples should be collected in the ditch both upstream and downstream of the drainage pipe outlet extending from the landfill. In addition, a water sample should be collected from the drainage pipe. Any leachate observed seeping from the landfill should also be sampled.

The samples should be analyzed for priority pollutant metals and organics (CLP) and PCBs.

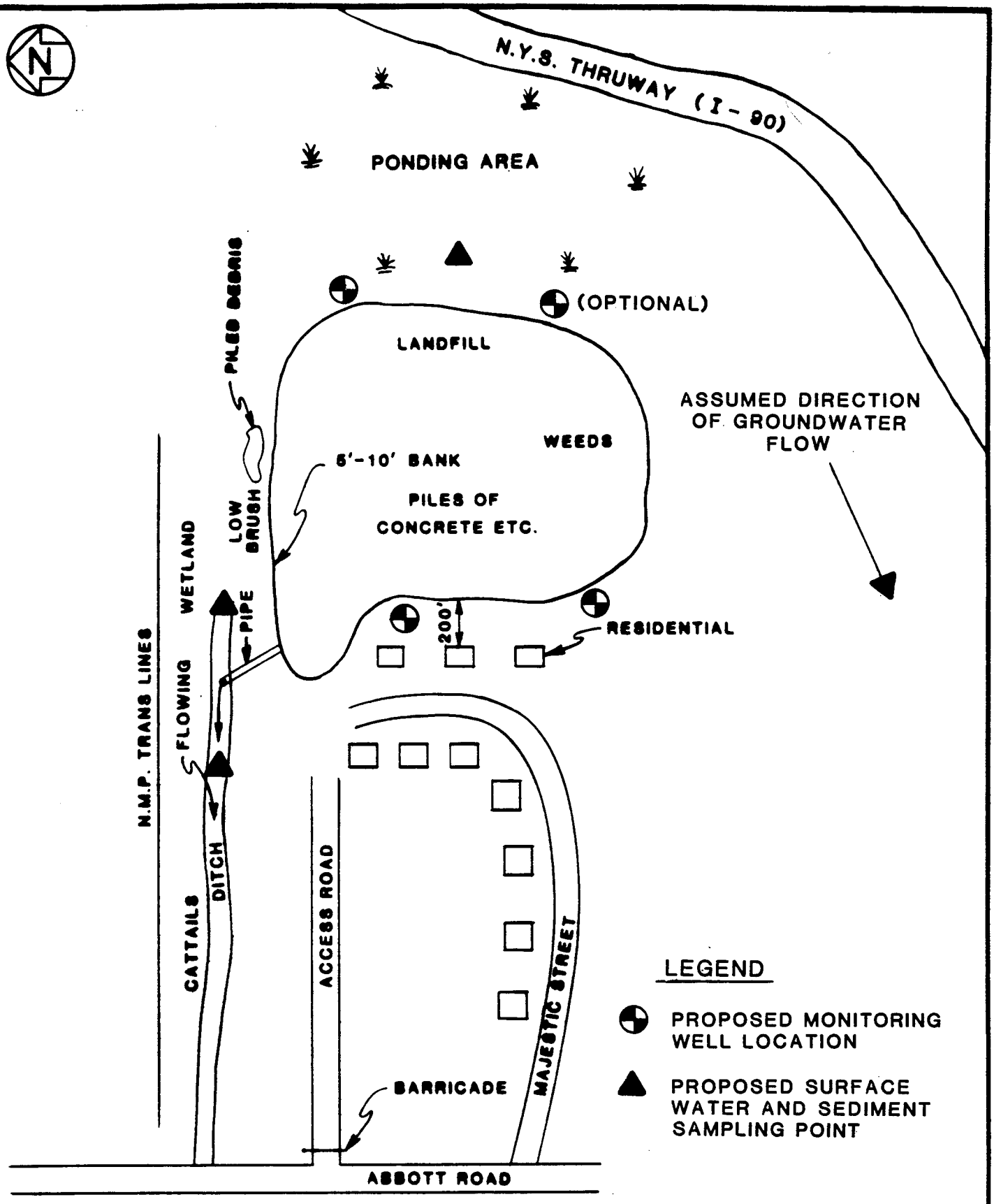
7.2.2 Geophysical Survey

A geophysical survey may be conducted over the site where access and topography permit to define the vertical and horizontal extent of the

fill material and establish the final locations for monitoring well installations. The geophysical survey will be conducted using Terrain Conductivity.

Terrain conductivity readings will be obtained using a Geonics Model EM 31 terrain conductivity meter. A 50 foot maximum grid system will be established. The conductivity readings may serve to detect clusters of drums, tanks, cables, lateral fill variations, and contaminated groundwater plume geometry, if present. The grid network is designed to obtain maximum efficiency from the survey.

All geophysical data and interpretations will be used to finalize the locations of proposed borings and monitoring wells. No borings or monitoring wells will be placed in the field until the final locations have been submitted to NYSDEC for final decision. However, based upon current information, it is envisioned that one monitoring well will be placed upgradient of the site, and two along the downgradient area of the site, with a fourth well contingent depending on conditions encountered during installation of previous wells (Figure 3).



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: NTS	LACKAWANNA CITY LANDFILL LACKAWANNA, N.Y. N.Y.S. SUPERFUND PHASE I	PROPOSED SITE PHASE II WORKPLAN MAP	
	By / Date			
	Dwn.			
	Ckd.			
	Ap'vd.			
	Rev.	Project No. 5C280411	A	FIGURE 3

BRUNING 61160-1

7.2.3 Test Borings

Three test borings will be advanced at the site (Figure 3). Based on a field review of the site, tentative locations for the borings will be selected by NYSDEC. Recommendations for the final locations will be based on the results of the geophysical survey. Final locations will be determined by NYSDEC.

Prior to initiating drilling activities, the drilling rig, augers, rods, split spoons, appurtenant equipment, well pipe and screens will be cleaned with steam. This cleaning procedure will also be used between each boring. These activities will be performed in a designated on-site cleaning area. Throughout and after the cleaning processes, direct contact between equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures will be used.

Test borings will be advanced with hollow stem augers, driven by truck mounted drilling equipment. During the drilling, an HNU photoionization detector will be used to monitor the gases exiting the hole. Auger cuttings will be contained and removed off-site only if readings from the HNU photoionizer are recorded at 5 ppm or above. Soil samples will be collected using a two inch outside diameter split-barrel sampler advanced in accordance with the standard penetration test procedure (ASTM D-1586). The sample barrel(s) will be cleaned prior to each use by the following procedure:

- o initially cleaned of all foreign matter
- o washed with a detergent and water mixture
- o rinsed with potable water
- o washed with acetone, then hexane, then acetone again
- o rinsed with distilled water
- o allowed to air dry.

An HNU detector will be used to monitor the gases from each sample as the split barrel sampler is opened. All samples will be placed in pre-cleaned, teflon-lined screw cap glass jars. The cleaning of the sample jars will include:

- o soap wash
- o tap water rinse
- o acetone rinse (pesticide grade)
- o rinse with copious quantities of deionized water (at least six rinsings).

Samples will be delivered daily under chain of custody control to the Recra Environmental Laboratories in Tonawanda, New York. A composite soil sample from each boring will be analyzed for priority pollutant metals and organics (Contract Laboratory Protocol) and PCBs. GC/MS procedures will include the identification and quantification of all peaks 10 percent or greater than the nearest calibrating standard.

Split-spoon samples will be taken every five feet until the water table is reached unless there is a change in geologic material or overlying waste material is discovered through visual or HNU detection. Once encountered, continuous split-spoon sampling will be conducted through

the shallow water bearing zone. Geologic classification of split-spoon samples will be performed and boring logs maintained by a Recra geologist.

At a minimum, each boring log will include:

- o date, test hole identification, and project identification
- o name of individual developing the log
- o name of driller and assistant(s)
- o drill make and model, auger size
- o identification of alternative drilling methods used and justification thereof (e.g. rotary drilling with a specific bit type to remove a sand plug from within the hollow stem augers)
- o depths recorded in feet and fractions thereof (tenths or inches), referenced to ground surface
- o standard penetration test (ASTM D-1586) blow counts
- o for samples, the length of the sample interval and the length of the sample recovered
- o the first encountered water table along with the method of determination, referenced to ground surface
- o drill and borehole characteristics
- o sequential stratigraphic boundaries
- o HNu measurements

Selected split-spoon samples obtained while sampling at five foot intervals or when a change in lithology has occurred will be analyzed for Atterberg limits and moisture content. Analysis of a selected split-spoon sample from the encountered water bearing material will be performed for grain size determination. In the event that the borehole/monitoring well must be left unattended prior to completion, the

borehole/monitoring well will be properly secured to ensure its integrity.

7.2.4 Groundwater Monitoring and Sampling

Three monitoring wells will be installed at the location of the test borings (Figure 3). Wells will be constructed of ten-foot long, 2-inch I.D. threaded flushjointed PVC screen and riser casing. Well screens will be installed with the top of the well screen located approximately one foot above the encountered groundwater table, dependent upon the major geologic changes encountered. All installations will include a washed, graded, sand pack surrounding the screen and extending two feet above the screen top. A two-foot thick bentonite seal will be placed above the sand pack and the remaining annulus filled with bentonite/grout to within two feet of the ground surface. A four to six inch diameter steel casing with locking cap will be placed over each well and cemented in place.

Well development will be performed using a pump or bottom discharge bailer at each well no sooner than 48 hours after the well grouting has been completed. Bailing will utilize pre-cleaned, dedicated PVC or stainless steel bailers at each well. Pumping will utilize a surface peristaltic pump fitted with pre-cleaned, dedicated polyethylene tubing for each well.

Prior to water and sediment evacuation, static water level and well bottom measurements will be recorded at each well using an electric level

sounder or fiberglass tape. These will be cleaned prior to and after each use. The well water/sediment volume will also be calculated.

Well evacuation will be supplemented by:

- o Temperature, pH, and specific conductance measurements
- o Evacuation volume measurement
- o Visual identification of water clarity and color
- o Visual identification of the physical characteristics of removed sediments

The development process will continue until a stabilization of pH, specific conductance, temperature, and clarity of discharge is achieved.

The well development is designed to correct any clogging of the water-bearing formation which may occur as a side effect of the drilling, and remove any drilling water (if used) from the water table such that each well will yield water which is representative of the in-situ conditions. Static water level measurements will also be made following well development.

Groundwater sampling will be initiated one week after the well development has been completed. Each sample will be analyzed for priority pollutant metals and organics (Contract Laboratory Protocol), PCBs, hardness and specific conductance. GC/MS procedures will include the identification and quantification of all peaks 10 percent or greater than the nearest calibrating standard.

At each well location, initial static water level and well bottom measurements will be recorded using an electric level sounder and/or fiberglass tape which will be cleaned between each well. Well water will be evacuated prior to sample collection by bailing or pumping to dryness or removing a minimum of three equilibrated well water volumes. Pre-cleaned, dedicated PVC or stainless steel bailers will be used for sampling at each well.

Permeability testing of the newly installed monitoring wells will be conducted following sampling. Initial static water level measurements will be made in each well followed by the injection of a weighted slug of specific volume. An instantaneous head displacement associated with the slug volume will be created and the subsequent decline in water level will be measured with an electric water level sounder. Once head conditions reach a static state, the slug will be removed and a negative head condition will result relative to the initial static water level. The subsequent rise in water level will be measured with an electric water level sounder.

Data analysis will involve the determination of the coefficient of permeability. The analysis will utilize a technique provided by Harry R. Cedergren in Seepage, Drainage and Flow Nets, 2nd Edition, whereby the log of head ratio (dependent variable) is plotted with respect to elapsed time (independent variable). Data points for permeability determination are obtained from a linearization of this plot and utilized in an appropriate equation.

The testing will provide data on the permeability of the materials at the top of the water table. These values will subsequently be utilized for determining approximate flow rates within the saturated zone, and extrapolated to approximate permeability in the unsaturated zone as required in the scoring under the HRS. This data will be useful in assessing the rate of groundwater flow in this area and as data input in evaluating potential remedial alternatives if required.

7.2.5 Other Sampling

Surface water and sediment samples will be collected from the ditch along the north side of the site (Figure 3). Samples will be analyzed for priority pollutant metals and organics (Contract Laboratory Protocol) and PCBs. GC/MS procedures will include the identification and quantification of all peaks 10 percent or greater than the nearest calibrating standard.

7.2.6 Air Monitoring

Air monitoring with an HNU photoionization detector will be performed as follows to reflect HRS scoring protocol:

- o at least one upwind and downwind location prior to any site work
- o during borings and monitoring well installations
- o for all split-spoon samples
- o for all surface water and sediment samples
- o weather including wind direction and wind speed will be measured during monitoring

7.2.7 Surveying

A map will be prepared showing the location and appropriate elevations (ground surface, top of monitor well casing) for each boring, sampling location, monitoring well installation, and other key contour points as determined by Recra.

A licensed land surveyor will be used to establish the locations and elevations of each above-mentioned point, as follows:

- Vertical Control - Elevations (0.01') will be established for the ground surface at the well, the top of monitor well casing (T.C.), and at least one other permanent object in the vicinity of the boring and well. Elevations will be relative to a regional, local or project specific datum. USGS benchmarks will be used whenever available.
- Horizontal Control - Exploratory borings and monitor wells will be located by ties (location and distance) to at least two nearby permanent objects. USGS benchmarks will be used whenever available.

7.3 Quality Assurance and Quality Control

An overall Quality Assurance Program is essential for the production of high-quality analytical data. Such a program requires precise control of laboratory activities. For the Quality Assurance Program in effect at the Laboratories of Recra, the reader is referred to a document previously submitted by Recra to NYSDEC, entitled, "Operation Manual - Field and Analytical Services." Analytical testing will be conducted using Contract Laboratory Protocol.

7.4 Final Hazard Ranking System Score

Upon completion of all field work and laboratory analysis, the Final Hazard Ranking System score will be calculated per NYSDEC guidelines.

7.5 Phase II Report

Upon completion of the investigation, a Phase II report will be prepared in complete accordance with the NYSDEC's Phase II report format. The Phase II report will include a plot plan drawing showing the following:

- o groundwater gradient
- o topographic relief
- o sampling locations
- o physical parameters and major contaminants/concentrations identified for each sampling location
- o any contaminant plumes (based on geophysical and monitoring data).

Five copies of the draft final Phase II report and fifteen copies of the final Phase II report will be submitted.

7.6 Applicable Procedures and Standards

All work performed for this project, including but not necessarily limited to, borings, monitoring well installations, monitoring, sampling, surveying, chain of custody, sample preservation, sample extraction, sample analysis, and HRS scoring, will conform to all applicable standards, guidelines, and prescribed methods and practices of the U.S. Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and other applicable regulatory

agencies. Any changes or modifications in these specifications will require approval by NYSDEC.

7.7 Estimated Cost

The estimated cost of the Phase II Work Plan is described below. This estimate is based on the placement of four monitoring wells in unconsolidated deposits at 30 feet below ground surface. Actual costs will be adjusted according to conditions encountered during field work. Only three wells may be necessary at this site.

o Subsurface Investigation	$11,937.00
o Analyses	20,182.00*
o Engineering Evaluation and Report	8,000.00
o Geophysics	5,000.00
Total Phase II	$45,119.00

* Cost includes Contract Laboratory Protocol for priority pollutant organics and metals. Costs will vary among contracted laboratories.

APPENDIX A

DATA SOURCES AND REFERENCES

REFERENCES

1. Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from selected Waste Disposal Sites. EPA 905/4-85-001, March, 1985.

2. Uncontrolled Hazardous Waste Site Ranking system, Users Manual, Draft. June 10, 1982.

3. General Soil Map and Interpretations. Erie County, New York. USDA Soil Conservation Service.

4. NYSDEC Application for Approval to Operate A Solid Waste Management Facility. City of Lackawanna Municipal Landfill. January 16, 1978.

5. LaSala, A.M., Jr., 1968. Groundwater Resources of the Erie-Niagara Basin, New York. Prepared for the Erie-Niagara Basin Regional Water Resources Planning Board. Basin Planning Report, ENB-3.

6. State of New York Official Compilation of Codes, Rules and Regulations, 1983. Article 8, Part 837.

7. New York Water Classifications and Quality Standards. Bureau of National Affairs, Inc., Part 701.

8. NYSDEC Application for Variance From 6 NYCRR 360. City of Lackawanna Municipal Landfill. February 8, 1978.

9. Gordon R. Batcheller, NYSDEC; Letter to Sheldon S. Nozik, Recra Research, Inc.; December 18, 1985.

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

11. 1980 Census of Population. Number of Inhabitants, New York. U.S. Department of Commerce, Bureau of the Census.

12. Donald Campbell, Erie County Department of Environment and Planning; Memorandum to Robert Mitrey, NYSDEC; April 16, 1981.

13. Cameron O'Connor, Erie County Department of Environment and Planning; Memorandum to Robert Mitrey, NYSDEC; August 4, 1980.

14. Flood Insurance Rate Map, City of Lackawanna, New York, Erie County, Panel 2 of 2, 360247 0002 B, July 2, 1980.

15. Site inspection report, Recra Research, Inc. January 24, 1986.

16. R. Mitrey, NYSDEC; Memorandum to P. Eismann, NYSDEC; October 16, 1980.

17. Robert J. Mitrey, NYSDEC; letter to Anthony Collareno, City of Lackawanna. January 4, 1980.

18. Cameron O'Connor, Erie County Department of Environment and Planning; Memorandum to Robert Mitrey, NYSDEC; July 3, 1980.

19. C. J. Klemp, Frank L. Ciminelli Construction Company, Inc.; letter to Steven J. Doleski, NYSDEC; November 17, 1980.

20. Steve Weisberger, Nussbaumer and Clarke, Inc.; letter to Robert Mitrey, NYSDEC; November 19, 1980.

21. Robert J. Mitrey, NYSDEC; letter to Anthony Collareno, City of Lackawanna; February 20, 1981.

22. Steve A. Weisberger, Nussbaumer and Clarke, Inc.; letter to Robert J. Mitrey, NYSDEC; February 12, 1981.

23. John S. Tygert, NYSDEC; letter to Anthony Collareno, City of Lackawanna; July 24, 1981.

24. Buehler, Edward J. and Irving H. Tesmer. Geology of Erie County, New York. Buffalo Society of Natural Sciences Bulletin, Vol. 21, No. 3.

25. Anthony Collareno, City of Lackawanna; letter to John C. McMahon, NYSDEC; January 13, 1978.

26. Site Profile for City of Lackawanna Landfill. NYSDEC, Region 9, March 31, 1982.

27. U.S.G.S. Topographic Map 7.5 series. Buffalo, New York, S.E. Quadrangle. 1965.

REFERENCE 1

United States
Environmental Protection
Agency

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

EPA-905/4-85-001
March 1985

EPA

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

Aquifer Lithology and Water-Bearing Characteristics

The ground-water system within the Buffalo area consists of a fractured bedrock aquifer and an overlying aquifer of unconsolidated deposits.

Bedrock aquifer.--The bedrock aquifer consists of all the bedrock units discussed previously. The main sources of water are the fractures and solution cavities. The specific-capacity and transmissivity values of selected bedrock aquifer units are shown below.

Bedrock unit[1]	Specific capacity[2] (gal/min)/ft		Transmissivity[2] (gal/d)/ft	
	Min	Max	Min	Max
Akron Dolomite	2	13	4,000	25,000
Camillus Shale	4	83	7,000	70,000

[1] Position of units is shown in figure 3.
[2] Data from LaSala (1968)

The specific capacity of a well is the rate of discharge of water from the well divided by the drawdown of the water level within the well. If the specific capacity is constant except for the time variation; it is roughly proportional to the transmissivity of the aquifer. Transmissivity is the rate at which water is transmitted through a unit width of the aquifer under a unit hydraulic gradient.

The data above indicate that these two properties differ considerably within and among the units. This variation reflects the amount and size of the fractures and solution cavities.

Unconsolidated aquifer.--The unconsolidated aquifer consists of a glaciolacustrine clay and sand and gravel deposits. The thicker unit is the glaciolacustrine clay. The test drilling during the summer of 1982 encountered the water table at various depths within the clay, and saturated sand stringers up to 3 inches thick were common. These stringers were not large, however, and generally thinned out within a few feet.

A seasonal water table above the clay unit was observed during wet periods but not during the summer. This water table is formed by the ponding of infiltrated precipitation above the relatively impermeable clay. As the water mounds upward, gradients toward natural or manmade topographic lows develop and eventually discharge to nearby surface-water bodies. As the season becomes drier and warmer, vegetation increases and takes up the remaining ground water through transpiration.

The hydrologic properties of the unconsolidated aquifer within the Buffalo area are also described in consultants' reports for Buffalo Color Corporation (sites 120-122), Bethlehem Steel Corporation (site 118), and the Alltift Landfill (site 162).

The general range of hydraulic conductivity was 0.0328 to 155.8 ft/d. The larger value can be attributed to slag fill material, which would have a considerably greater permeability than the glaciolacustrine clay. A permeability test was performed on a clay sample from the Alltift landfill; the permeability ranged from 1.6×10^{-4} to 1.8×10^{-4} ft/d.

The rate of ground-water movement within the unconsolidated aquifer at the Buffalo Color Corporation (sites 120-122) was calculated and ranges from 0.02 to 0.06 ft/yr.

The direction of ground-water movement in the unconsolidated aquifer is generally toward the major surface-water bodies--Lake Erie, Niagara River, and Buffalo River (fig. 4). The ground-water flow pattern is dissected in the northern part of the area, where impermeable bedrock is less than 5 ft below land surface, as indicated in figure 4. This unsaturated zone diverts the flow northward and southward.

Ground-Water Quality

The quality of ground water in the bedrock aquifer in the Buffalo area has been documented by LaSala (1968), who included maps showing the concentration ranges for sulfate, hardness, and chloride. Sulfate concentrations given in that report ranges from 100 to 500 ppm and hardness (as $CaCO_3$) from 150 to 1,000 ppm; chloride concentrations range from 100 to 1,500 ppm, and specific conductance ranges from 1,000 to 9,000 µmho/cm.

To estimate background water quality in the Buffalo area, a water sample was collected from the unconsolidated deposits in the fall of 1982 and analyzed for priority pollutants. The observation well was on Seneca Street (well SA-9, pl. 1), in the eastern part of the area just east of the Buffalo city line, and was screened above the bedrock contact. The results are given in table 14. Cadmium, lead, and zinc exceeded USEPA drinking-water criteria; minor amounts of some organic compounds were also detected. Additional sampling of the ground water in the unconsolidated aquifer would be needed to define the quality of water in this aquifer in the Buffalo area.

Three substrate samples were collected in the Buffalo area at localities not affected by waste-disposal sites to compare their concentrations of heavy metals with those in substrate samples from waste-disposal sites. Results are given in table 13.

Table 13.--Heavy-metal concentrations in samples from undisturbed soils in Buffalo, N.Y., June 1, 1983
[Locations shown in pl. 1. Concentrations in µg/kg.]

Location	Sample number	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Forest Lawn Cemetery	SB-1	5,000	8,000	7,000	20,000	100	10,000	31,000
Martin Luther King Park	SB-2	5,000	8,000	10,000	40,000	90	20,000	42,000
Holy Cross Cemetery[1]	SB-3	9,000	30,000	40,000	290,000	280	40,000	160,000

[1] This location is downwind from a major industrial area.

REFERENCE 2

Rick Crouch

DRAFT

UNCONTROLLED HAZARDOUS WASTE
SITE RANKING SYSTEM -
A USERS MANUAL

DRAFT

10 June 1982
(errata included)

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

TYPE OF MATERIAL	APPROXIMATE RANGE OF HYDRAULIC CONDUCTIVITY	ASSIGNED VALUE
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$< 10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$< 10^{-5} \geq 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$< 10^{-3} \geq 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$> 10^{-3}$ cm/sec	3

*Derived from:

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

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

TABLE 3

CONTAINMENT VALUES FOR GROUND WATER ROUTE

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

A. Surface Impoundment

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

B. Containers

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

C. Piles

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

D. Landfill

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

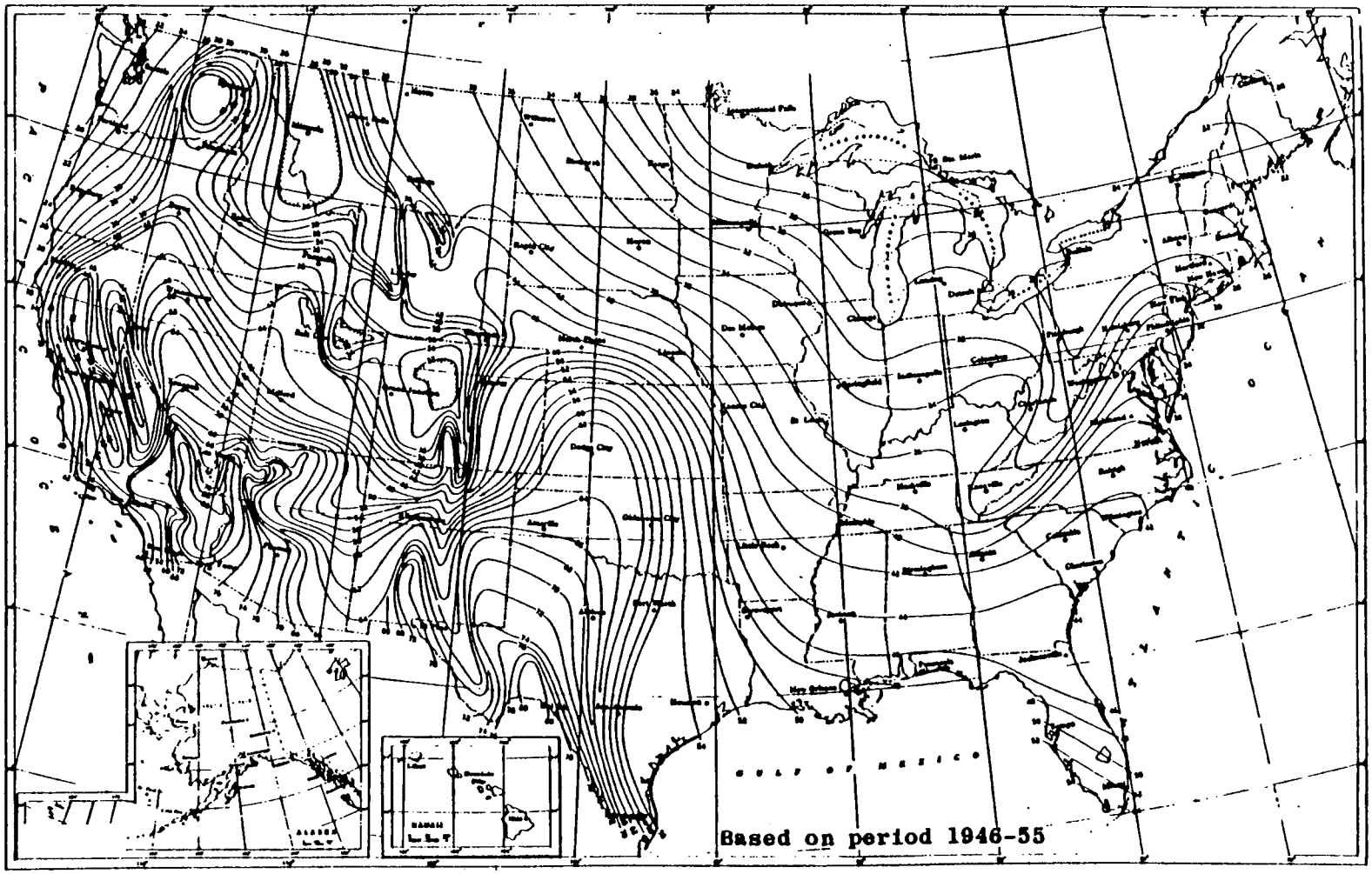


Figure 4

Mean Annual Lake Evaporation (In Inches)

Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

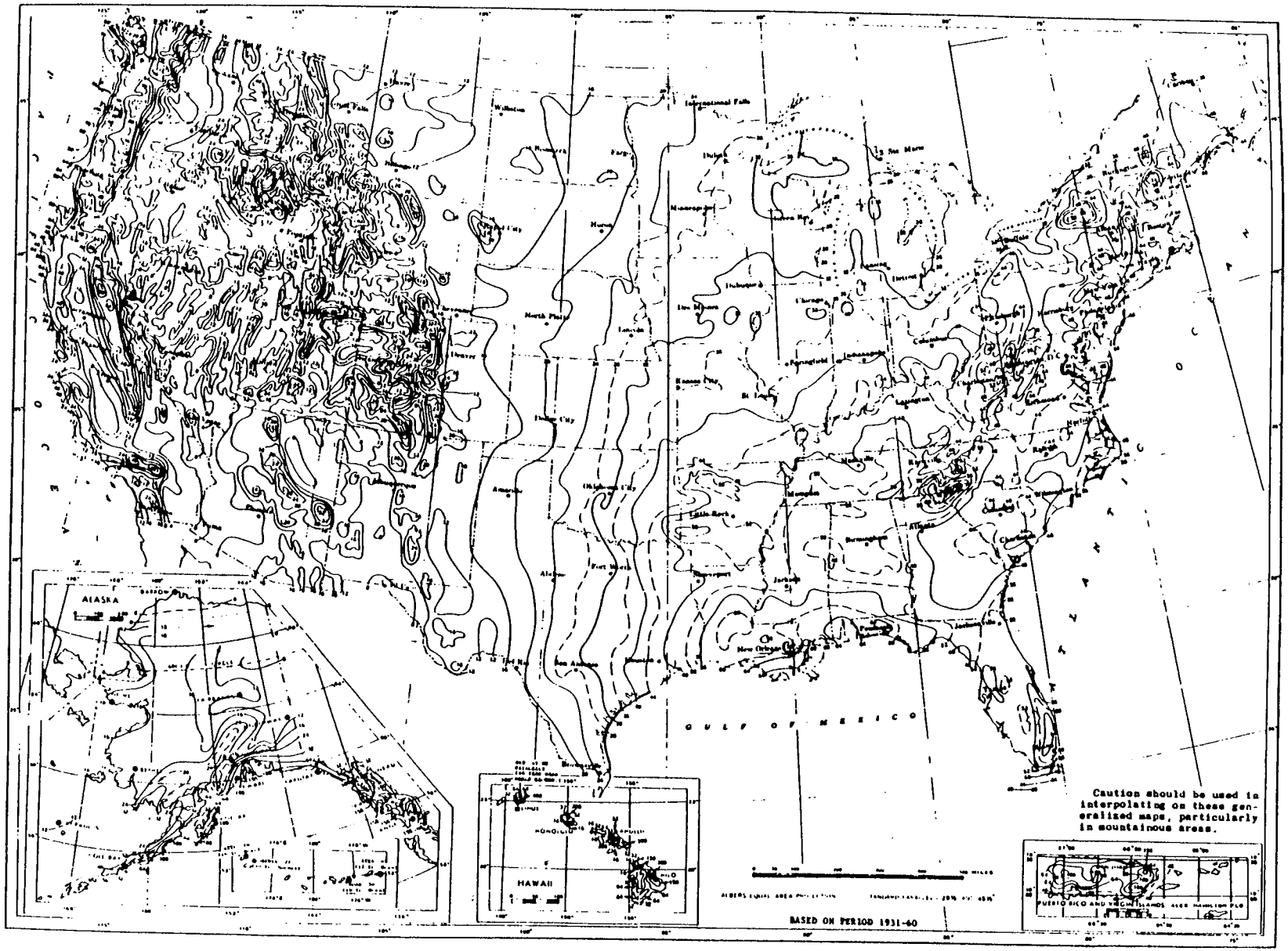


Figure 5

Normal Annual Total Precipitation (inches)

Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

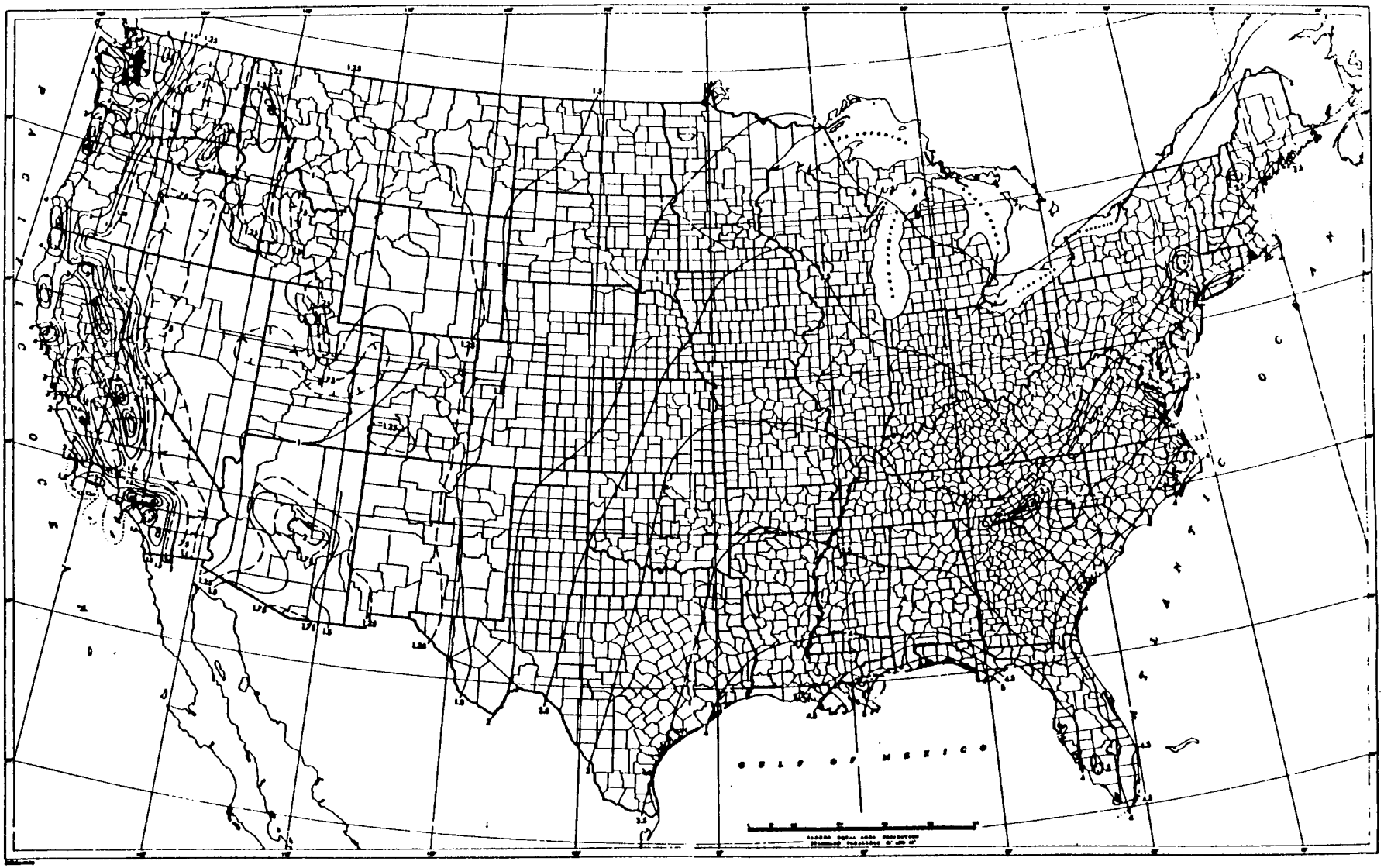


FIGURE 8

1-Year 24-Hour Rainfall (Inches)

Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

TABLE 9

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

	Assigned Value
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3

B. Containers

	Assigned Value
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3

C. Waste Piles

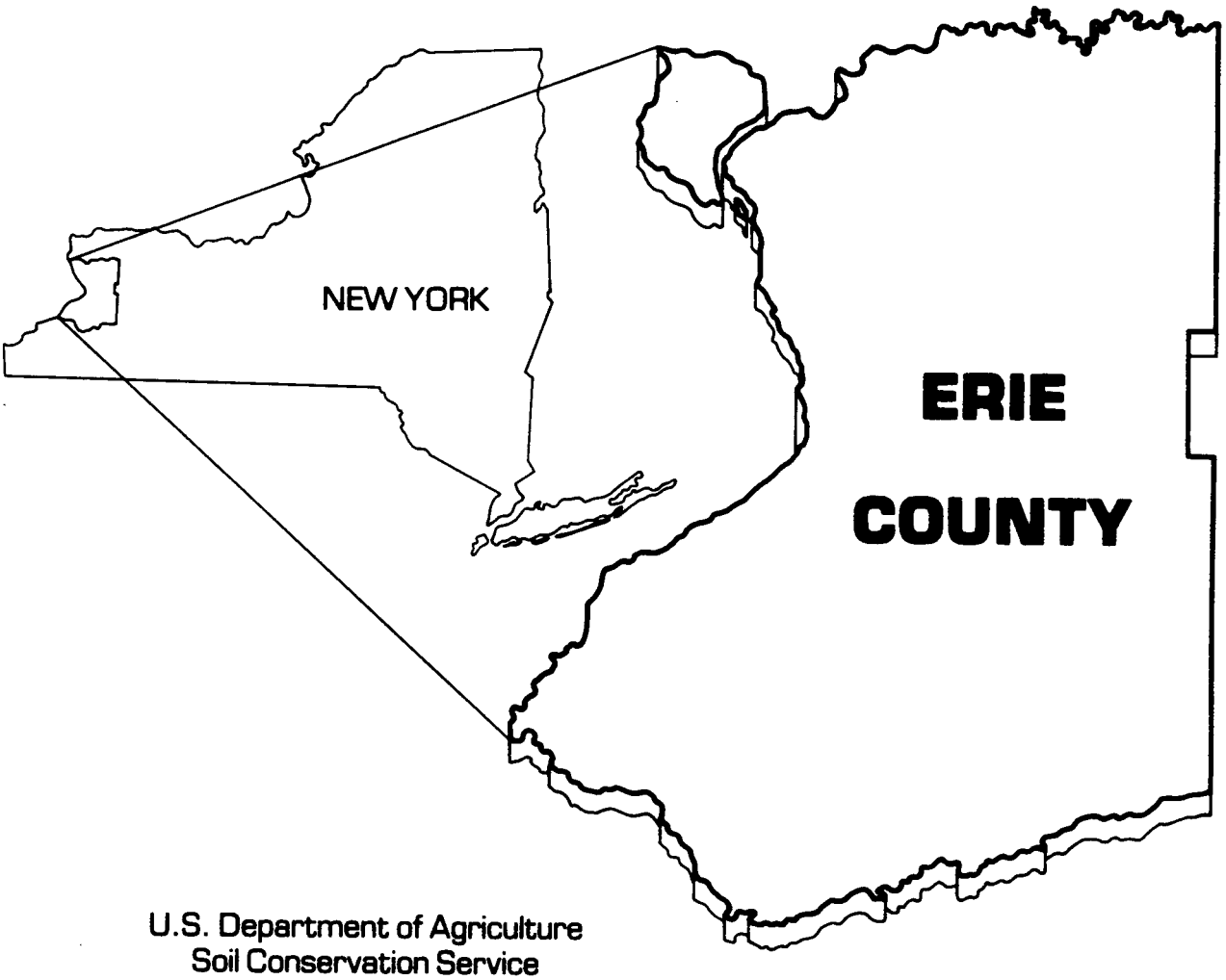
	Assigned Value
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

D. Landfill

	Assigned Value
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

REFERENCE 3

GENERAL SOIL MAP and INTERPRETATIONS



U.S. Department of Agriculture
Soil Conservation Service

in cooperation with

Cornell University Agricultural Experiment Station and
Erie County Soil and Water Conservation District

GENERAL SOIL MAP

ERIE COUNTY, NEW YORK
(Scale 1:62,500)

Prepared for

ERIE COUNTY SOIL AND WATER
CONSERVATION DISTRICT

by the
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

In cooperation with
CORNELL UNIVERSITY
AGRICULTURAL EXPERIMENT STATION

Report prepared by:
John P. Wulforst, Soil Scientist, Soil Conservation Service
Willis E. Hanna, Soil Scientist, Soil Conservation Service

May 1979

This report is a supplement to the Soil Survey of Erie County, New York. The detailed soil survey provided a basis for preparation of this report and accompanying general soil map. The reader should consult the Soil Survey of Erie County for detailed soils information.

Note - Because this report is published in advance of the detailed Soil Survey of Erie County, a few soil names and interpretations may differ slightly from the final published detailed soil survey.

Partial funding for publication of this report was provided by the Erie County Soil and Water Conservation District.

IV. DEEP SOILS FORMED IN GLACIO-LACUSTRINE DEPOSITS

This group of soil units is mainly on the lowland lakeplain in the northern and central part of the county. Some areas are in the major valleys. There are 10 general soil units in this group, and they cover 24.7 percent of the county.

The soils in these units formed in lake-laid sediments or deltaic deposits. The soil texture is dominantly sandy, silty or clayey, and lacking in rock fragments. Soil drainage class ranges from well drained to very poorly drained, but units that are somewhat poorly drained or wetter are more common. The landscape is mostly a nearly flat plains or broad, basin-like depressions. A few areas in valleys are hilly. Slope ranges from nearly level to steep. Nearly level units are the most common; only one unit is steep. Some of these soil units are used for farming, but areas that are somewhat poorly drained and wetter, or are clayey in texture tend to be idle or wooded.

25. NIAGARA, NEARLY LEVEL

Deep, somewhat poorly drained, silty soils, on lowland plains

This unit consist of nearly level and gently sloping soils on lowland lake plains. Slope ranges from 0 to 8 percent but is dominantly 0 to 3 percent.

This unit covers about 34,500 acres or 5.1 percent of the county. Niagara soils make up 50 percent of this unit and soils of minor extent comprise the remaining 50 percent.

Niagara soils formed in silty, gravel and stone-free, lake-laid sediments. These soils are somewhat poorly drained and have a seasonal high water table in the upper part of the subsoil during the spring and other excessively wet periods. The rate of water movement through the soil is moderately slow. Although these soils are generally free of rock fragments, in some areas the silty sediments are underlain by gravelly glacial till deposits.

Soils of minor extent are those of Collamer, Canandaigua, Cosad, Swormsville, and Appleton series. Moderately well drained Collamer soils are on a few better drained knolls and ridges, and poorly drained and very poorly Canandaigua soils are in depressions and along drainageways. Cosad soils are in areas where sandy sediments mantle clay deposits, and Swormsville soils are in areas where clayey sediments mantle sandy deposits. These two soils are often closely intermingled with the Niagara soils. Appleton soils occur in a few spots where glacial till deposits are intermingled with the silty soil sediments.

Some areas of this unit are still used for farming. These soils are easy to cultivate and respond well to good management when adequately drained. Seasonal wetness and relatively low soil strength are the principle considerations for most uses of this unit. These soils are highly erodible, and cuts and excavations are prone to slips and slumps. Some areas near Tonawanda Creek are subject to flooding.


MICHAEL
ROAD
AIRPORT
ROAD
Orchard Park
JEWETT RD
Carnegie
POWER
ROAD
STREET
Hamburg
NEWTON
ABBOTT ROAD
SHERIFF
ROAD
BEHN
TAYLOR ROAD
North Boston
ECKHARDT
ROAD
BOSTON
ROAD

50'

45'

1,000,000 FEET

Benson, nearly level

Hornell, gently sloping

Manlius, gently sloping

Manlius, moderately steep

Manlius-Rock outcrop, very steep

Orpark, gently sloping

Wassaic, nearly level

DEEP SOILS FORMED IN GLACIO-LACUSTRINE DEPOSITS

19 Canandaigua, level

20 Collamer, gently sloping

21 Galen-Elnora, gently sloping

22 Hudson, steep

23 Lakemont-Canadice, level

24 Minoa-Cosad, nearly level

25 Niagara, nearly level

26 Odessa, nearly level

27 Rhinebeck, nearly level

28 Schoharie, nearly level

DEEP SOILS FORMED IN GLACIO-FLUVIAL DEPOSITS

Alton-Palmyra-Phelps, gently sloping

Blasdell-Farnham, gently sloping

Chenango-Castile, gently sloping

Chenango-Varysburg-Blasdell, moderately steep

Red Hook, nearly level

DEEP SOILS FORMED IN RECENT ALLUVIAL DEPOSITS

34 Teel-Middlebury, nearly level

35 Wayland, level

36 Wayland-Farnham, nearly level

DEEP SOILS FORMED IN ORGANIC DEPOSITS

Palms, level

MIXED URBAN LAND AND SOIL AREAS

Urban land

Urban land-Churchville, nearly level

Urban land-Collamer, gently sloping

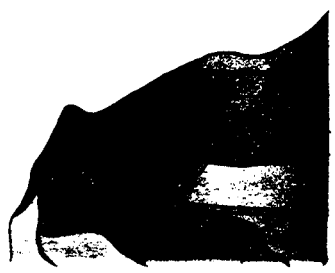
Urban land-Lima, gently sloping

Urban land-Niagara, nearly level

Urban land-Odessa, nearly level

Urban land-Schoharie, nearly level

Urban land-Wassaic, nearly level



Compiled 1979

REFERENCE 4

PERMIT 2204 6/1/81

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY	
PROJECT NO. 15S06	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

1. OWNER'S NAME: City of Lackawanna	2. ADDRESS (Street, City, State, Zip Code): 714 Ridge Road, Lack., N.Y. 14218	3. Telephone No.: 826-4555, ext. 21
4. OPERATOR'S NAME: City of Lackawanna	5. ADDRESS (Street, City, State, Zip Code): same	6. Telephone No.: same
7. ENGINEER'S NAME: Anthony Collareno	8. ADDRESS (Street, City, State, Zip Code): same	9. Telephone No.: same
10. ON-SITE SUPERVISOR: Harold Morgan	11. ADDRESS (Street, City, State, Zip Code): 52 Ingham Ave., Lack., N.Y. 14218	12. Telephone No.: 824-6172

13. HAS THE INDIVIDUAL NAMED IN ITEM 10 ATTENDED A DEPARTMENT SPONSORED OR APPROVED TRAINING COURSE?
☒ Yes ☐ No

Date	Course Title	Location
9/20/76	Sanitary Landfill Oper.	State Bldg., Buffalo, New York

14. PROJECT/FACILITY NAME: City of Lackawanna Municipal Landfill

15. COUNTY IN WHICH FACILITY IS LOCATED: Erie

16. ENVIRONMENTAL CONSERVATION REGION: 9

17. TYPE OF PROJECT FACILITIES: ☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☒ Sanitary Landfill ☐ Incineration ☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☐ Other refuse is incinerated in our municipal incinerator

18. HAS THIS DEPARTMENT EVER APPROVED PLANS AND SPECIFICATIONS AND/OR ENGINEERING REPORTS FOR THIS FACILITY? ☒ Yes Date _____ ☐ No

19. LIST WASTES NOT ACCEPTED

Only incinerated ash is brought to our landfill. No other materials were ever or shall ever be placed here.

20. BRIEFLY DESCRIBE OPERATION

Garbage is fed into our municipal incinerator and after complete combustion has occurred, the ash residue is transported to our landfill where it is dumped and covered over the same day.

A rubber tired front end loader owned by the City of Lackawanna and operated by a Lackawanna workman trained in landfill management procedures is brought to the site daily to spread the loads and deposit a six inch layer of cover material over the loads.

21. IF FACILITY IS A SANITARY LANDFILL, PROVIDE THE FOLLOWING INFORMATION:

a. Total useable area: (Acres) Initially 15 Currently 7

b. Distance to nearest offsite, downgradient, water supply well: none Feet

c. No. of groundwater monitoring wells: Upgradient none Downgradient none

22. INDICATE WHICH ATTACHMENTS, IF ANY, ARE INCLUDED WITH THIS APPLICATION:

☐ Form 47-19-2 or SW-7 ☐ Operations Plan & Report ☐ USGS Topographic Map ☐ Record Forms ☒ Other survey of areas. explanation of past operations.
☐ Construction Certificate ☐ Boring Logs ☐ Water Sample Analysis ☐ None

23. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

1/16/78 (Date) Edward J Kenul Mayor (Signature and Title)

47-19-4 (6/77)
Formerly SW-22

CENTRAL OFFICE COPY

REFERENCE 5

Erie-Niagara Basin

ERIE-NIAGARA BASIN REGIONAL WATER
RESOURCES PLANNING BOARD

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

Table 6.--Records of selected wells in the Erie-Niagara basin

Well number: See "Well-Numbering and Location System" in text for explanation.

Year completed: a - about
b - before

Type of well: Drl - drilled
Drv - driven

Depth of well: All depths below land surface.
a - about
r - reported
all others measured

Diameter of well: Diameters of dug wells are approximate.
Where two or more sizes of casings were used, they are shown in descending order.

Depth to bedrock: All depths below land surface
a - about
m - measured
all others reported

Water-bearing material: Gravel, sand, silt, and till - glacial deposits of Pleistocene age.
Camillus Shale - Camillus Shale of Silurian age.
Limestone - limestone unit consisting of the Onondaga Limestone of Devonian age and the Bertie Limestone and Akron Dolomite of Silurian age.
Lockport Dolomite - Lockport Dolomite of Silurian age.
Shale - Hamilton Group and Conneaut Group of Chadwick (1934) and intervening units, all of Devonian age.

Altitude above sea level: Estimated from topographic maps to nearest 5 feet.

Water level: All water levels are below land surface except those preceded by a (+) sign, which are above land surface.
a - about
p - pumping effect is probable
Flow - water flows above land surface but static head could not be measured.
r - reported
all others measured by U.S.G.S. personnel

Method of lift: AL - air lift
Dw - deep well cylinder pump
Jet - deep well jet pump
Sub - submersible pump
Sw - shallow-well pump
Tur - turbine pump

Type of power is indicated as -- I - internal combustion engine
M - manual
all others are electrically powered

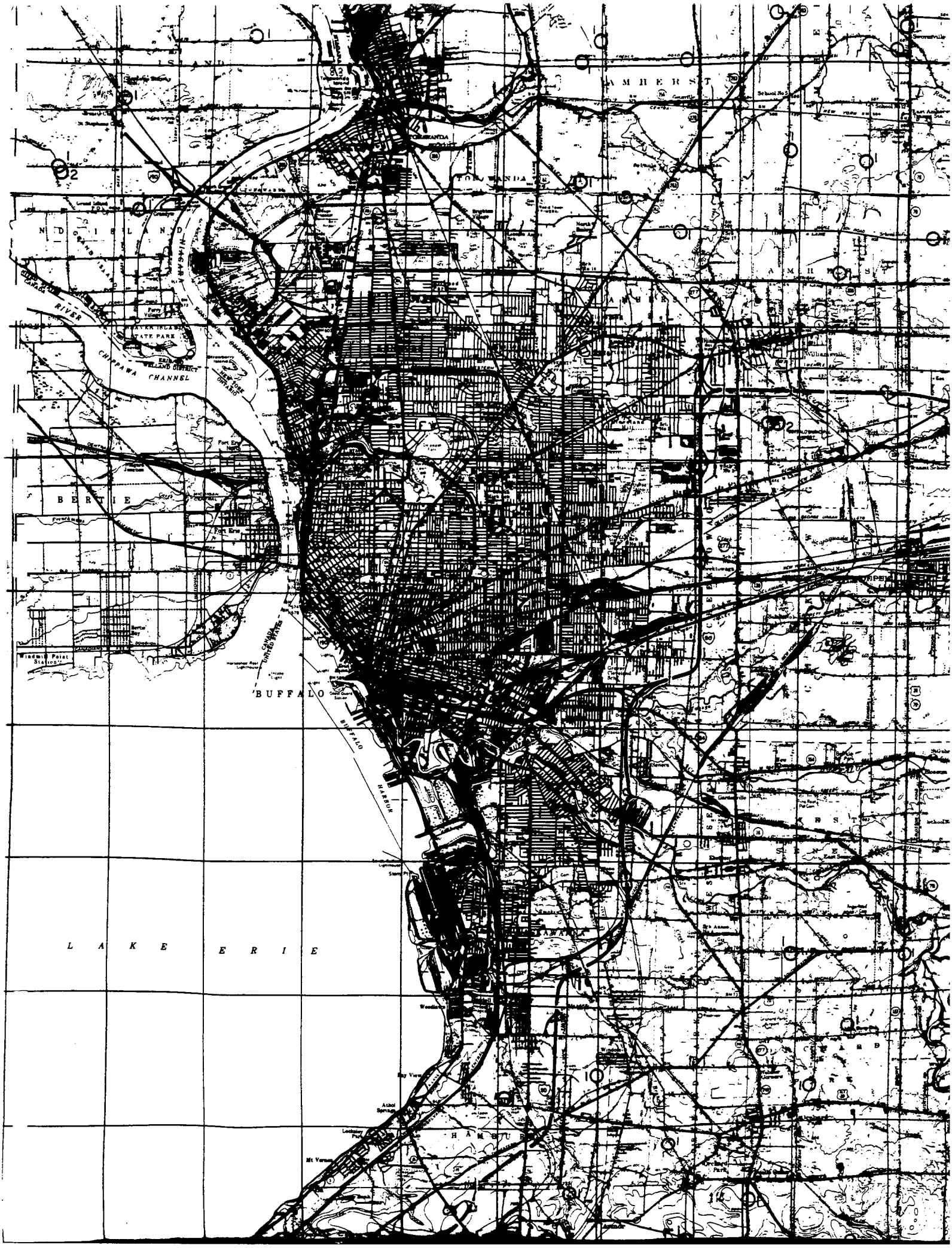
Estimated pumpage: Average daily pumpage supplied by owner, tenant, or operator, or computed on basis of per capita consumption of 50 gpd per person or 20 gpd per milk cow.

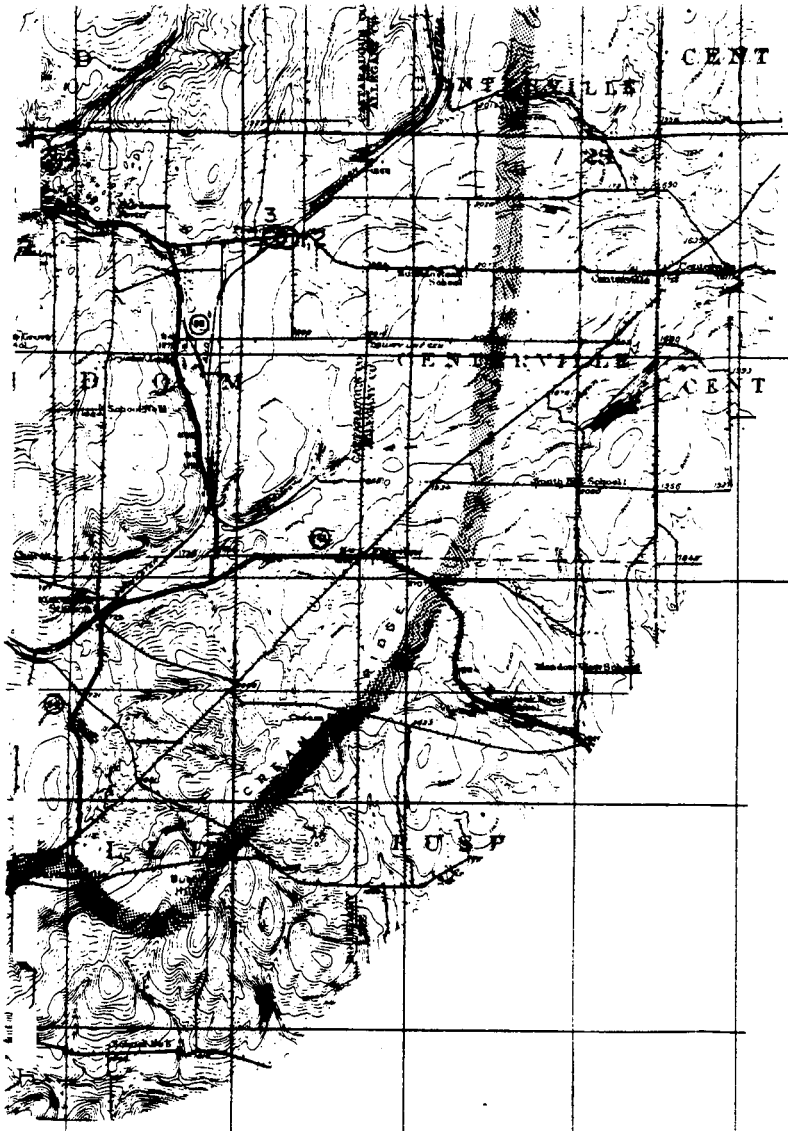
Use: A - abandoned
Ag - agricultural
C - commercial
D - domestic
F - dairy farm
GT - gas test
I - industrial
In - institutional
Ir - irrigation only
PS - public supply
T - test
U - unused
X - destroyed

Remarks: anal - chemical analysis in this report
dd - drawdown
est - estimated
gas - flammable gas issues from well
gpd - gallons per day
gpm - gallons per minute
H_2S - hydrogen sulfide gas present in ground water
iron - water has noticeable iron content
LS - land surface
OW - observation well, series of water-level measurements available
r - reported
swl - static water level
temp - temperature, in degrees Fahrenheit, measured by U.S.G.S. on same day water level was measured unless otherwise noted

Table 6.--Records of selected wells in the Erie-Niagara basin (Continued)

Well number	County	Owner	Year completed	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Water level: Below land surface (feet)	Water level: Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
246-836-4	Erie	Village of East Aurora	1961	Drl	r122	12	--	Sand and gravel	895	r7	5-16-61	Tur	250,000	PS	Iron; screen, 12-inch diameter, 6-gage slot, 107-122 ft; gravel packed; pumping rate 490 gpm.
246-843-1	do.	L. Godfrey	1950	Drl	45.3	6	a40	do.	830	17.9	7-26-63	Jet	100	D	H_2S; gas; clay overlies water-bearing gravel (r).
246-848-1	do.	C. Stocking	1953	Drl	27.8	6	a7	Shale	715	5.3	7-27-63	Jet	--	Ir	H_2S; used for lawn sprinkling only.
246-849-1	do.	G. Bapst	1955	Drl	39.1	7	a5	do.	685	9.2	7-27-63	Jet	250	D	Anal.
247-823-1	Wyoming	P. Hester	1957	Drl	36.6	6	--	Sand and gravel	1,160	15.6	8- 9-63	Jet	300	D	Do.
247-833-1	Erie	T. Siciari	1958	Drl	28.0	6	a16	Shale	945	6.5	8- 1-63	Sw	--	U	Iron; H_2S; unused because water quality is poor.
247-836-1	do.	A. Schuster	1961	Drl	46.1	6	a30	do.	860	15.8	7-30-63	Sw	250	D	Iron; H_2S; yield 10 gpm (r).
247-838-1	do.	D. Engel	1956	Drl	33.4	6	a12	do.	960	6.6	7-30-63	Sw	150	D	Anal; H_2S.
247-840-1	do.	A. Malovich	1959	Drl	40.4	8	a30	do.	890	21.1	7-26-63	Sw	200	D	Anal; iron; blasting charge fired in well to improve yield.
247-842-1	do.	J. Smith	1959	Drl	51.5	7	--	Sand	830	9.4	7-26-63	Jet	250	D	Anal; iron; H_2S.
248-818-1	Wyoming	O. Block	a1940	Drl	r140	6	--	Shale	1,045	Flow	--	Sw	1,400	D	Anal; gas; iron; temp 51.2, 8-12-63; flows about 1 gpm, 2.6 ft below LS; occasionally water level has fallen below end of drop pipe, 25 ft below surface while pumping.
248-825-1	do.	N. Fox	1963	Drl	r112	8	12	do.	1,115	28.8	8- 2-63	Sub	150	D	Anal; yield 1 gpm (r); water-bearing zone at 34 ft; no lower water-bearing zones.
248-828-1	do.	W. Beazley	1957	Drl	r112	8	8	do.	1,210	20.3	8- 2-63	Jet	300	D	Anal; yield 1 gpm (r); water-bearing zone at 30 ft; attempted to increase yield by blasting at three different depths; occasionally is pumped dry.
248-829-1	Erie	O. Whitman	1958	Drl	36.4	6	a28	do.	1,150	12.5	8- 2-63	Jet	50	D	Anal; H_2S; yield 2.5 gpm (r).
248-833-1	do.	R. Gilbert	1957	Drl	35.9	6	33	Sand and gravel; shale	970	11.4	8- 1-63	Sw	400	D	Anal; iron; H_2S.
248-838-1	do.	H. Gaczewski	1954	Drl	58.9	6	2	Shale	925	21.5	7-30-63	Jet	500	D	Anal; gas.
248-839-1	do.	Moog Servocontrols, Inc.	1957	Drl	85.7	8	--	do.	905	p40.4	9-23-63	Sub	--	I	Anal; H_2S.
-2	do.	do.	1957	Drl	24.7	12	--	do.	905	p14.4	9-23-63	Sub	--	I	Do.
-3	do.	do.	1958	Drl	76.8	10	--	do.	910	p26.9	9-23-63	Sub	--	I	H_2S.
-4	do.	do.	1962	Drl	r225	18	a10	do.	910	--	--	--	--	T	Yield 10 gpm (r).
248-841-1	do.	R. Struck	1960	Drl	43.8	6	a40	do.	770	17.9	7-26-63	Sw	200	D	Anal; iron; H_2S; gas; yield 3 gpm (r).
248-844-1	do.	O. Eaton	1959	Drl	19.7	6	a15	do.	740	8.5	7-26-63	Sw	250	D	Anal; H_2S; yield 5 gpm (r); blasting charge was fired in well to increase yield.
248-850-1	do.	Spring Perch Co., Inc.	1936	Drl	r40	5	--	do.	580	p21.0	3-20-63	Jet	10,000	I	Anal; H_2S; yield 29 gpm; another similar well is also in use.
249-809-1	Wyoming	H. Meeder	--	Dug	13.8	24	--	Sand and gravel	1,205	9.1	6- 9-64	Sw	150	D	
249-810-1	do.	C. Bailey	1963	Drl	54.4	6	--	do.	1,190	21.6	6-10-64	Jet	100	D	
-2	do.	W. Dersam	--	Dug	10.5	36	--	Till	1,180	4.6	6-10-64	Sw	--	A	
249-818-1	do.	G. Knobloch	--	Drl	58.6	4	a10	Shale	1,075	23.5	8-12-63	Jet	100	D	Anal; yield 3 gpm (est).
249-823-1	do.	L. Green	1963	Drl	81.5	8	19	do.	1,260	13.3	8- 9-63	Jet	400	D	Anal; yield 1.5 gpm (r).


GRAND ISLAND
AMHERST
TONAWANDA
NIAGARA FALLS
NIAGARA RIVER
CHIPPAWA CHANNEL
NEW YORK ONTARIO
BERTIE
BUFFALO
BUFFALO HARBOR
LAKE ERIE
HAMBURG



EXPLANATION

O1

Location of well; figure gives last digit of well number.

Q1SP

Location of spring; figure gives last digit of spring number.

●A

Miscellaneous data-collection site; letter symbol of site number.

Basin boundary

22' 78°20' 18' 16' 14' 12' 78°10' 08' 06'

YORK

REFERENCE 6

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

MARIO M. CUOMO
Governor

GAIL S. SHAFFER
Secretary of State

Published by
DEPARTMENT OF STATE
162 Washington Avenue
Albany, New York 12231

1/83

ARTICLE 8

Lake Erie — Niagara River Drainage Basin Series

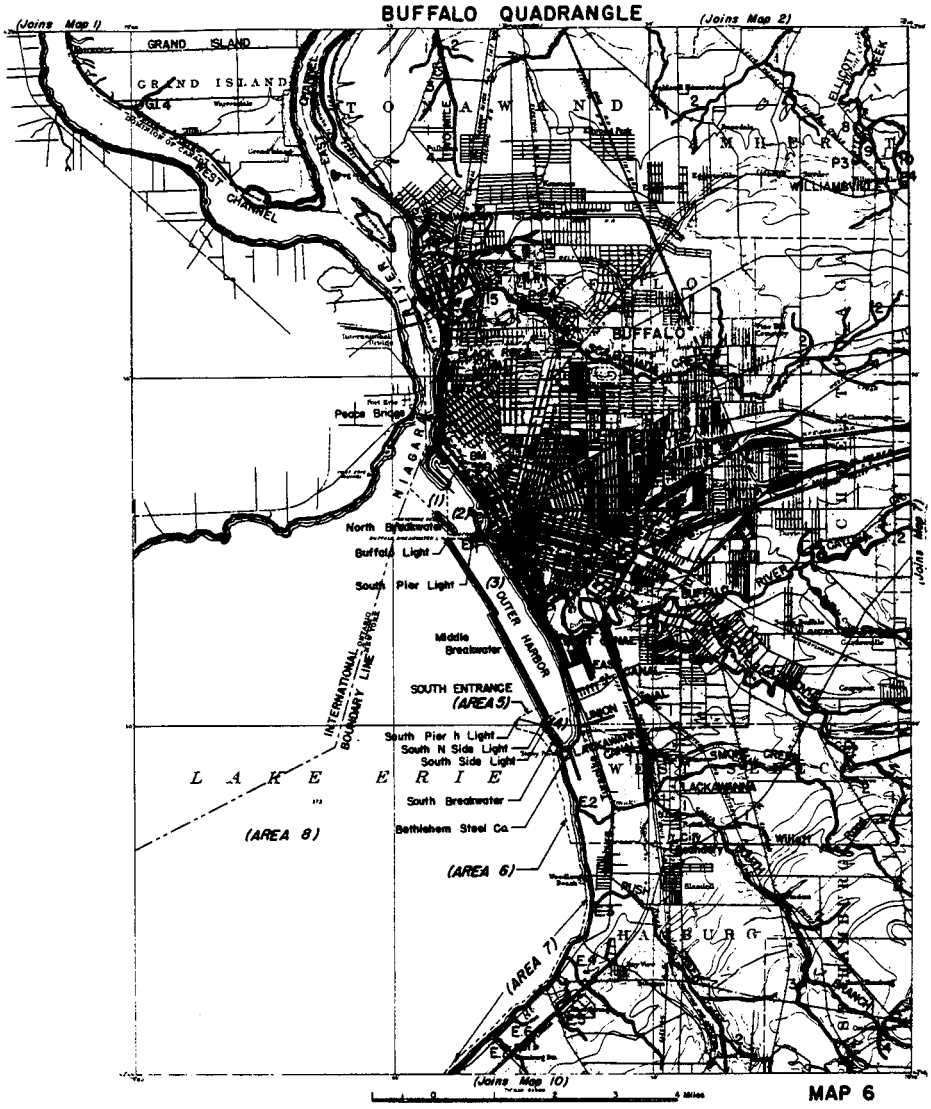
PART

TABLE I *(cont'd)*

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
226	E-2-1 portion as described	South Branch	Enters Smoke Creek from southeast 1.5 miles above mouth. Mouth to Green Lake, item no. 227.	6,7	C	C
227		Green Lake	Located on South Branch just west of S. Buffalo Street, Orchard Park.	7	B	B
228	E-2-1 portion as described	South Branch	From Green Lake, item no. 227, to source.	7,11	B	B
229	E-2-1-1,2,4	Tributaries of South Branch	Enter South Branch between mouth and Green Lake, item No. 227	6,10	D	D
229.1	E-2-1-3	Trib. of South Branch	Mouth to source	6,10, 11	C	C
229.2	E-2-1-3-1,2,3	Subtribs. of South Branch		6,10	D	D
230	E-2-1-5	Tributary of South Branch	Enters South Branch from south approximately 0.5 mile above Ellicott.	11	B	B
231	E-2-2 portion as described	Tributary of Smoke Creek	Enters Smoke Creek from south approximately 0.7 mile due north of Webster Corner. Mouth to outlet of P 80 easterly of Freeman Ponds. Near junction of S. Freeman Road and E. Quaker Street, Orchard Park.	7	D	D

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
219	E-1-55-2	Tributary of Beaver Meadow Creek	Enters Beaver Meadow Creek from south approximately 4.6 miles above mouth.	12	C	C(T)
220	E-1-56,57 and 58 and tribs. as shown on reference map	Tributaries of Buffalo River	Enter Buffalo River from east and west between Beaver Meadow Creek, item no. 219, and Plato Creek, item no. 221.	12	D	D
221	E-1-59 and tribs. as shown on reference map	Plato Creek	Enters Buffalo River from south approximately 0.9 mile above Java Village.	12	D	D
222	E-1-60,61,62,63, 64,65,66,67 and 68 and tribs. as shown on reference map	Tributaries of Buffalo River	Enter Buffalo River from east and west between Plato Creek, item no. 221, and trib. 69, item no. 223.	12	D	D
223	E-1-69 and tribs. as shown on reference map	Tributary of Buffalo River	Enters Buffalo River from east approximately 0.2 mile below Sardinia-Holland town line.	12	C	C(T)
224	E-1-70	Tributary of Buffalo River	Enters Buffalo River from east approximately 1.0 mile above Erie-Wyoming county line.	12	D	D
225	E-2	Smoke Creek	Enters Lake Erie from east approximately 0.6 mile north of City of Lakawanna-Hamburg town line.	6,7,11	D	D


BUFFALO QUADRANGLE
(Joins Map 1)
(Joins Map 2)
GRAND ISLAND
GRAND ISLAND
CHANNEL
CHANNEL
BUFFALO
Peace Bridge
NIAGARA
North Breakwater
Buffalo Light
South Pier Light
(3) OUTER HARBOR
Middle Breakwater
SOUTH ENTRANCE
(AREA 5)
INTERNATIONAL BOUNDARY LINE
South Pier h Light
South N Side Light
South Side Light
South Breakwater
Bethlehem Steel Co.
LAKE ERIE
(AREA 8)
(AREA 6)
(AREA 7)
(Joins Map 10)
MAP 6

REFERENCE 7

NEW YORK WATER CLASSIFICATIONS AND QUALITY STANDARDS

(Official Codes, Rules, and Regulations of the State of New York, Chapter X — Division of Water Resources, Article 2, Parts 700 through 704; Adopted April 28, 1972; Amended February 21, 1974; September 20, 1974; Part 703 Amended August 2, 1978; Effective September 1, 1978)

CONTENTS

PART 700

TESTS OR ANALYTICAL DETERMINATIONS

Section 700.1 Collection of samples. In making any tests or analytical determinations to determine compliance or noncompliance of sewage, industrial wastes or other waste discharges with established standards, samples shall be collected in such manner and at such locations as are approved by the commissioner. In approving such locations the commissioner shall be guided by the fact that (a) there must be prompt mixing of the discharge with the receiving waters; (b) that the mixing will not interfere with biological communities to a degree which is damaging to the ecosystem; (c) that the mixing will not diminish other beneficial uses disproportionately.

700.2 Tests or analytical determinations. Tests or analytical determinations to determine compliance or noncompliance with standards shall be made in accordance with the latest edition of (a) *Standard Methods for the Examination of Water and Wastewater* prepared by American Public Health Association (APHA), American Water Works Association (AWWA) and Water Pollution Control Federation (WPCF); (b) *Methods for Chemical Analysis of Water and Wastes* prepared by Environmental Protection Agency (EPA); (c) *Water Standards of the American Society for Testing and Materials* (ASTM); or (d) by other methods approved by the commissioner and the administrator as giving results equal to or superior to methods listed in any of the other documents.

PART 701

CLASSIFICATIONS AND STANDARDS OF QUALITY AND PURITY

(April 28, 1972; Amended February 21, 1974; September 20, 1974)

Section 701.1 Definitions. The terms, words or phrases used in Parts 700, 701, 702 and 704 shall have the following meaning:

(a) *Commissioner* shall mean the Commissioner of the Department of Environmental Conservation.

(b) *Administrator* shall mean the Administrator of the United States Environmental Protection Agency.

(c) *Best usage of waters* as specified for each class shall be those uses as determined by the commissioner and the administrator in accordance with the considerations prescribed by the Environmental Conservation Law and Public Law 92-500.

(d) *Approved treatment* as applied to water supplies shall mean treatment accepted as satisfactory by the authorities responsible for exercising supervision over the sanitary quality of water supplies.

(e) *Source of water supply for drinking, culinary or food processing purposes* shall mean any source, either public or private, the waters from which are used for domestic consumption or used in connection with the processing of milk, beverages or foods. (When water is taken for public drinking, culinary or food processing purposes, refer to New York State Department of Health regulations 10 NYCRR 170.)

(f) *Primary contact recreation* shall mean recreational activities where the human body may come in direct contact with raw water to the point of complete body submergence. Such uses include swimming, diving, water skiing, skin diving and surfing.

(g) *Secondary contact recreation* shall mean recreational activities where contact with the water is minimal and where ingestion of the water is not probable. Such uses include but are not limited to fishing and boating.

(h) *Saline surface waters* shall mean all waters which are so designated by the commissioner.

(i) *International boundary waters* shall mean those waters to which the water quality standards developed and adopted pursuant to the Boundary Water Treaty of 1909 and the Great Lakes Quality Agreement of 1972 apply.

(j) *Sewage, industrial waste and other wastes* shall have the meanings given in section 17-0105 of the Environmental Conservation Law.

(k) *Estuary* shall mean the tidal portion of a river or stream.

(l) A *thermal discharge* is one which results or would result in a temperature change of the receiving water.

(m) *Heat of artificial origin* shall mean all heat from other than natural sources including but not limited to, cumulative effects of multiple and proximate thermal discharges.

CLASS C

Best usage of waters. Suitable for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation.

Quality Standards for Class C Waters

Item: 1. Coliform.

Specifications: The monthly geometric mean total coliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 2,000 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Item: 2. pH.

Specifications: Shall be between 6.5 and 8.5.

Item: 3. Total dissolved solids.

Specifications: None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.

Item: 4. Dissolved oxygen.

Specifications: For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For nontrout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

Note 1: Refer to note 1 under Class AA which is also applicable to Class C standards.

CLASS D

Best usage of waters. These waters are suitable for secondary contact recreation, but due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support the propagation of fish.

Conditions related to best usage of waters. The waters must be suitable for fish survival.

Quality Standards for Class D Waters

Item: 1. pH.

Specifications: Shall be between 6.0 and 9.5.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than three milligrams per liter at any time.

Note 1: Refer to note 1 under Class AA which is also applicable to Class D standards.

701.5 Classes and standards for saline surface waters. The following items and specifications shall be the standards applicable to all New York Saline Surfaces Waters which are assigned the classification of SA, SB, SC or SD, in addition to the specific standards which are found in this Part under the heading of each such classification.

Quality Standards for Saline Surface Waters

Items: 1. Garbage, cinders, ashes, oils, sludge or other refuse.

Specifications: None in any waters of the marine district as defined by Environmental Conservation Law (§17-0105).

Item: 2. pH.

Specifications: The normal range shall not be extended by more than 0.1 pH unit.

Item: 3. Turbidity.

Specifications: No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Item: 4. Color.

Specifications: None from man-made sources that will be detrimental to anticipated best usage of waters.

Item: 5. Suspended, colloidal or settleable solids

Specifications: None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Items: 6. Oil and floating substances.

Specifications: No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.

Item: 7. Thermal discharges.

Specifications: (See Part 704 of this Title.)

CLASS SA

Best usage of waters. The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation.

Quality Standards for Class SA Waters

Item: 1. Coliform.

Specifications: The median MPN value in any series of samples representative of waters in the shellfish growing area shall not be in excess of 70 per 100 ml.

Item: 2. Dissolved oxygen.

Specifications: Shall not be less than 5.0 mg/l at any time.

Items: 3. Toxic wastes and deleterious substances.

Specifications: None in amounts that will interfere with use for primary contact recreation or that will be injurous to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SB

Best usage of waters. The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes.

Quality Standards for Class SB Waters

Item: 1. Coliform

Specifications: The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five eximinations. This standard shall be met during all periods when disinfection is practiced.

REFERENCE 8

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR VARIANCE FROM 6 NYCRR 360

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY

PROJECT NO.	DATE RECEIVED
15506	
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

1. OWNER'S NAME	2. ADDRESS (Street, City, State, Zip Code)	3. Telephone No.
City of Lackawanna	714 Ridge Road, Lackawanna, N.Y.14218	18 826-4555
4. OPERATOR'S NAME	**5. ADDRESS (Street, City, State, Zip Code)**	**6. Telephone No.**
City of Lackawanna	714 Ridge Rd., Lackawanna, N.Y.14218	826-4555
ENGINEER'S NAME	**8. ADDRESS (Street, City, State, Zip Code)**	**9. Telephone No.**
Anthony Collareno	714 Ridge Rd,, Lackawanna, N.Y.14218	826-4555

10. PROJECT/FACILITY NAME: City of Lackawanna Municipal Landfill

11. PROJECT STATUS	12. COUNTY IN WHICH FACILITY IS LOCATED	13. ENVIRONMENTAL CONSERVATION REGION
☐ Public ☐ Private ☐ Proposed ☒ Existing	Erie	9

14. DESCRIBE SPECIFIC LOCATION OF FACILITY

The area is located on the eastern boundary line of Lackawanna, partly in Lackawanna and partly in West Seneca. It is specifically bounded on its westerly line by the Majestic Acres Subdivision which fronts on Abbott R., on its northerly line by the property owned by *

15. TYPE OF PROJECT FACILITIES: ☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☒ Sanitary Landfill ☐ Incineration ☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☐ Other refuse is incinerated in our municipal ~~incinerator~~

16. BRIEFLY DESCRIBE THE PROJECT INCLUDING THE BASIC PROCESS AND MAJOR COMPONENTS

the Niagara Mohawk Power Corp., and on its easterly and southerly lines by the NYS Thruway.

Only incinerator residue is deposited at our landfill site, spread with a rubber tired front end loader, and covered daily with cover material available at our site.

17. SPECIFIC PROVISION OF 6 NYCRR 360 FROM WHICH A VARIANCE IS REQUESTED: Section 360.5 (d) | Paragraph ii G iii | Variance Request No. 1 G 2

18. BRIEFLY DESCRIBE PROPOSED VARIANCE The City of Lackawanna requests that its Engineering Staff be allowed to prepare the application and do all necessary survey work for the operation of the landfill. The landfill is in existance and has been operating since 1961, and we do not believe the service of either a P.E. or a Licensed Land Surveyor are necessary to continue its operation. The Lackawanna Engineering Dept. will stake out the boundary lines of the landfill site as soon as weather permits, not later than 4/1/78.

19. IMPACTS OF VARIANCE APPROVAL OR DISAPPROVAL:

a. Environmental Impact:

b. Economic Impact:

20. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

2/8/78 — Date

Edward J. Kunka Mayor — Signature and Title

-19-5 (6/77)
rmerly SW-23

CENTRAL OFFICE COPY

REFERENCE 9

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, NY 14202-1073 716/847-4550

Henry G. Williams
Commissioner

December 18, 1985

Mr. Sheldon S. Nozik
RECRA Research, Inc.
4248 Ridge Lea Road
Amherst, NY 14226

Dear Mr. Nozik:

Tentative Erie County and final Niagara County freshwater wetlands are shown directly on your site maps for the Superfund sites you are studying. Please be sure to examine all the maps since I did not copy all wetland boundaries if a given area was shown on another map.

Also, our maps show only those wetlands which exceed 5 ha in size. We have no information compiled for wetlands less than 5 acres in size.

To my knowledge, we have no "critical habitats" within one mile of the sites in question. Further, I am not aware of endangered or threatened species occupying these sites.

If you need some specific information on the wetlands within your study area, you will need to come to Regional Headquarters to compile those data.

Sincerely,

Gordon R. Batcheller
Senior Wildlife Biologist
Region 9

GRB:ls

Enc.

cc: Mr. Pomeroy

RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

December 13, 1985

Mr. James Pomeroy
Habit Protection Biologist
NYSDEC Fish and Wildlife Office
128 South Street
Olean, NY 14760

Dear Mr. Pomeroy:

As per our telephone conversation on December 3, 1985, enclosed are sections of the topographic maps for the NYSDEC Phase I Superfund sites we are presently working on. Below is a list of these sites:

1. Exolon Company
2. Pennwalt-Lucidal
3. Mollenberg-Betz Co.
4. Empire Waste
5. Bisonite Paint Co.
6. Stocks Pond
7. Aluminum Matchplate
8. Otis Elevator (Stimm Assoc.)
9. LaSalle Reservoir
10. Tonawanda City Landfill
11. Union Road Site
12. Central Auto Wrecking (Diarsonal Co.)
13. Procknal and Katra
14. Consolidated Freightway
15. U.S. Steel (Stimm Assoc.)
16. Ernst Steel
17. American Brass (Anaconda)
18. Erie-Lackawanna Site
19. Dresser Industries
20. W. Seneca Transfer Station
21. Old Land Reclamation
22. Northern Demolition
23. Lackawanna Landfill
24. South Stockton Landfill*
25. Chadakoin River Park*
26. Dunkirk Landfill*
27. Felmont Oil Co.*
28. NFTA**
29. Walmore Road Site**
30. Schreck's Scrapyard**

* Chautaugua County
** Niagara County

As part of the search requirements for the NYSDEC Superfund sites, each of these sites must be documented as follows:

- if there are any coastal wetlands within two (2) miles of the site
- if there are any freshwater wetlands within one (1) mile of the site (5 acre min.
- if there are any critical habitats within one (1) mile of the site (endangered species or wildlife refuges)

Continued . . .

4248 Ridge Lea Road, Amherst, New York 14226 Telephone (716) 838-6200

Would you please forward information on sites 1-10 as soon as possible, as we have a January 15, 1986 deadline for submittal of these reports to Albany.

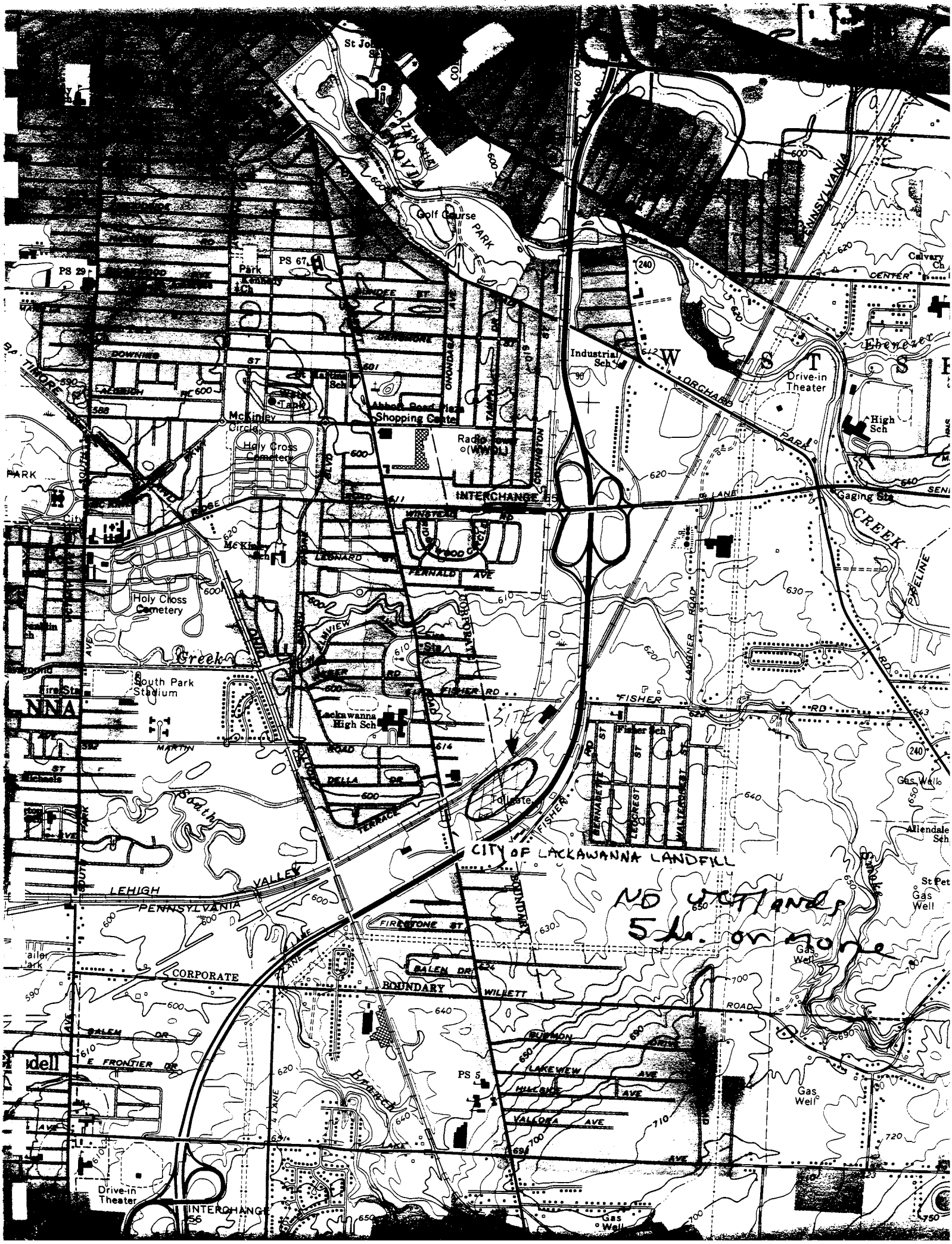
Thank you very much for your assistance and promptness in these matters. Should you have any questions or comments, please do not hesitate to call.

Sincerely,

RECRA RESEARCH, INC.

Sheldon S. Nozik
Environmental Specialist

SSN/jlo
Enclosure


Golf Course
PARK
PS 29
PS 67
Park
Calvary Ch
CENTER
Industrial Sch
Drive-in Theater
Ebenezer
High Sch
ORCHARD
PARK
Abbott Road Plaza Shopping Center
McKinley Circle
Holy Cross Cemetery
Radio Tower (WWDL)
INTERCHANGE
Gaging Sta
CREEK
PIPELINE
McKinley Ch
Holy Cross Cemetery
South Park Stadium
Lackawanna High Sch
SITE
Fisher Sch
FISHER RD
Gas Wells
Allendale Sch
CITY OF LACKAWANNA LANDFILL
NO WETLANDS 5 ac. or more
LEHIGH VALLEY
PENNSYLVANIA
CORPORATE BOUNDARY
WILLETT ROAD
SALEM DR
E FRONTIER DR
PS 5
LAKEVIEW AVE
VALORA AVE
Drive-in Theater
INTERCHANGE 56
Gas Well

REFERENCE 10

New York State Atlas of Community Water System Sources 1982

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

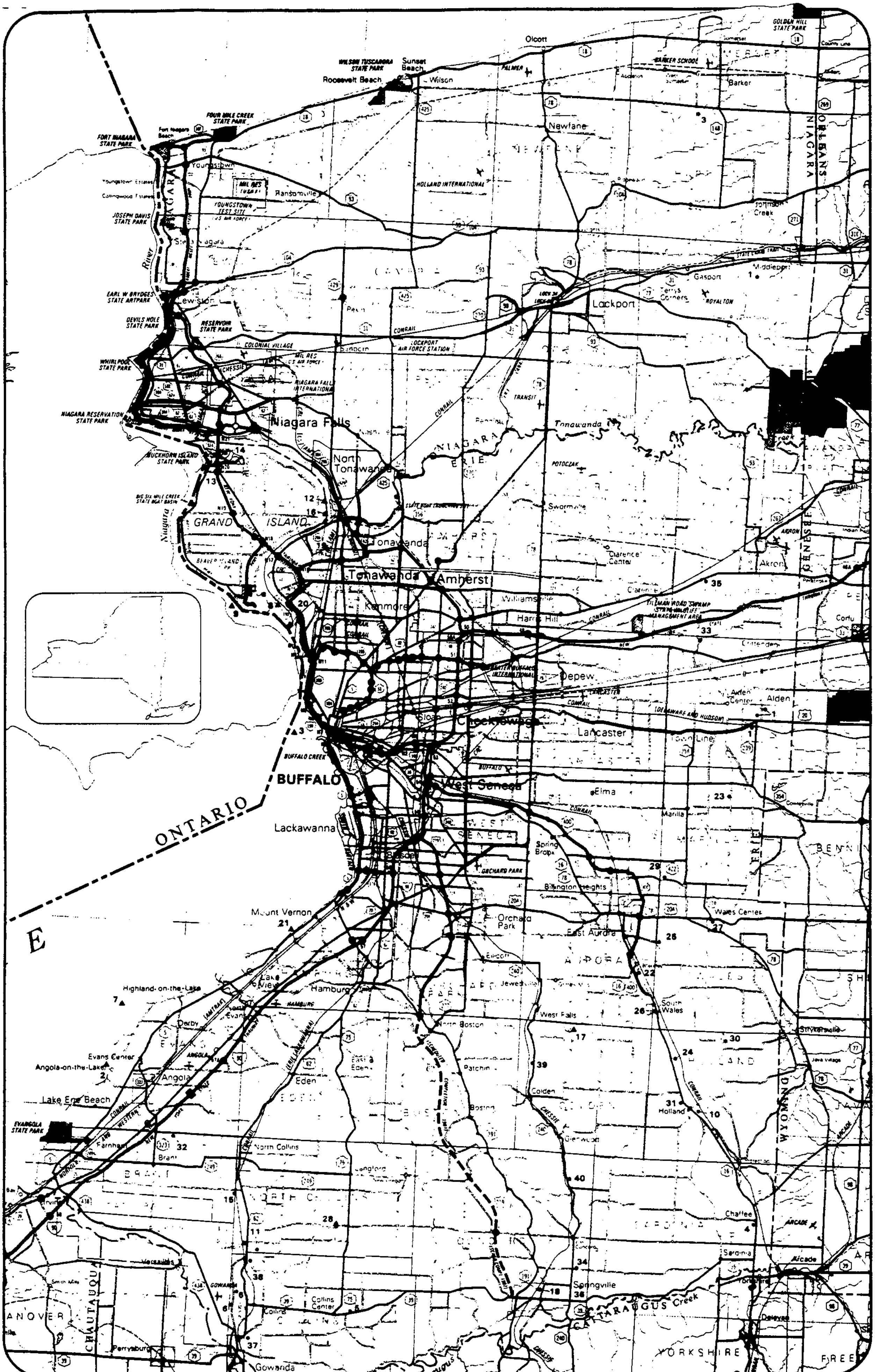
ERIE COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
	Akron Village (See No 1 Wyoming Co, Page 10)	3640	
1	Alden Village	3460	Wells
2	Angola Village	8500	Lake Erie
3	Buffalo City Division of Water	357870	Lake Erie
4	Caffee Water Company	210	Wells
5	Collins Water District #3	704	Wells
6	Collins Water Districts #1 and #2	1384	Wells
7	Erie County Water Authority (Sturgeon Point Intake)	375000	Lake Erie
8	Erie County Water Authority (Van DeWater Intake)	NA	Niagara River - East Branch
9	Grand Island Water District #2	9390	Niagara River
10	Holland Water District	1670	Wells
11	Lawtons Water Company	138	Wells
12	Lockport City (Niagara Co)		Niagara River - East Branch
13	Niagara County Water District (Niagara Co)		Niagara River - West Branch
14	Niagara Falls City (Niagara Co)		Niagara River - West Branch
15	North Collins Village	1500	Wells
16	North Tonawanda City (Niagara Co)		Niagara River - West Branch
17	Orchard Park Village	3671	Pipe Creek Reservoir
18	Springville Village	4169	Wells
19	Tonawanda City	18538	Niagara River - East Branch
20	Tonawanda Water District #1	91269	Niagara River
21	Wanakah Water Company	10750	Lake Erie
Non-Municipal Community			
22	Aurora Mobile Park	125	Wells
23	Bush Gardens Mobile Home Park	270	Wells
24	Circle B Trailer Court	50	Wells
25	Circle Court Mobile Park	125	Wells
26	Creekside Mobile Home Park	120	Wells
27	Donnelly's Mobile Home Court	99	Wells
28	Gowanda State Hospital	NA	Clear Lake
29	Hillside Estates	160	Wells
30	Hunters Creek Mobile Home Park	150	Wells
31	Knox Apartments	NA	Wells
32	Maple Grove Trailer Court	72	Wells
33	Millgrove Mobile Park	100	Wells
34	Perkins Trailer Park	75	Wells
35	Quarry Hill Estates	400	Wells
36	Springville Mobile Park	114	Wells
37	Springwood Mobile Village	132	Wells
38	Taylors Grove Trailer Park	39	Wells
39	Valley View Mobile Court	42	Wells
40	Villager Apartments	NA	Wells

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982

ERIE and NIAGARA COUNTIES

BUREAU OF PUBLIC WATER SUPPLY PROTECTION



REFERENCE 11

CHARACTERISTICS OF THE POPULATION

Number of Inhabitants

NEW YORK

1980 Census of Population

U.S. Department of Commerce
BUREAU OF THE CENSUS

Table 5. Population of Places: 1960 to 1980

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
Adams village	Jefferson	1 701	1 951	1 914
Adams Center (CDP)	Jefferson	1 519	...	...
Addison village	Steuben	2 028	2 104	2 185
Afton village	Chenango	982	1 064	956
Akron village	Erie	2 971	2 863	2 841
Albany city	Albany	101 727	115 761	129 726
Albertson (CDP)	Nassau	5 561	6 825	...
Albion village	Orleans	4 897	5 122	5 182
Alden village	Erie	2 488	2 651	2 042
Alexander village	Genesee	483	474	335
Alexandria Bay village	Jefferson	1 265	1 440	1 583
Alfred village	Allegany	4 967	3 804	2 807
Allegany village	Cattaraugus	2 078	2 050	2 064
Almond village	Total	568	658	698
	Allegany (pt. in)	529	627	665
	Steuben (pt. in)	39	31	31
Altamont village	Albany	1 292	1 561	1 365
Altmar village	Oswego	347	448	277
Amagansett (CDP)	Suffolk	2 188	...	...
Amenia (CDP)	Dutchess	1 183	1 157	162
Ames village	Montgomery	224	198	...
Amityville village	Suffolk	9 076	9 794	8 318
Amsterdam city	Montgomery	21 872	25 524	28 772
Andes village	Delaware	372	353	399
Andover village	Allegany	1 120	1 214	1 247
Angelica village	Allegany	982	948	898
Angola village	Erie	2 292	2 676	2 499
Angola on the Lake (CDP)	Erie	1 907	1 573	...
Antwerp village	Jefferson	749	872	881
Apalachin (CDP)	Tioga	1 227	1 233	...
Arcade village	Wyoming	2 052	1 972	1 930
Ardsley village	Westchester	4 183	4 470	3 991
Argyle village	Washington	320	392	355
Arkport village	Steuben	811	984	837
Arlington (CDP)	Dutchess	11 305	11 203	8 317
Armonk (CDP)	Westchester	2 238	...	...
Asharoken village	Suffolk	635	540	253
Athens village	Greene	1 738	1 718	1 754
Atlantic Beach village	Nassau	1 775	1 640	...
Attica village	Total	2 659	2 911	2 758
	Genesee (pt. in)	16	2	–
	Wyoming (pt. in)	2 643	2 909	2 758
Auburn city	Cayuga	32 548	34 599	35 249
Aurora village	Cayuga	926	1 072	834
Avenill Park (CDP)	Rensselaer	1 337	1 471	...
Avoca village	Steuben	1 144	1 153	1 086
Avon village	Livingston	3 006	3 260	2 772
Babylon village	Suffolk	12 388	12 897	11 062
Bainbridge village	Chenango	1 603	1 674	1 712
Baldwin (CDP)	Nassau	31 630	34 525	30 204
Baldwinsville village	Onondaga	6 446	6 298	5 985
Ballston Spa village	Saratoga	4 711	4 968	4 991
Balmville (CDP)	Orange	2 919	3 214	1 538
Barker village	Niagara	535	567	528
Barneveld village	Oneida	396	423	363
Batavia city	Genesee	16 703	17 338	18 210
Bath village	Steuben	6 042	6 053	6 166
Baxter Estates village	Nassau	911	1 026	932
Bayberry–Lynelle Meadows (CDP)	Onondaga	14 813	...	...
Bayport (CDP)	Suffolk	9 282	8 232	...
Bay Shore (CDP)	Suffolk	10 784	11 119	...
Bayville village	Nassau	7 034	6 147	3 962
Beacon city	Dutchess	12 937	13 255	13 922
Beaverdam Lake (CDP)	Orange	1 324	...	...
Bedford (CDP)	Westchester	1 633	...	...
Bellerose village	Nassau	1 187	1 136	1 083
Belle Terre village	Suffolk	826	678	295
Bellmore (CDP)	Nassau	18 106	18 431	12 784
Bellport village	Suffolk	2 809	3 046	2 461
Belmont village	Allegany	1 024	1 102	1 146
Bemus Point village	Chautauqua	444	487	443
Bergen village	Genesee	976	1 018	964
Berkshire (CDP)	Fulton	1 095	...	...
Bethpage (CDP)	Nassau	16 840	18 555	...
Big Flats (CDP)	Chemung	2 892	2 509	...
Billington Heights (CDP)	Erie	1 782	1 278	...
Binghamton city	Broome	55 860	64 123	75 941
Black River village	Jefferson	1 384	1 307	1 237
Blasdell village	Erie	3 288	3 910	3 909
Bloomingburg village	Sullivan	338	323	303
Bloomingdale village	Essex	608	536	490
Blooming Grove (CDP)	Orange	1 151	...	...
Bloomington–Hickory Bush (CDP)	Ulster	1 002	...	...
Bohemia (CDP)	Suffolk	9 308	8 926	...
Bolivar village	Allegany	1 345	1 379	1 405
Boonville village	Oneida	2 344	2 488	2 403
Boyson Bay (CDP)	Onondaga	1 160	1 191	...
Brasher Falls–Winthrop (CDP)	St. Lawrence	1 454	...	...
Brentwood (CDP)	Suffolk	44 321	28 327	15 387
Brewerton (CDP)	Total	2 472	1 985	...
	Onondaga (pt. in)	1 586	1 201	...
	Oswego (pt. in)	886	784	1 714
Brewster village	Putnam	1 650	1 638	...
Brewster Heights (CDP)	Putnam	1 054	1 265	...
Brewster Hill (CDP)	Putnam	2 371	1 745	5 105
Briarcliff Manor village	Westchester	7 115	6 521	...
Bridgehampton (CDP)	Suffolk	1 941	...	...
Bridgewater village	Oneida	578	601	373
Brighton (CDP)	Monroe	35 776	...	...
Brightwaters village	Suffolk	3 286	3 808	3 193
Brinckerhoff (CDP)	Dutchess	3 030	2 094	...
Broadalbin village	Fulton	1 415	1 452	1 438
Brockport village	Monroe	9 776	7 878	5 256
Brockway (CDP)	Dutchess	1 301	...	...
Brocton village	Chautauqua	1 416	1 370	1 416
Bronxville village	Westchester	6 267	6 674	6 744
Brookville village	Nassau	3 290	3 212	1 468
Brownville village	Jefferson	1 099	1 187	1 082
Brushton village	Franklin	577	547	553
Buchanan village	Westchester	2 041	2 110	2 019
Buffalo city	Erie	357 870	462 768	532 759
Burdett village	Schuyler	410	454	420
Burke village	Franklin	226	237	273
Cairo (CDP)	Greene	1 281	...	...
Caledonia village	Livingston	2 188	2 327	1 917
Calverton–Roanoke (CDP)	Suffolk	4 952	...	...
Cambridge village	Washington	1 820	1 769	1 748
Camden village	Oneida	2 667	2 936	2 694
Camillus village	Onondaga	1 298	1 534	1 416
Canajoharie village	Montgomery	2 412	2 686	2 681
Canandaigua city	Ontario	10 419	10 488	9 370
Canaseraga village	Allegany	700	750	730
Canastota village	Madison	4 773	5 033	4 896
Candor village	Tioga	917	939	956
Canisteo village	Steuben	2 679	2 772	2 731
Canton village	St. Lawrence	7 055	6 398	5 046
Cape Vincent village	Jefferson	785	820	770
Carle Place (CDP)	Nassau	5 470	6 326	...
Carthage village	Jefferson	3 643	3 889	4 216
Cassadaga village	Chautauqua	821	905	820
Castile village	Wyoming	1 135	1 330	1 146
Castleton-on-Hudson village	Rensselaer	1 627	1 730	1 752
Castorland village	Lewis	277	327	321
Cato village	Cayuga	475	601	476
Catskill village	Greene	4 718	5 317	5 825
Cattaraugus village	Cattaraugus	1 200	1 200	1 258
Cayuga village	Cayuga	604	693	621
Cayuga Heights village	Tompkins	3 170	3 130	2 788
Cazenovia village	Madison	2 599	3 031	2 584
Cedarhurst village	Nassau	6 162	6 941	6 956
Celoron village	Chautauqua	1 405	1 456	1 507
Centereach (CDP)	Suffolk	30 136	9 427	8 524
Center Moriches (CDP)	Suffolk	5 703	3 802	2 52
Centerport (CDP)	Suffolk	6 576	...	...
Central Islip (CDP)	Suffolk	19 734	36 391	...
Central Square village	Oswego	1 418	1 298	93
Central Valley (CDP)	Orange	1 705	...	...
Centre Island village	Nassau	378	374	2
Champlain village	Clinton	1 410	1 426	1 5
Champlain Park (CDP)	Clinton	1 051	1 207	...
Chateaugay village	Franklin	869	976	1 0
Chatham village	Columbia	2 001	2 239	2 4
Chaumont village	Jefferson	620	567	...
Cheektowaga (CDP)	Erie	92 145	...	...
Cherry Creek village	Chautauqua	677	658	...
Cherry Valley village	Otsego	684	661	...
Chester village	Orange	1 910	1 627	1 4
Chittenango village	Madison	4 290	3 605	3
Churchville village	Monroe	1 399	1 065	1
Clarence Center (CDP)	Erie	1 300	1 332	...
Clark Mills (CDP)	Oneida	1 412	1 206	1
Claverack–Red Mills (CDP)	Columbia	1 217	...	...
Clayton village	Jefferson	1 816	1 970	1
Clayville village	Oneida	478	535	...
Cleveland village	Oswego	855	821	...
Clifton Knolls (CDP)	Saratoga	5 636	5 771	...
Clifton Springs village	Ontario	2 039	2 058	...
Clinton village	Oneida	2 107	2 271	...
Clintondale (CDP)	Ulster	1 193	...	...
Clyde village	Wayne	2 491	2 828	...
Cobleskill village	Schoharie	5 272	4 368	...
Cohocton village	Steuben	902	897	...
Cohoes city	Albany	18 144	18 653	...
Cold Brook village	Herkimer	402	413	...
Coldenham (CDP)	Orange	1 064	...	...
Colden Hill (CDP)	Orange	1 741	1 688	...
Cold Spring village	Putnam	2 161	2 083	...
Cold Spring Harbor (CDP)	Suffolk	5 336	5 450	...
Colonie village	Albany	8 869	8 701	...
Commack (CDP)	Suffolk	34 719	24 138	...
Congers (CDP)	Rockland	7 123	5 928	...
Constableville village	Lewis	330	347	...
Constantia (CDP)	Oswego	1 254	...	...
Cooperstown village	Otsego	2 342	2 403	...
Copenhagen village	Lewis	656	734	...
Copiague (CDP)	Suffolk	20 132	19 632	...
Coram (CDP)	Suffolk	24 752	...	...
Corfu village	Genesee	689	722	...
Corinth village	Saratoga	2 702	3 267	...
Corning city	Steuben	12 953	15 792	...
Cornwall on Hudson village	Orange	3 164	3 131	...
Cortland city	Cortland	20 138	19 621	...
Cortland West (CDP)	Cortland	1 149	...	...

Table 5. Population of Places: 1960 to 1980—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
Hillis (CDP)	Dutchess	2 591	2 750	...
Hillside Lake (CDP)	Dutchess	1 382	...	...
Hilton village	Monroe	4 151	2 440	1 334
Hobart village	Delaware	473	531	585
Holbrook (CDP)	Suffolk	24 382	...	...
Holcomb village	Ontario	952	778	460
Holland (CDP)	Erie	1 347	...	...
Holland Patent village	Oneida	534	556	538
Holley village	Orleans	1 882	1 868	1 788
Holtsville (CDP)	Suffolk	13 515	...	...
Homer village	Cortland	3 635	4 143	3 622
Honeoye Falls village	Monroe	2 410	2 248	2 143
Hoosick Falls village	Rensselaer	3 609	3 897	4 023
Hopewell Junction (CDP)	Dutchess	1 754	2 055	...
Hornell city	Steuben	10 234	12 144	13 907
Horseheads village	Chemung	7 348	7 989	7 207
Horseheads North (CDP)	Chemung	3 081	2 753	...
Houghton (CDP)	Allegany	1 604	1 620	...
Hudson city	Columbia	7 986	8 940	11 075
Hudson Falls village	Washington	7 419	7 917	7 752
Hunter village	Greene	511	238	457
Huntington (CDP)	Suffolk	21 727	12 601	11 255
Huntington Bay village	Suffolk	1 783	1 789	1 267
Huntington Station (CDP)	Suffolk	28 769	28 817	23 438
Hurley (CDP)	Ulster	4 892	4 081	...
Hyde Park (CDP)	Dutchess	2 550	2 805	1 979
Ilion village	Herkimer	9 450	9 808	10 199
Interlaken village	Seneca	685	733	780
Inwood (CDP)	Nassau	8 228	8 433	10 362
Irondequoit (CDP)	Monroe	57 648	...	...
Irvington village	Westchester	5 774	5 878	5 494
Island Park village	Nassau	4 847	5 396	3 846
Islip (CDP)	Suffolk	13 438	7 692	...
Islip Terrace (CDP)	Suffolk	5 588	...	...
Ithaca city	Tompkins	28 732	26 226	28 799
Jamesport (CDP)	Suffolk	1 069	...	...
Jamestown city	Chautauqua	35 775	39 795	41 818
Jamestown West (CDP)	Chautauqua	2 680	2 491	...
Jefferson Heights (CDP)	Greene	1 610	...	...
Jefferson Valley–Yorktown (CDP)	Westchester	13 380	9 008	...
Jeffersonville village	Sullivan	554	421	434
Jericho (CDP)	Nassau	12 739	14 010	10 795
Johnson City village	Broome	17 126	18 025	19 118
Johnstown city	Fulton	9 360	10 045	10 390
Jordan village	Onondaga	1 371	1 493	1 390
Keeseville village	Total	2 025	2 122	2 213
	Clinton (pt. in)	1 055	1 210	1 239
	Essex (pt. in)	970	912	974
Kenmore village	Erie	18 474	20 980	21 261
Kensington village	Nassau	1 132	1 402	1 166
Kerhonkson (CDP)	Ulster	1 646	1 243	...
Keuka Park (CDP)	Yates	1 153	...	...
Kinderhook village	Columbia	1 377	1 233	1 078
Kings Park (CDP)	Suffolk	16 131	5 555	4 949
Kings Point village	Nassau	5 234	5 614	5 410
Kingston city	Ulster	24 481	25 544	29 260
Kiryas Joel village	Orange	2 088	...	...
Lackawanna city	Erie	22 701	28 657	29 564
Lacona village	Oswego	582	556	556
Lake (CDP)	Orange	1 210	1 352	...
Lake Carmel (CDP)	Putnam	7 295	4 796	2 735
Lake Erie Beach (CDP)	Erie	4 625	3 467	2 117
Lake George village	Warren	1 047	1 046	1 026
Lake Grove village	Suffolk	9 692	8 133	...
Lake Katrine (CDP)	Ulster	2 011	1 092	1 149
Lake Luzerne–Hadley (CDP)	Total	1 988	...	...
	Saratoga (pt. in)	825	...	...
	Warren (pt. in)	1 163	...	...
Lake Placid village	Essex	2 490	2 731	2 998
Lake Ronkonkoma (CDP)	Suffolk	38 336	...	...
Lake Success village	Nassau	2 396	3 254	2 954
Lakeview (CDP)	Nassau	5 276	5 471	...
Lakewood village	Chautauqua	3 941	3 864	3 933
Lancaster village	Erie	13 056	13 365	12 254
Lansing village	Tompkins	3 039	...	...
Larchmont village	Westchester	6 308	7 203	6 789
Latham (CDP)	Albany	11 182	9 661	...
Lattingtown village	Nassau	1 749	1 773	1 461
Laurel Hollow village	Nassau	1 527	1 401	834
Laurens village	Otsego	276	320	291
Lawrence village	Nassau	6 175	6 566	5 907
Leicester village	Livingston	462	368	365
Le Roy village	Genesee	4 900	5 118	4 662
Levittown (CDP)	Nassau	57 045	65 440	65 276
Lewiston village	Niagara	3 326	3 292	3 320
Liberty village	Sullivan	4 293	4 514	4 704
Lima village	Livingston	2 025	1 686	1 366
Lime Lake–Machias (CDP)	Cattaraugus	1 191	...	...
Limestone village	Cattaraugus	466	535	539
Lincoln Park (CDP)	Ulster	2 664	2 851	2 707
Lindenhurst village	Suffolk	26 919	28 359	20 905
Lisle village	Broome	357	336	335
Little Falls city	Herkimer	6 156	7 629	8 935
Little Valley village	Cattaraugus	1 203	1 340	1 244
Liverpool village	Onondaga	2 849	3 307	3 487
Livingston Manor (CDP)	Sullivan	1 436	1 522	2 080
Livonia village	Livingston	1 238	1 278	946
Lloyd Harbor village	Suffolk	3 405	3 371	2 521
Lockport city	Niagara	24 844	25 399	26 443
Locust Grove (CDP)	Nassau	9 670	11 626	11 558
Lodi village	Seneca	334	353	396
Long Beach city	Nassau	34 073	33 127	26 473
Lorenz Park (CDP)	Columbia	1 720	1 995	...
Loudonville (CDP)	Albany	11 480	9 299	...
Lowville village	Lewis	3 364	3 671	3 616
Lynbrook village	Nassau	20 424	23 151	19 881
Lyncourt (CDP)	Onondaga	5 129	...	...
Lyndonville village	Orleans	916	888	755
Lyons village	Wayne	4 160	4 496	4 673
Lyons Falls village	Lewis	755	852	887
Macedon village	Wayne	1 400	1 168	645
McGraw village	Cortland	1 188	1 319	1 276
Madison village	Madison	396	386	327
Mahopac (CDP)	Putnam	7 681	5 265	1 337
Malone village	Franklin	7 668	8 048	8 737
Malverne village	Nassau	9 262	10 036	9 968
Mamaroneck village	Westchester	17 616	18 909	17 673
Manchester village	Ontario	1 698	1 305	1 344
Manhasset (CDP)	Nassau	8 485	8 541	...
Manlius village	Onondaga	5 241	4 295	1 997
Mannsville village	Jefferson	431	494	446
Manorhaven village	Nassau	5 384	5 488	3 566
Marathon village	Cortland	1 046	1 053	1 079
Marcellus village	Onondaga	1 870	2 017	1 697
Margaretville village	Delaware	755	816	833
Marion (CDP)	Wayne	1 080	...	...
Marlboro (CDP)	Ulster	2 275	1 580	1 733
Massapequa (CDP)	Nassau	24 454	26 821	32 900
Massapequa Park village	Nassau	19 779	22 112	19 904
Massena village	St. Lawrence	12 851	14 042	15 478
Mastic (CDP)	Suffolk	10 413	...	...
Mastic Beach (CDP)	Suffolk	8 318	4 870	3 035
Mattenecock village	Nassau	985	841	824
Mattituck (CDP)	Suffolk	3 923	1 995	1 274
Marrydale (CDP)	Onondaga	7 511	8 292	...
Maybrook village	Orange	2 007	1 536	1 348
Mayfield village	Fulton	944	981	818
Mayville village	Chautauqua	1 626	1 567	1 619
Mechanicville city	Saratoga	5 500	6 247	6 831
Medford (CDP)	Suffolk	20 418	...	...
Medina village	Orleans	6 392	6 415	6 681
Melrose Park (CDP)	Cayuga	2 171	2 189	2 058
Melville (CDP)	Suffolk	8 139	6 641	...
Menands village	Albany	4 012	3 449	2 314
Meridian village	Cayuga	344	369	379
Merrick (CDP)	Nassau	24 478	25 904	18 789
Merrewold Lake (CDP)	Orange	3 661	2 564	...
Mexico village	Oswego	1 621	1 555	1 465
Middleburgh village	Schoharie	1 358	1 410	1 317
Middle Hope (CDP)	Orange	3 229	2 327	...
Middle Island (CDP)	Suffolk	5 703	...	...
Middleport village	Niagara	1 995	2 132	1 882
Middletown city	Orange	21 454	22 607	23 475
Middleville village	Herkimer	647	725	648
Milford village	Otsego	514	527	548
Millbrook village	Dutchess	1 343	1 735	1 717
Miller Place (CDP)	Suffolk	7 877	...	...
Millerton village	Dutchess	1 013	1 042	1 027
Mill Neck village	Nassau	959	982	701
Millport village	Chemung	440	480	425
Milton (CDP)	Saratoga	2 063	1 861	...
Milton (CDP)	Ulster	1 253	...	...
Mineola village	Nassau	20 757	21 845	20 587
Minetta (CDP)	Oswego	1 629	...	...
Mineville–Witherbee (CDP)	Essex	1 925	1 967	...
Minoa village	Onondaga	3 640	2 245	1 838
Mohawk village	Herkimer	2 956	3 301	3 533
Monroe village	Orange	5 996	4 439	3 323
Monroe Southwest (CDP)	Orange	1 267	...	...
Monsey (CDP)	Rockland	12 380	8 797	...
Montauk (CDP)	Suffolk	2 828	...	...
Montgomery village	Orange	2 316	1 533	1 312
Monticello village	Sullivan	6 306	5 991	5 222
Montour Falls village	Schuyler	1 791	1 534	1 533
Mooers village	Clinton	549	536	543
Moravia village	Cayuga	1 582	1 642	1 575
Morris village	Otsego	681	675	673
Morrisonville (CDP)	Clinton	1 721	1 276	...
Morristown village	St. Lawrence	461	532	54
Morrisville village	Madison	2 707	2 296	1 30
Mountain Lodge (CDP)	Orange	1 230	...	...
Mount Kisco village	Westchester	8 025	8 172	6 80
Mount Morris village	Livingston	3 039	3 417	3 25
Mount Sinai (CDP)	Suffolk	6 591	...	...
Mount Vernon city	Westchester	66 713	72 778	76 01
Munnsville village	Madison	499	435	39
Munsey Park village	Nassau	2 806	2 980	2 8
Munsons Corners (CDP)	Cortland	2 478	2 076	...
Muttontown village	Nassau	2 725	2 081	1 2
Myers Corner (CDP)	Dutchess	5 180	2 826	...
Nanuet (CDP)	Rockland	12 578	10 447	...
Napanoch (CDP)	Ulster	1 260	...	...
Naples village	Ontario	1 225	1 324	1 2
Nassau village	Rensselaer	1 285	1 466	1 2

REFERENCE 12

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

MEMORANDUM

FROM Donald Campbell, P.E. **DATE** April 16, 1981

TO Robert Mitrey, NYSDEC

SUBJECT Disposal of Sludge at City of Lackawanna Landfill (15S06)

This report will address the findings of an inspection conducted by our Department to observe handling and disposal of digested and dewatered sludge from the City of Lackawanna STP and transported to the City of Lackawanna Landfill located off Abbott Road in the City of Lackawanna. Hauling is done by Niagara Sanitation vehicles (9A-065).

The inspection date was April 15, 1981.

As observed and correlated with the inspector from Nussbaumer and Clarke the operation is complete. All dewatering operations at the STP have been accomplished. The landfilling of sludge has been completed. The hauling containers have been removed from the site and loading area.

The sludge had no visible free water and had the consistency and appearance of Peat Moss.

The containers were in conformance with the permit as issued. No leakage was observed.

Spillage is virtually impossible due to the consistency of the sludge.

The sludge was thoroughly mixed with the soil stockpile.

Approximately 30% of the job was complete. At the time of the last inspection date March 2, 1981. A log book of incoming containers was being kept by an on site attendant.

The access road was well maintained.

Attached are your copies of the inspection report for the pertinent date.

Note: The area on top of the landfilled sludge appeared rough & uneven and should be graded and made fairly smooth to assure proper runoff of surface water to prevent leachate from being developed due to ponding.

DC:aj
Attach.

cc: R. Miles, Niagara Sanitation Inc.
A. Collareno, City of Lackawanna
K. Selden, Nussbaumer & Clarke Inc.

REGION 9

-15-1

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT

FACILITY INSPECTION REPORT

1 TRANS.TYPE 1 ☐ Delete 2 ☒ Add | 2 FACILITY NO. 7 | 8 DATE 13 | 14 TIME 17
15506 | 07/15/91 | 1430

20 CARD 21 TYPE 1 1 | 22 INSPECTOR'S NAME 36 | 37 38.
D. CAMPBELL

20 CARD 21 TYPE 1 2 | 22 27

REMARKS 72
MINOR VIOLATIONS OBSERVED

LEACHATE 57 59
1. Leachate is entering surface water.
2. Leachate is known to be contravening groundwater standards.
3. Refuse is being placed into water.

BURNING 55 56
4. Refuse is burning without permit or not under permit conditions.
5. There is evidence of unapproved previous burning.

COVER 52 54
6. Previous days refuse is not covered.
7. Refuse is protruding through daily, intermediate or final cover.
8. Intermediate or final cover is not in place or improperly applied.

GRADING 49 51
9. Depressions, ponding, cracked cover, or slopes steeper than 3 to 1 exist.
10. Vegetative cover is missing or inadequate on completed areas.
11. Soil erosion or other drainage problems exist.

SEPARATION DISTANCES 46 48
12. Refuse is closer than 50 feet to site boundaries.
13. Refuse is being placed less than 5 feet above groundwater or bedrock.
14. Refuse is being placed too close to surface water.

NUISANCE CONDITIONS 41 45
15. Odors are detectable off site.
16. Blowing dust or dirt is a nuisance.
17. Papers are uncontrolled or are blowing off-site.
18. Methane gas is known to be leaving the site.
19. Noise is a nuisance off-site.

OPERATION CONTROL 35 40
20. Operation Permit conditions are being violated. (List violations)
21. Refuse is not sufficiently confined or controlled.
22. Refuse is spread in layers thicker than 2 feet.
23. Refuse is not compacted or compacted insufficiently.
24. The working face height is greater than 10 feet.
25. Equipment on the site is not adequate for proper operation.

SAFETY AND HEALTH 32 34
26. Salvaging is uncontrolled or is creating a nuisance.
27. Rodents, insects, birds, or other vectors are not controlled.
28. Unsafe conditions or equipment exist. (List items)

ACCESS CONTROL 28 31
29. Access to the site is improper, unsafe, or inadequately controlled.
30. The site is open without an attendant.
31. Information about the site is not posted. (e.g., hours of operation)
32. Access to the operating area is poor or unsafe.

OTHER
33. Uncontrolled leachate is visible on, or near the site.
34. The quality of cover material is inadequate.
35. The working face is steeper than a 3 to 1 slope.
36. Monitoring wells are not operative.
37. Unapproved wastes have been deposited since last inspection.
38. Operator is unfamiliar with wite boundaries, operation plan or permit

MARK BOXES WITH "X" ONLY IF ANSWER IS YES

Central Office Copy

FACILITY COPY

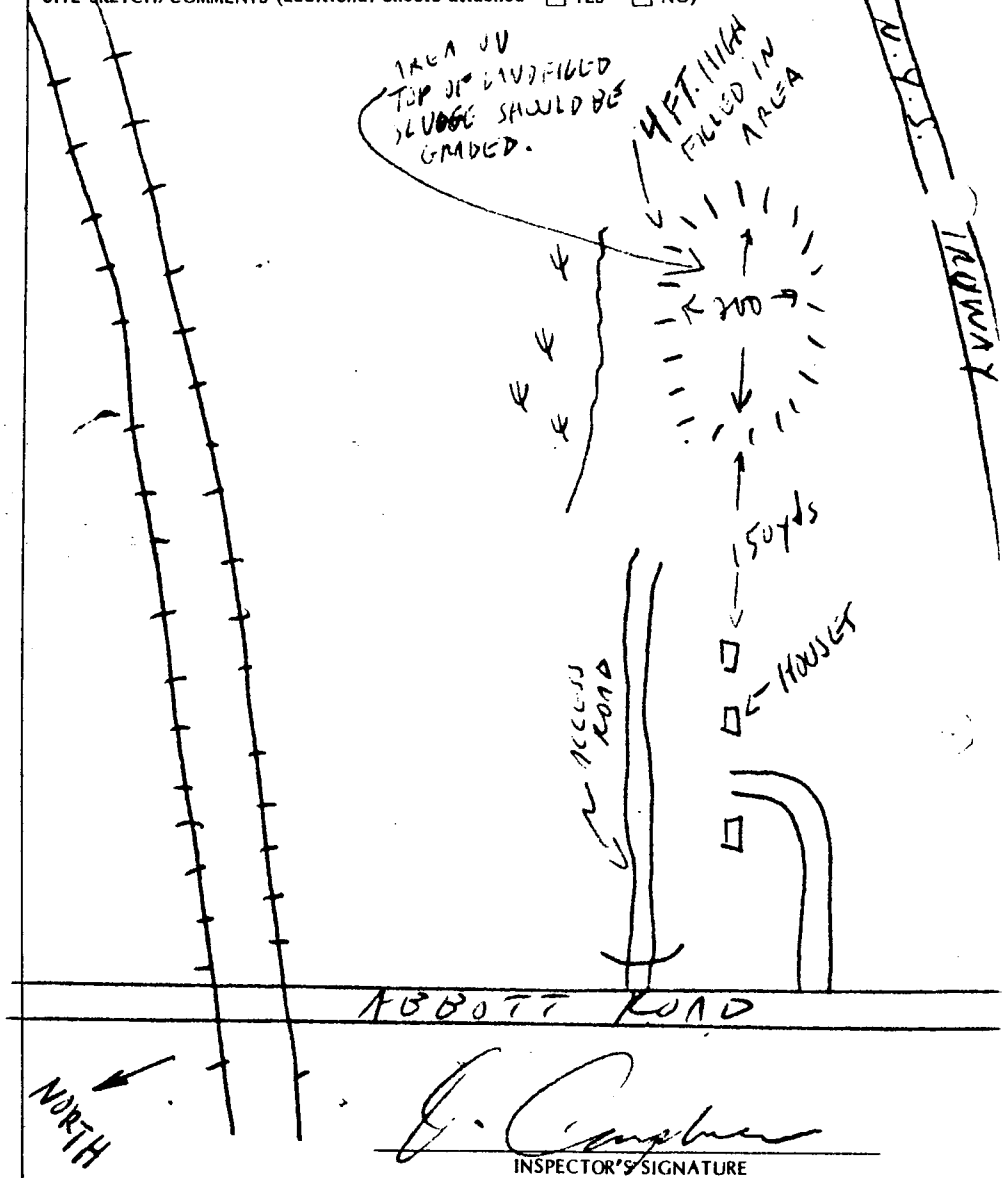
FACILITY NAME: CITY OF LACKAWANNA

LOCATION: ABBOTT RD NEAR MAJESTIC STREET

PERSONS INTERVIEWED & TITLES

none

SITE SKETCH/COMMENTS (additional sheets attached ☐ YES ☐ NO)



INSPECTOR'S SIGNATURE

REFERENCE 13

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

MEMORANDUM

TO Robert Mitrey, NYSDEC DATE August 4, 1980

FROM Cameron O'Connor

SUBJECT City of Lackawanna Disposal Area
Abbott Road 15S06

In response to your July 17, 1980 request, the writer performed a July 22, 1980 field inspection of the above site to determine the extent of freshwater wetlands in the area.

Mr. Ciminelli of Ciminelli Construction Company, Inc. was to accompany the writer during the inspection however was unable to keep the appointment.

The wetland appears to be approximately 10+ acres in size consisting of mostly cattails and open water with a few willows (see site sketch). The wetland recieves water from two streams which enter on the west and east side of the wetland and numerous drainage pathways from the Thruway. Numerous ducks were observed using the pond on the day of the inspection.

The landfill operation has disturbed several upland areas adjacent to the wetland and has started encroaching into the open water pond.

Sludge incinerator ash, and earth have been bull dozed into the pond on its western edge. This area of the wetland is essentially destroyed.

As indicated in the site sketch there is upland terrion located on the southern portion of the property.

As the result of the inspection it is the writer's opinion that the following action should be taken:

1) The Division of Regulatory Affairs should be contacted so that a Request for a Freshwater Wetland Determination can be made to Fish and Wildlife. The Fish and Wildlife people would be able to make a far more accurate determination of the wetlands biogiography, acreage and the wetland/upland boundaries.

Cameron O'Connor

-continued-

2) If it is determined that the wetland can be used as a landfill, the concerns (i.e. 5 foot separation from groundwater, drainage etc.) mentioned in this Department's July 3, 1980 memorandum should be addressed by the landfill operator prior to further disposal into the wetland area.

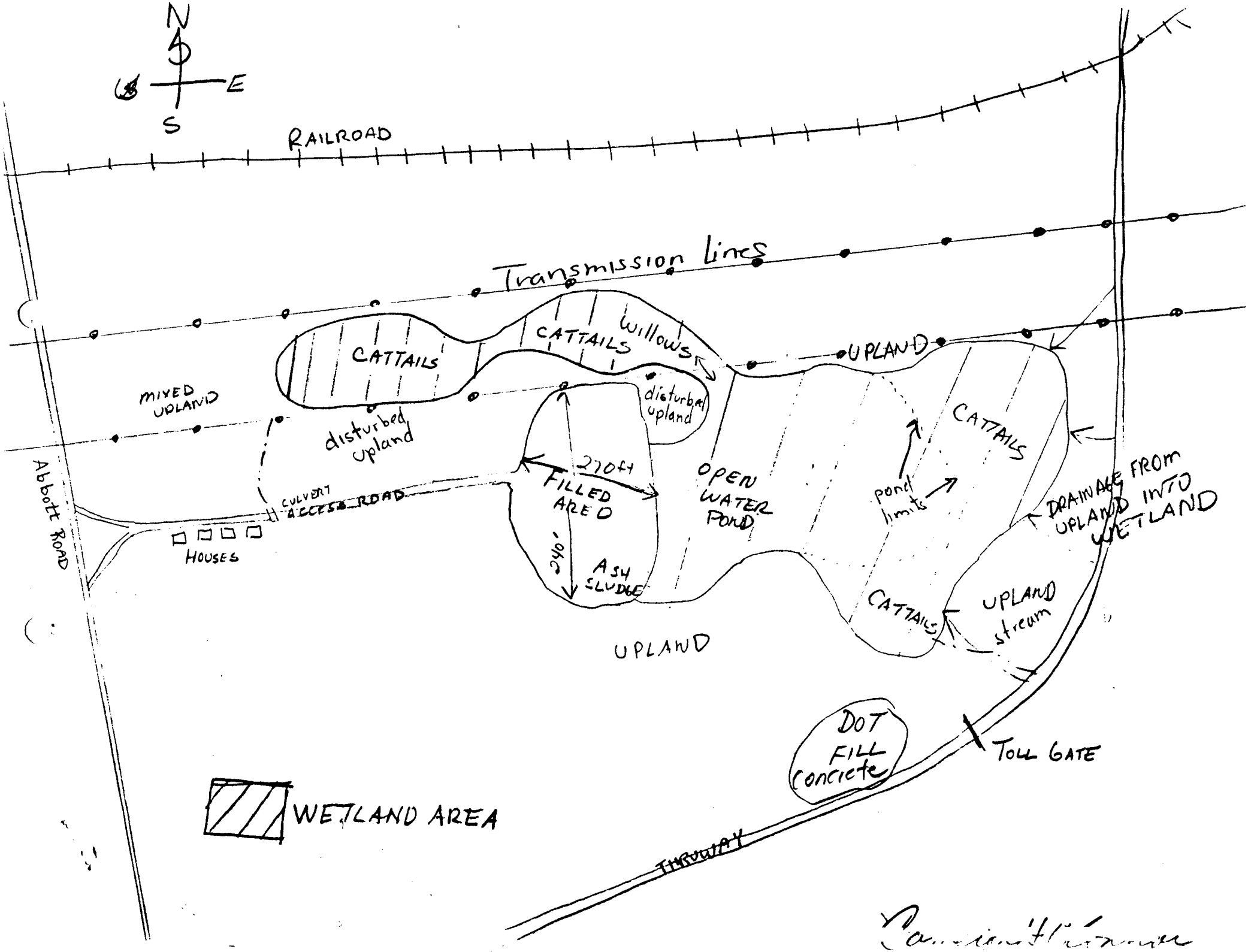
A change in direction of the filling operation to the upland areas would be the most desirable coarse of action.

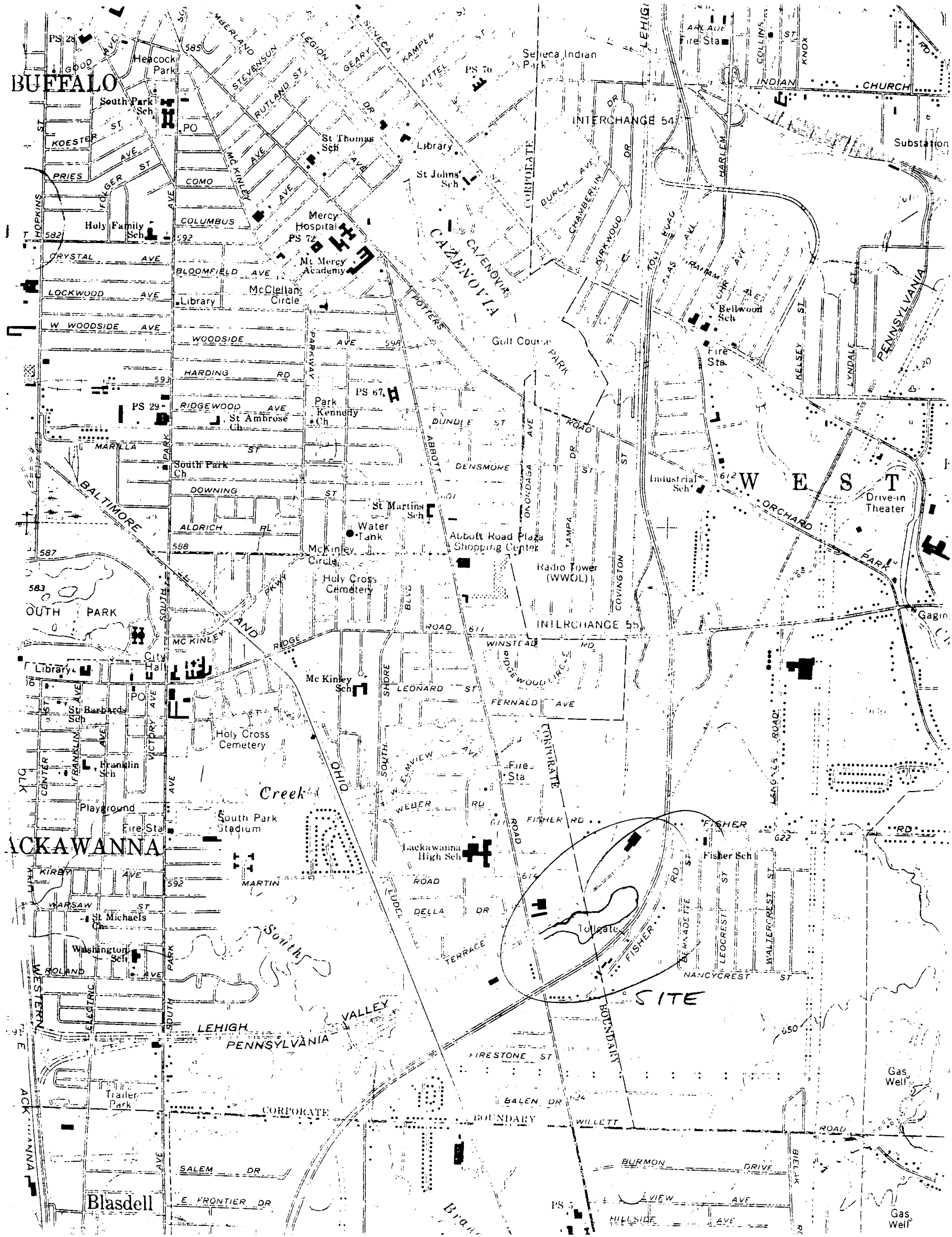
Please note (site sketch) that the Thruway Authority is also dumping concrete adjacent to the wetland.

If you have any questions, call at 846-6148.

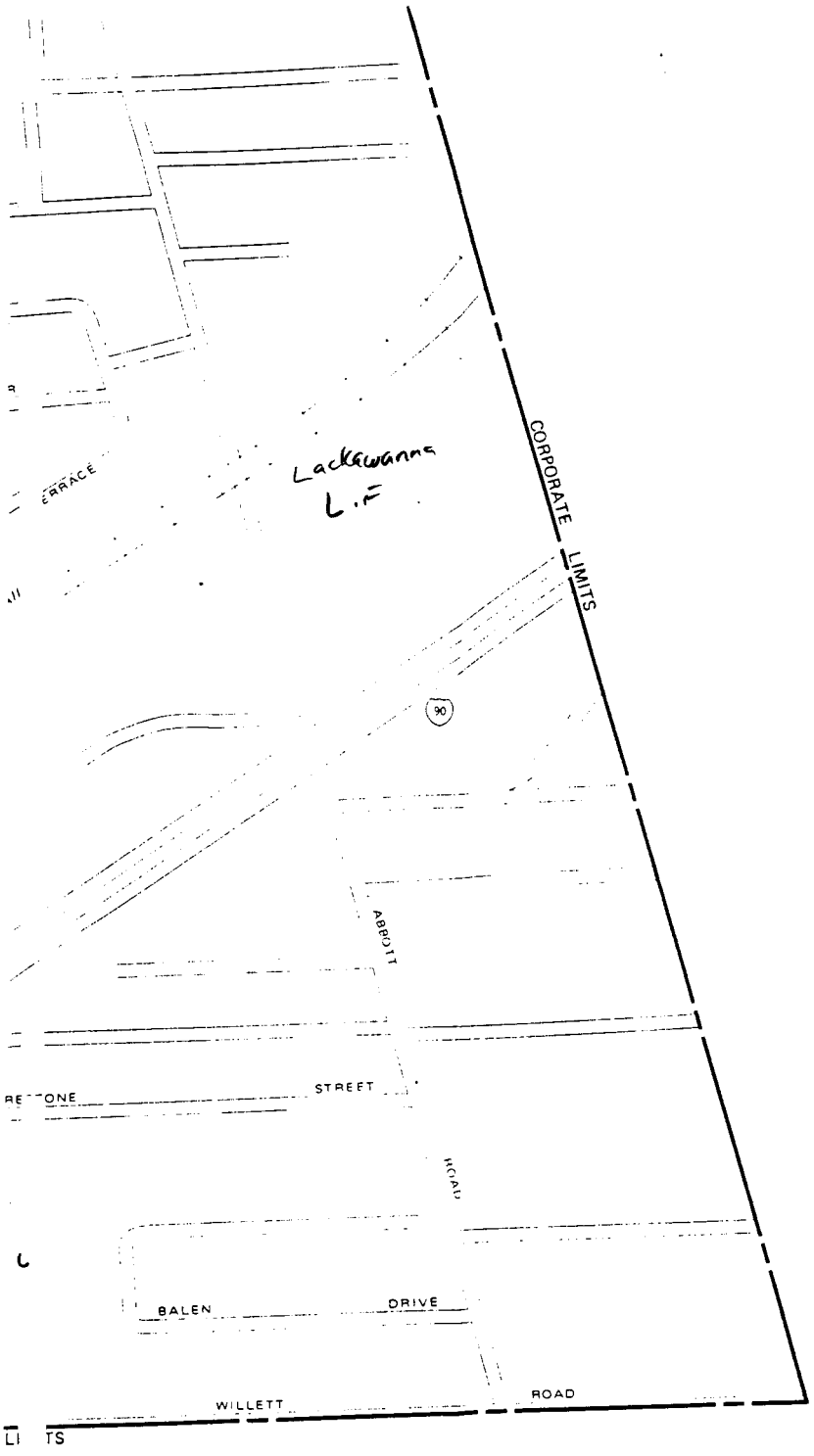
COC:ao
Attach.

cc: D. Campbell


N
E
S
RAILROAD
Transmission Lines
CATTAILS
CATTAILS
Willows
UPLAND
MIXED UPLAND
disturbed upland
disturbed upland
270 ft
FILLED AREA
OPEN WATER POND
CATTAILS
pond limits
DRAINAGE FROM UPLAND INTO WETLAND
Abbott ROAD
CULVERT
ACCESS ROAD
HOUSES
240'
ASH SLUDGE
CATTAILS
UPLAND stream
UPLAND
DOT FILL concrete
TOLL GATE
THROUGHWAY
WETLAND AREA


BUFFALO
PS 28
Heacock Park
South Park Sch
PO
St Thomas Sch
Library
St Johns Sch
Seneca Indian Park
PS 70
INTERCHANGE 54
Fire Sta
Substation
Holy Family Sch
Mercy Hospital
PS 72
Mt Mercy Academy
McClellan Circle
Library
CAZENOVIA
Golf Course
PARK
Bellwood Sch
Fire Sta
PS 67
Park Kennedy Ch
PS 29
St Ambrose Ch
South Park Ch
Industrial Sch
W E S T
Drive-in Theater
St Martins Sch
Water Tank
Abbott Road Plaza Shopping Center
Radio Tower (WWOL)
McKinley Circle
Holy Cross Cemetery
SOUTH PARK
INTERCHANGE 55
Library
City Hall
PO
Mc Kinley Sch
St Barbards Sch
Holy Cross Cemetery
Franklin Sch
Fire Sta
Creek
Playground
Fire Sta
South Park Stadium
LACKAWANNA
Lackawanna High Sch
Fisher Sch
Tollgate
SITE
St Michaels Ch
Washington Sch
South
LEHIGH VALLEY
PENNSYLVANIA
CORPORATE BOUNDARY
Trailer Park
Gas Well
Blasdell
PS 5
Gas Well

REFERENCE 14



INITIAL IDENTIFICATION:
JUNE 28, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
AUGUST 13, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 2, 1980

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620, or (800) 424-8872.

N

APPROXIMATE SCALE
500 0 500 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
LACKAWANNA, NEW YORK
ERIE COUNTY

PANEL 2 OF 2
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360247 0002 B

EFFECTIVE DATE:
JULY 2, 1980

U.S. DEPARTMENT OF HOUSING

REFERENCE 15

SHEET ___ OF ___

DAILY FIELD REPORT

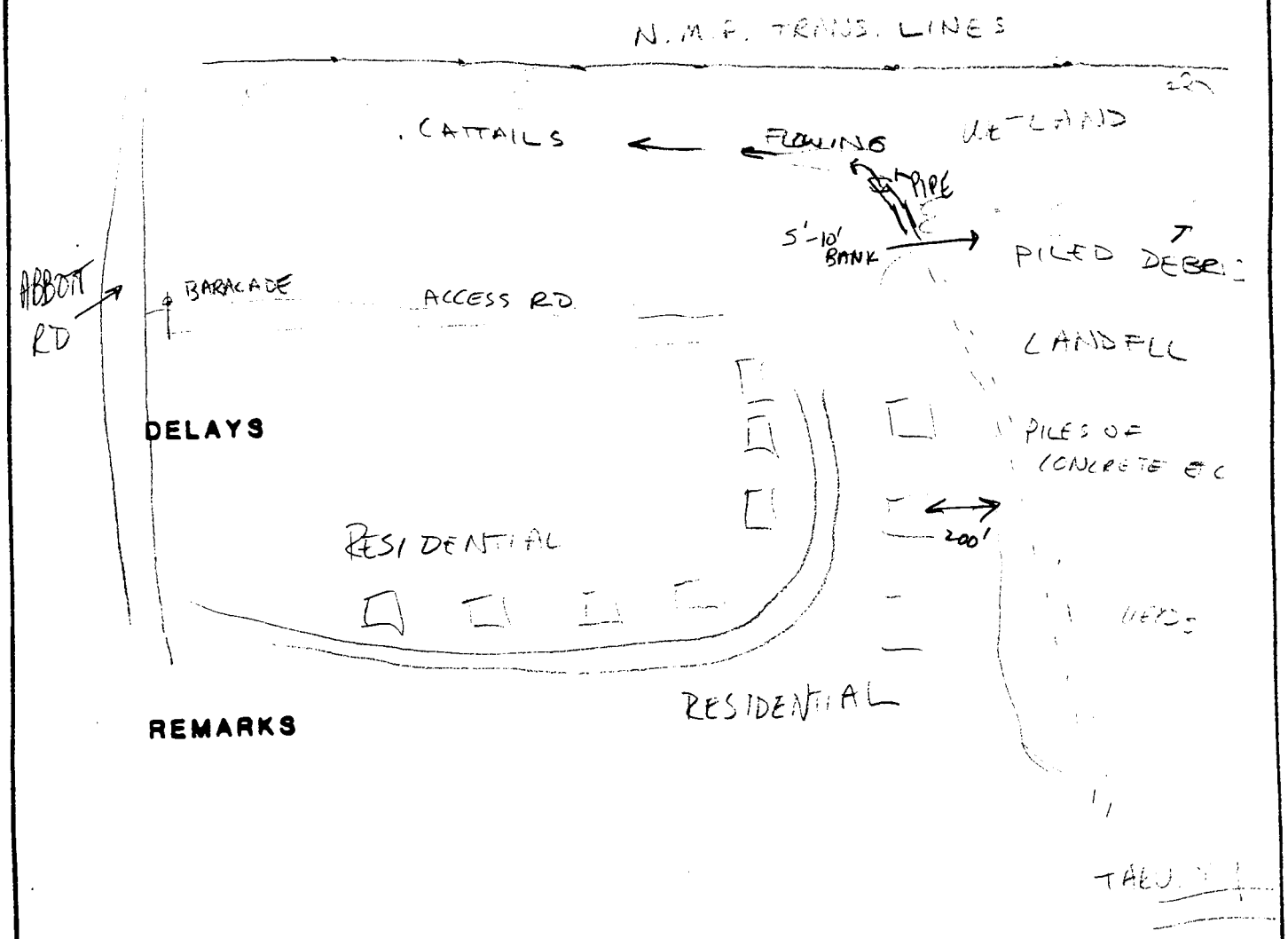
PROJECT NO. SC280411 **LOCATION** LACKAWANNA CITY L.F

DATE 1/24/86 **REPORT NO.** _____

WEATHER CONDITIONS PRTLY CLOUDY 28° =

REPORT

ACTIVITIES MET NKK KLIACH AT DPW DRIVE IN TO SITE AREA NEXT TO RESIDENTIAL SECTION AND WETLAND KLIACH STATED NOTHING BUT DEMOLITION MATERIAL AND INCINERATOR RESIDUE



DELAYS

REMARKS

REFERENCE 16

15 (12/75)

ECDEP FILE

15 S 06

New York State Department of Environmental Conservation

MEMORANDUM

TO: P. Eismann
FROM: R. Mitrey
SUBJECT: Wetlands Determination - Lackawanna Sanitary Landfill

DATE: October 16, 1980

This is to request your section to inspect the above subject landfill located on Abbott Road in the City of Lackawanna for a wetlands determination.

The Lackawanna Sewage Treatment Plant is undergoing renovation, and the consultants are requesting permission to haul sludge from the digesters to this landfill. At this time it is unknown as to the quantity and quality of this sludge, however, it is requested that your section inspect this site for wetlands determination as soon as possible.

RJM:las

cc: C. Janik
R. Speed
ECDEP

REFERENCE 17

FILE 15506

New York State Department of Environmental Conservation
584 Delaware Avenue, Buffalo, New York 14202

Robert F. Flack
XXXXXXXXXX
Commissioner

January 4, 1980

Anthony Collareno, Chief Engineer
Department of Public Works
City of Lackawanna
City Hall, Ridge Road, Room 311
Lackawanna, New York 14218

Re: Hauling of Drying Bed Sludge to Lackawanna SLF

Dear Mr. Collareno:

Based on our telecon of today, approval is hereby given to have your contractor haul the sludge presently deposited in the drying beds of the Lackawanna Sewage Treatment Plant to the Lackawanna Sanitary Landfill located on Abbott Road. This approval will be valid for one year from the above date.

In addition, this sludge must be mixed in with the existing earth on site. Also, the contractor who hauls the sludge must be registered with this Department prior to any hauling.

Should you have any questions in regards to the above, feel free to contact me at 716/842-3837.

Very truly yours,

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

RJM:las

REFERENCE 18

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

MEMORANDUM

TO Robert Mitrey, NYSDEC DATE July 3, 1980

FROM Cameron O'Connor

SUBJECT City of Lackawanna Ash Disposal Site (15S06)

Attached are the following material pertinent to a July 1, 1980 field inspection.

1) Facility Inspection Report

2) Letter to the City of Lackawanna

As per the site operator the site is being prepared for the disposal of ash and sludge disposal.

The site contains an approximately 9+ acre freshwater wetland and pond which will be filled in. The pond is probably representative of the groundwater elevation.

What provisions have been made, if any, to ensure a 5 foot separation between the bottom of the landfill and the groundwater table?

Is the City required to fill in the entire pond, allow time for settling, and then required to fill with more earth?

This area is a good retention basin for runoff from the Thruway and surrounding area. Drainage problems are foreseen.

The incinerator ash and residue as well as the digested sludge are high in metals. As this area is essentially a swamp with saturated soil, leachate and other quality problems will probably occur unless provisions are made to ensure adequate separation of water from landfill material.

Operational technique clarification is recommended at this site.

Please contact me to discuss this matter.

COC:ao
Attach.

COUNTY OF ERIE

EDWARD J. RUTKOWSKI
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT AND PLANNING
95 Franklin Street - Buffalo, New York 14202

JOAN E. LORING
COMMISSIONER
(716) 846-6725

DIVISION OF ENVIRONMENTAL CONTROL
ANTHONY T. VOELL, P.E.
DEPUTY COMMISSIONER
(716) 846-6370

July 3, 1980

Mr. Anthony Collareno, Chief Engineer
City of Lackawanna Department of
Public Works
City Hall, Ridge Road
Lackawanna, New York 14218

Re: City of Lackawanna
Ash Disposal Site
Abbott Road

Dear Mr. Collareno:

On July 1, 1980, the Department performed a field inspection of the above site. Enclosed is a copy of the field inspection report.

No problems were noted on the day of the inspection which will require immediate attention. No evidence of recent disposal were noted.

Our files show that you have been given permission to dispose of dried sludge at this location. Please notify this office when the sludge disposal commenses so that we may monitor the initial disposal activity.

If you have any question please do not hesitate to contact Mr. Cameron O'Connor at 846-6148.

Very truly yours,

Lawrence G. Clare, P.E.
Asst. Deputy Commissioner
Environmental Control

LGC:COC:ao
Enc.

cc: R. Mitrey (NYSDEC)

REGION 9

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT

FACILITY INSPECTION REPORT

1 TRANS. TYPE: 1 ☐ Delete 2 ☐ Add 3 ☐ Change | 2 FACILITY NO. 7: 15506 | 8 DATE 13: 07 4 80 | 14 TIME 17: 0130

20 CARD TYPE 21: 1 | 22 INSPECTOR'S NAME 36: O'Connor | 37: 1 | 38 REMARKS 72: Clarification of Quality Control needed

LEACHATE
- 59 1. Leachate is entering surface water.
- 2. Leachate is known to be contravening groundwater standards.
- 3. Refuse is being placed into water.

BURNING
- 55 56 4. Refuse is burning without permit or not under permit conditions.
- 5. There is evidence of unapproved previous burning.

COVER
- 54 6. Previous days refuse is not covered.
- 7. Refuse is protruding through daily, intermediate or final cover.
- 52 8. Intermediate or final cover is not in place or improperly applied.

GRADING
- 51 9. Depressions, ponding, cracked cover, or slopes steeper than 3 to 1 exist.
- 10. Vegetative cover is missing or inadequate on completed areas.
- 49 11. Soil erosion or other drainage problems exist.

SEPARATION DISTANCES
- 48 12. Refuse is closer than 50 feet to site boundaries.
- 13. Refuse is being placed less than 5 feet above groundwater or bedrock.
- 14. Refuse is being placed too close to surface water.

NUISANCE CONDITIONS
- 45 15. Odors are detectable off site.
- 16. Blowing dust or dirt is a nuisance.
- 17. Papers are uncontrolled or are blowing off-site.
- 18. Methane gas is known to be leaving the site.
- 41 19. Noise is a nuisance off-site.

OPERATION CONTROL
- 40 20. Operation Permit conditions are being violated. (List violations)
- 21. Refuse is not sufficiently confined or controlled.
- 22. Refuse is spread in layers thicker than 2 feet.
- 23. Refuse is not compacted or compacted insufficiently.
- 24. The working face height is greater than 10 feet.
- 35 25. Equipment on the site is not adequate for proper operation.

SAFETY AND HEALTH
- 34 26. Salvaging is uncontrolled or is creating a nuisance.
- 27. Rodents, insects, birds, or other vectors are not controlled.
- 32 28. Unsafe conditions or equipment exist. (List items)

ACCESS CONTROL
- 31 29. Access to the site is improper, unsafe, or inadequately controlled.
- 30. The site is open without an attendant.
- 31. Information about the site is not posted. (e.g., hours of operation)
- 28 32. Access to the operating area is poor or unsafe.

OTHER
- 27 33. Uncontrolled leachate is visible on, or near the site.
- 34. The quality of cover material is inadequate.
- 35. The working face is steeper than a 3 to 1 slope.
- 36. Monitoring wells are not operative.
- 37. Unapproved wastes have been deposited since last inspection.
- 22 38. Operator is unfamiliar with site boundaries, operation plan or permit conditions.

20 CARD TYPE 21: 2

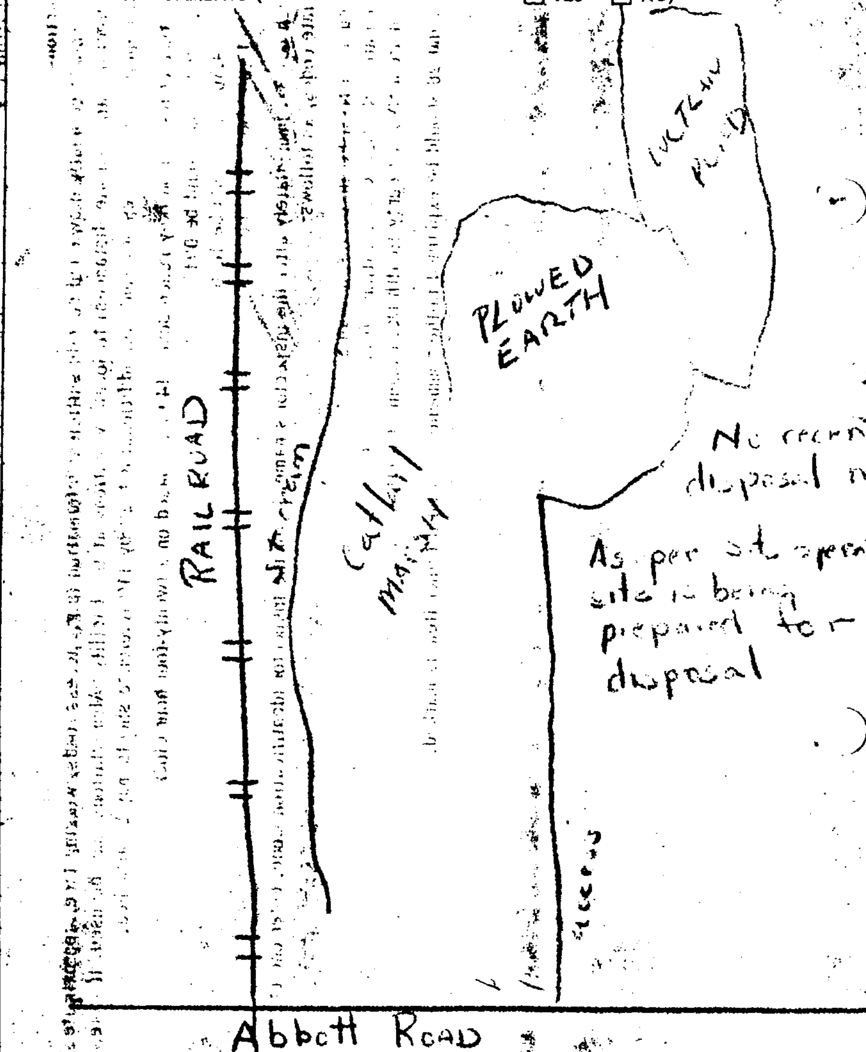
MARK BOXES WITH "X" ONLY IF ANSWER IS YES
INSPECTORS COPY

FACILITY NAME: City of Lackawanna Sanitary Landfill

LOCATION: Abbott Mays Terminal

PERSONS INTERVIEWED & TITLES: Tony LaRusso - site operator

SITE SKETCH/COMMENTS (additional sheets attached ☐ YES ☐ NO)



2A

INSPECTOR'S SIGNATURE

REFERENCE 19

AREA CODE (716) 835-8282

FRANK L. CIMINELLI
Construction Company, Inc.

135 MANHATTAN AVENUE • BUFFALO, NEW YORK 14215

79-122

November 17, 1980

N.Y.S.D.E.C.
Division of Regulatory Affairs
600 Delaware Avenue
Buffalo, New York 14202

Attention: Mr. Steven J. Doleski

Re: City of Lackawanna
Sewage Treatment Plant Modifications
DEC/EPA C36-852-02

Gentlemen:

This office is in the process of applying for a permit to allow the disposal of treated sludge on the City of Lackawanna landfill site located on Abbott Road. It is our understanding that your Mr. Steven Sanford has inspected the site and found no regulated wetland area due to the small size of the lot.

We respectfully request Mr. Sanford contact the writer to arrange a meeting of interested parties at the landfill site. A crew will be provided by this office to assist in staking out the wetland area. Once a determination has been made of wetland boundries, the intended disposal area can be established. This area would be at an agreed upon distance from the wetland area.

We would appreciate your prompt attention to this matter as an earth berm has to be built to contain the disposal area and, with winter fast approaching, it is desirable to have this operation completed before frost sets in.

Very truly yours,

C. J. Klemp
Project Manager

RECEIVED
NOV 17 1980
NUSSBAUMER & CLARKE

li

c: Weisberger
Selden

REFERENCE 20

Nussbaumer & Clarke, Inc.
Consulting Engineers Surveyors
310 Delaware Avenue Buffalo, New York 14202
(716) 853-7582

DANIEL J. HURLEY, Chairman
VITO J. CARUSO, President
RICHARD E. VANDERBROOK, Vice-President
WALTER E. ROEDER, Secretary-Treasurer

SIEGFRIED BARBASCH, Chief Engineer
RAYMOND D. SULLIVAN, Controller

OSWEGO OFFICE
P.O. Box 162
Oswego, N.Y. 13126
(315) 342-3010

15506

November 19, 1980

Re: City of Lackawanna, New York
Sewage Treatment Plant
EPA/DEC #C-36-852-02
NCI File No. 79-122

CITY OF LACKAWANNA

Mr. Robert Mitrey, P.E.
New York State Department of
Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202

Dear Mr. Mitrey:

On behalf of Mr. C. J. Klemp of the Frank L. Ciminelli Construction Company, Inc., and myself, I would like to take this opportunity to thank you and your staff for meeting with us on November 14, 1980 to discuss the disposal of digested sludge at the Lackawanna Landfill Site on Ridge Road.

The following plan of action is provided for your review and comment:

The contents of the digester (58,000 c.f. capacity) are to be dewatered by the "Mobile LRS Process" to a minimum of 20% TSS. The liquid fraction will be returned to the head of the primary settling tanks at a rate not to interfere with their proper operation. Assuming that the average conncentration of the digester contents is 10% TSS, the volume of sludge cake will be 58,000 c.f. x 10%/20% = 29,000 c.f. The dewatering operation should begin in January 1981 and has a duration of fifteen (15) working days on a 24 hr/day, 7 day/week basis.

The sludge will be disposed of at the Lackawanna Landfill Site on Abbott Road. The sludge disposal site shall not be within the wetland boundary, to be determined by the New York State Department of Environmental Conservation (see enclosed letter of November 17,1980). An area of about .83 acres will be surrounded by a five foot high earthen berm. Assuming a one foot free board, the effective volume would be about 145,000 c.f. The berm will act to reduce the flow of storm runoff from the landfilled sludge to the ponds and wetlands. A six foot deep test pit dug at this site on July 9, 1980 did not indicate the presence of ground water.

The maximum ratio of sludge cake to total landfilled material will be 20%; the other 80% will be excavated material from the sewage treatment plant construction site. The total volume of landfilled material is estimated to be 29,000 c.f. x $\frac{100\%}{20\%}$ = 145,000 c.f.

The sludge will be trucked from the treatment plant to the landfill site by Niagara Sanitation Company, Inc., or Williams Trucking.

Should you have any questions or comments concerning this matter, please do not hestiate to contact me.

Yours truly,

NUSSBAUMER & CLARKE, INC.

Steve Weisberger, P.E.

mp

Encl.

c: Mr. Michael Snider/encl.
Mr. Donald Campbell/encl.
Mr. C. J. Klemp
Mr. Alex Petroski/encl.
Mr. Thaddeus J. Pieczonka/encl.
Mr. Paul Pieczonka/encl.
Mr. Anthony Collareno/encl.
Mr. Joseph Cardinale/encl.

REFERENCE 21

New York State Department of Environmental Conservation

600 Delaware Avenue, Buffalo, New York 14202

Robert F. Flacke
Commissioner

February 20, 1981

Mr. Anthony Collareno, Chief Engineer
City of Lackawanna Department of
Public Works
City Hall - Room 311
Ridge Road
Lackawanna, New York 14218

Re: Lackawanna STP Digester Sludge Disposal

Dear Mr. Collareno:

Permission is hereby granted to dispose of the above referenced waste at your permitted sanitary landfill located on Abbott Road in the City of Lackawanna. Only digested sludge from the cleaning digester of the above referenced facility, dewatered to a minimum solids concentration of 20%, may be deposited at the sanitary landfill. This sludge must be depostied only in the 5' high bermed area within the landfill. The sludge must be mixed with clean earthen material in a ratio of one part sludge to four parts earth, immediately upon sludge being deposited at the landfill. All snow must be removed from the depositing area prior to any dumping of sludge on site. Stockpiled earth to be on site prior to any sludge dumping. However, permission is granted to bring in daily the amount of earthen material needed for the next day's operation. In the event that sufficient earthen material is not available, all dumping operations on site are to cease until sufficient material is available on site.

Your contract hauler, Niagara Sanitation - Permit #9A-065, is only to fill the 15 cubic yard containers to approximately 12 cubic yards and to cover each container with a tarpaulin prior to hauling from the STP to the sanitary landfill. The hauling route is west on Dona Street to Route 5, then south to Lake Avenue, east to Abbott Road and north on Abbott to the sanitary landfill. Hauling operations are only permitted from 8:00 a.m. to 4:30 p.m. Monday through Friday.

This approval will be valid only until March 31, 1981, and is specifically for a one-time cleaning of the Lackawanna STP digester.

Nussbaumer and Clarke, Inc., is to furnish an on-site observer during all landfilling operations. If odors or any other problems develop, he is to immediately take corrective action and to notify this office at 716/842-3837.

Sampling may be required at a later date at the discretion of this Department.

Lastly, you are to notify the Erie County Department of Environment and Planning (Mr. Campbell at 716/846-7674) at least 48 hours prior to any dumping of sludge at the site.

Should you have any questions in regards to any of the above conditions, feel free to contact this office at 716/842-3837.

Very truly yours,

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

RJM:las

cc: Mr. Weisberger, Nussbaumer & Clarke, Inc.
Mr. Klemp, Frank L. Ciminelli Construction Co., Inc.
Mr. O'Toole, NYSDEC, Albany Central Office
Mr. Hans, NYSDEC, Region 9 Headquarters
Mr. Campbell, Erie County Dept. of Environment and Planning
Mr. Speed, NYSDEC, Region 9 Headquarters
Mr. Pieczonka, Sr., Lackawanna Sewage Treatment Plant

REFERENCE 22

15506

DC

Nussbaumer & Clarke, Inc.
Consulting Engineers Surveyors
310 Delaware Avenue Buffalo, New York 14202
(716) 853-7582

DANIEL J. HURLEY, Chairman
VITO J. CARUSO, President
RICHARD E. VANDERBROOK, Vice-President
WALTER E. ROEDER, Secretary-Treasurer

OSWEGO OFFICE
147 W. 1st St.
Oswego, N.Y. 13126
(315) 342-3010

Associates

SIEGFRIED BARBASCH
PAUL J. BECKER
MICHAEL J. MIRANDA
CHARLES R. PETTIT
RAYMOND D. SULLIVAN
JOHN TRIANDA

Ken Selden
824-3722

February 12, 1981

Re: (C) Lackawanna, New York
Sewage Treatment Plant
EPA/DEC #C-36-852-02
NCI File No. 79-122

18 15LX
105LX
115LX
9315LX
3515LX
5315LC
3015LX

SLUDGE CONTAINER #'S

DEPT. OF ENVIRO... WATER ...

Mr. Robert J. Mitrey, P.E.
New York State Department of
Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202

Dear Sir:

On behalf of Mr. C. J. Klemp of the Frank L. Ciminelli Construction Co., Inc., Mr. Robert Miles of Niagara Sanitation Co., Inc., Mr. Ken Selden of Nussbaumer & Clarke, Inc., and myself, I would like to take this opportunity to thank you and Mr. Don Campbell of the Erie County Department of Environment and Planning for meeting with us on February 4, 1981 to discuss the disposal of digested sludge at the Lackawanna landfill site off of Abbott Road.

Following our meeting, the Plan of Action has been revised, as follows:

To date, a five foot (5') high earthen berm has been formed around the proposed landfill site to reduce the flow of storm runoff from the landfilled sludge to the ponds and wetlands. The landfill site was not within the wetland boundary, as determined by Mr. Richard Sweeney of your office. A six foot (6') deep test pit dug at this site on July 9, 1980 did not indicate the presence of groundwater. The enclosed area of about 1 acre filled four feet (4') high will contain about 6,500 C.Y. of material.

Approximately 1,000 C.Y. of fill material (excess excavated material from local pump station construction) to be mixed with the sludge in a 4:1 ratio, has been stockpiled at the landfill site. Even at maximum sludge processing rates, this represents more than a one (1) day supply of fill material. The stockpile shall be maintained during the entire landfilling operation. All excess snow has been removed from the site.

Seven (7) sludge containers (15 C.Y. capacity, but to be filled with only 12 C.Y. to prevent spilling) are at the sewage treatment plant for inspection. Each container has a serial number for identification.

During the week of February 16, 1981 the sludge processing operation shall begin. The City of Lackawanna and the New York State Department of Environmental Conservation shall be notified at least 48 hours prior to starting. National Pumping and Dredging Corporation shall pump out the 50' diameter digester and dewater the sludge to a minimum solids content of 20% TSS by the "Mobile LRS Process". Filtrate from the dewatering operation shall be returned to the primary settling tanks at a rate not to interfere with their operation. Assuming that the

digester is filled to its 58,000 C.F. capacity with 10% TSS sludge, the volume of sludge cake after dewatering will be about 1,300 C.Y. (58,000 C.F. x 1 C.Y./27 C.F. x 10%/20% x 1.0sg/.83 sg = 1,300±)

The sludge cake will be conveyed to the 15 C.Y. sludge containers. The containers shall then be trucked to the landfill site by Niagara Sanitation Co., Inc. The projected route is Dona Street (Westbound) to Hamburg Turnpike (Route 5, Southbound) to Lake Avenue (Eastbound) to Abbott Road (Northbound). A tarpaulin shall cover all sludge containers during transport.

Dewatering sludge 24 hours a day, 7 days a week at a maximum sludge production rate of 225 C.Y. per day, the operation could be completed in about six (6) days. (1,300 C.Y. x 1 day/225 C.Y. = 6± days) But, normal operational difficulties usually extend a job of this nature to about three (3) weeks.

At the landfill site the sludge and fill shall be mixed at a 4:1 ratio. The required landfill volume would be about 6,500 C.Y. (1,300 C.Y. of sludge + 5,200 C.Y. of fill = 6,500 C.Y.) As the job progresses, the remaining portion of the landfill will be monitored to insure that sufficient volume remains to complete the job. If the site fills up faster than anticipated, the earthen berms will be extended.

Landfilling shall take place Monday through Friday during the hours of 8:00 A.M. to 4:30 P.M. Nussbaumer & Clarke, Inc. shall furnish a construction observer during all landfilling operations.

I trust that this Plan of Action meets all of your requirements for an expeditious approval. As always, should you have any questions or comments, please do not hesitate to contact the undersigned.

Yours truly,

NUSSBAUMER & CLARKE, INC.

Steve A. Weisberger, P.E.

SAW:n

cc: Don Campbell
Thaddeus J. Pieczonka, Sr.
Paul Pieczonka
Tony Collareno
Nick Kliach
Captain Sam Violanti
Alex Petraski
Bob Miles
C.J. Klemp

REFERENCE 23

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Robert F. Flacke
Commissioner

July 24, 1981

827-6426

Mr. Anthony Collareno
Chief Engineer
Department of Public Works
Lackawanna City Hall
Ridge Road
Lackawanna, New York 14218

15506

RE: Landfill

Dear Mr. Collareno:

On July 23, 1981 Mr. Kevin Hintz of this office made an inspection of your landfill off of Abbott Road. The purpose of the inspection was twofold. First, determine if the site has been properly closed. Secondly, to determine the present conditions as this landfill is identified as a site that may have received hazardous waste in the past.

As a result of the inspection, the following violations were noted:

1) UNCOVERED WASTE - Final cover is needed on those areas adjacent to access road where incinerator residue has been filled.

This condition is in direct violation of Section 360.8(b)(1)(viii)(c) of Part 360.

Closure, including placement of final cover over those areas of previously filled incinerator residue.

2) IMPROPER GRADES AND SLOPES - The fill area to the rear of the property is extremely rough and uneven. Water is pooling and ponding in spots. Side slopes on the recent fill area and the fill area north of the access are excessive.

This condition is in direct violation of Section 360.8(b)(1)(viii) of Part 360.

All areas shall be properly graded and sloped so as to eliminate pooling and ponding of water and to minimize infiltration. Side slopes shall not exceed the maximum allowable slope of 1 (vertical) on 3 (horizontal).

3) VEGETATION - The vegetation on site is the result of natural seeding and consists entirely of weeds. Some areas lack a final cover vegetation.

This condition is in direct violation of Section 360.8(b)(1)(ix) of Part 360.

All areas shall be seeded with a proper cover vegetation once the site has been graded and final cover applied.

4) ACCESS CONTROL - The cable gate along Abbott Road was open. As a result a couple boards of demolition debris have been dumped on site. Indiscriminate dumping will continue until access is limited.

This condition is in direct violation of Section 360.8(a)(6) of Part 360.

The gate should be locked at all times to prevent unauthorized entry.

5) PERMIT - Your permit to operate expired 6/1/81. A letter was forwarded to you on 6/25/81, advising you of the expiration and need for closure. To date closure has not been started.

This condition is in direct violation of Section 360.8(a)(20) of Part 360.

As per the 6/25/81 letter, proper and complete closure of the site must be finished by September 25, 1981.

If you have any questions, please contact this office at 716/842-3837.

Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

KRH:cag

Attachment
cc: ECDEP

CALLED MR COLUMBO 8/5/81
They will reapply for NEW PERMIT
FOR SLUDGE ONLY.

REFERENCE 24

GEOLOGY

OF

ERIE COUNTY

New York

By

EDWARD J. BUEHLER

Professor of Geology
State University of New York at Buffalo

AND

IRVING H. TESMER

Professor of Geology
State University College at Buffalo

BUFFALO SOCIETY OF NATURAL SCIENCES
BULLETIN

Vol. 21. No. 3 Buffalo, 1963

Surficial Geology

PHYSIOGRAPHY

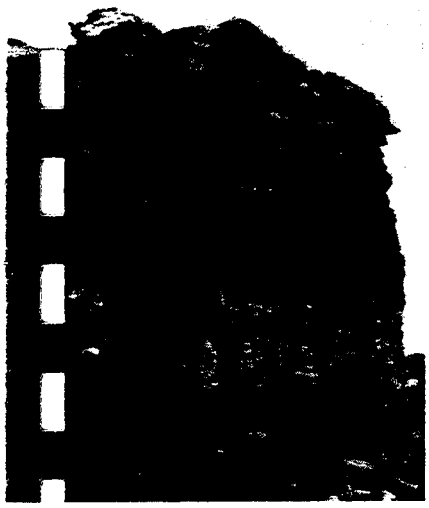
Both the altitude and relief of the land surface tend to increase from north to south. The lowest elevation is 565 feet above sea level at the northern tip of Grand Island and the highest, 1,945 feet above sea level, is in Sardinia township, southeastern Erie County. On the basis of physiography the 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.

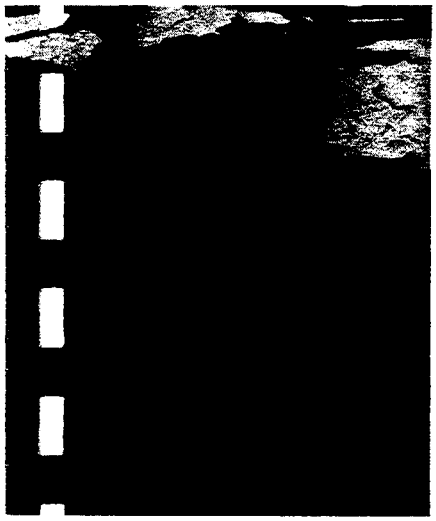
Between the Onondaga escarpment and the parallel Niagara escarpment to the north is the Lake Tonawanda plain, so named because in late Pleistocene time it was occupied by now extinct Lake Tonawanda. This plain actually is a shallow east-west trending trough, 10 to 15 miles in width, which is drained 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.



MOOREHOUSE MEMBER)
Barton Road, Clarence



KA CREEK SHALE MEMBER)
c, Lancaster

Agoniatites vanuxemi (Hall)
Goniatites sp.

Aviculopecten exacutus Hall
Gosselettia triquetra (Conrad)
Leptodesma marcellense Hall
Lunulicardium curtum Hall
L. fragilis (Hall)

Styliolina fissurella (Hall)

Isochilina (?) *fabacea* Jones

Greenops boothi (Green)

Cephalopods
Michelinoceras (?) *subulatum* (Hall)

Pelecypods
Modiomorpha subalata (Conrad)
Nuculites nyssa Hall
Orthonota (?) *parvula* Hall
Panenka linclaeni Hall

Cricoconarida
Tentaculites gracilistriatus Hall

ARTHROPODS
Primitiopsis punctulifera (Hall)

Trilobites
Phacops rana (Green)

INCERTAE SEDIS
Coleolus tenuicinctum Hall

SKANEATELES FORMATION

TYPE REFERENCE: Vanuxem (1840, p. 380).

TYPE LOCALITY: Skaneateles Lake, Onondaga County, New York; Skaneateles quadrangle.

TERMINOLOGY: See Cooper (1930). In Erie County, the Skaneateles is represented by two members: the Stafford Limestone Member (older) and the Levanna Shale Member.

AGE: Middle Devonian (Erian).

THICKNESS: 60 - 90 feet.

LITHOLOGY: In western New York, the Skaneateles Formation consists of gray limestone overlain by fissile gray to black shale.

PROMINENT OUTCROPS: Lake Erie shore between Bayview and Hamburg Town Park; Cazenovia Creek west of Ebenezer; Buffalo Creek between Gardenville and Blossom; Cayuga Creek at entrance to Como Lake Park; Plumbottom Creek in Lancaster.

CONTACTS: The lower contact is transitional with the older Oatka Creek Shale Member of the Marcellus Formation. The upper contact, at the base of the Centerfield Limestone Member of the Ludlowville Formation, cannot be seen in Erie County.

PALEONTOLOGY: The Skaneateles Formation has a varied fauna including coelenterates, bryozoans, brachiopods, gastropods, pelecypods, cephalopods, and arthropods.

Stafford Limestone Member

TYPE REFERENCE: Clarke (1894, p. 342).

TYPE LOCALITY: Stafford township, Genesee County, New York; Batavia quadrangle.

TERMINOLOGY: See Clarke (1901), Wood (1901) and Cooper (1930).

AGE AND CORRELATION: According to Cooper (1930), the Stafford is the oldest member of the Skaneateles Formation. However, Cooper *et al.* (1942, p. 1788) included the Stafford as the uppermost member of the Marcellus Formation. The Stafford correlates with the Mottville of central New York.

THICKNESS: According to Wood (1901), the Stafford is 8.5 feet thick at Lancaster and 15 feet thick at Lake Erie. Cooper (1930) suggests that the lower 6.5 feet of Wood's Stafford at Lancaster should be assigned to the Marcellus Formation.

LITHOLOGY: The Stafford is a gray limestone which weathers chocolate brown. Bedding varies from massive to shaly.

PROMINENT OUTCROPS: Buffalo Creek near junction of Mineral Springs Road and Indian Church Road; Cayuga Creek at entrance to Como Lake Park; Plumbottom Creek in Lancaster.

CONTACTS: The lower contact with the Oatka Creek Shale Member of the Marcellus Formation is often transitional in Erie County. The contact with the overlying Levanna Shale Member is usually fairly distinct.

PALEONTOLOGY: This faunal list has been modified from Wood (1901, pp. 139-181):

COELENTERATES

Aulopora sp.
Aulocystis dichotoma (Grabau)
A. jacksoni (Grabau)
Favosites placenta Rominger
Stereolasma rectum (Hall)

BRYOZOANS

Fistulipora sp.
Hederella canadensis (Nicholson)
H. cirrhosa Hall
Orthoptera tortalinea (Hall and Simpson)
Reptaria stolonifera Rolle
Stictopora sp.

BRACHIOPODS

Ambocoelia nana Grabau
Atrypa spinosa Hall
Camarotoechia horsfordi Hall
C. pauciplicata Wood
C. prolifica (?) (Hall)
C. sappho Hall
Chonetes lepidus Hall
C. mucronatus Hall
C. scitulus Hall
Crania recta Wood
Cryptonella planirostra (Hall)
C. rectirostra (Hall)
Douvillina inaequistriata (Conrad)
Elytha fimbriata (Conrad)
Emanuella subumbona (Hall)
Leiorhynchus limitare (Vanuxem)
Meristella barrisi Hall
M. meta Hall
Mucrospirifer mucronatus (Conrad)
Nucleospira concinna (Hall)

Productella dumosa Ha
Protoleptostrophia per
Rhipidomella vanuxem
Schizobolus concentric
Schuchertella arctostria

Bembexia capillaria rus
Loxonema sp.
Mourlonia itys (Hall)

Michelinoceras (?) *erie*
M. (?) *exile* (Hall)
Nephriticeras bucinum

Actinopteria muricata
Cypricardinia indenta
Leptodesma marcellens
Palaeaneilo sp.

Styliolina fissurella (H

Onychochilus nitidulus

Greenops boothi (Gree
Otarion craspidota (H

TYPE REFERENCE:

TYPE LOCALITY: N
New York; Auburn

TERMINOLOGY: See
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Marcellus. Grabau
Houghton (1914,
Levanna. Luther (
only the lower beds
the Skaneateles Sha

AGE AND CORRELA
with the Delphi St
Formation in centra

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2).

Genesee County, New York; Batavia

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Cooper (1930), the Stafford is the ation. However, Cooper *et al.* (1942, up rmost member of the Marcellus h tl Mottville of central New York.

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e Oatka Creek Shale Member of the in Erie County. The contact with the lly irly distinct.

en modified from Wood (1901, pp.

ERAT

ıvos s placenta Rominger
ereolasma rectum (Hall)

ANS

rtho era tortalinea (Hall and Simpson)
eptaria stolonifera Rolle
ictopora sp.

POD

ypt..ella planirostra (Hall)
rectirostra (Hall)
ouvillina inaequistriata (Conrad)
ytho mbriata (Conrad)
nani la subumbona (Hall)
iorhynchus limitare (Vanuxem)
eristella barrisi Hall
. me Hall
ucro irifer mucronatus (Conrad)
ıcle..pira concinna (Hall)

Productella dumosa Hall
Protoleptostrophia perplana (Conrad)
Rhipidomella vanuxemi Hall
Schizobolus concentricus (Vanuxem)
Schuchertella arctostriata (Hall)
Spinulicosta spinulicosta Hall
Trematospira gibbosa Hall
Tropidoleptus carinatus Conrad
Truncalosia truncata Hall

ANNELID (?)
Spirorbis sp.

MOLLUSKS
Gastropods

Bembexia capillaria rustica (Conrad)
Loxonema sp.
Mourlonia itys (Hall)
M. lucina (Hall)
Platyceras (Orthonychia) attenuatum Hall
Pleurotomaria sp.

Cephalopods

Michelinoceras (?) *eriense* (Hall)
M. (?) *exile* (Hall)
Nephriticeras bucinum (Hall)
Protokionoceras fenestrulatum (Clarke)
Spyroceras aegea (Hall)
Striacoceras typum (Saemann)

Pelecypods

Actinopteria muricata Hall
Cypricardinia indenta Conrad
Leptodesma marcellense Hall
Palaeaneilo sp.
Panenka lincklaeni Hall
P. mollis Hall
Pterinopecten exfoliatus Hall
Pterochaenia fragilis (Hall)

Cricoconarida

Styliolina fissurella (Hall)
Tentaculites gracilistriatus Hall

ARTHROPODS

Onychochilus nitidulus (?) Clarke
Primitiopsis punctulifera (Hall)

Trilobites

Greenops boothi (Green)
Otarion craspidota (Hall and Clarke)
Phacops rana (Green)

Levanna Shale Member

TYPE REFERENCE: Cooper (1930, p. 217).

TYPE LOCALITY: Near Levanna, east shore of Cayuga Lake, Cayuga County, New York; Auburn quadrangle.

TERMINOLOGY: See Cooper (1930). Wood (1901, pp. 153-154) referred to approximately three feet of shale and shaly limestone above the Stafford as Marcellus. Grabau (1898, pp. 65-66) used the term Upper Marcellus and Houghton (1914, pp. 21-23) applied the name Cardiff to beds now called Levanna. Luther (1914, pp. 14-16) also used the term Cardiff Shale but for only the lower beds of the Levanna. He called the upper beds of the Levanna the Skaneateles Shale.

AGE AND CORRELATION: Middle Devonian (Erian). The Levanna correlates with the Delphi Station, Pompey and Butternut Members of the Skaneateles Formation in central New York.

THICKNESS: The Levanna thickens eastward from about 45 feet at Lake Erie to 80 feet at the eastern edge of the county.

LITHOLOGY: The Levanna is a fissile shale, dark gray or black near the bottom, and lighter olive gray near the top. There are some calcareous beds and some pyritiferous concretions.

PROMINENT OUTCROPS: Lake Erie shore between Bayview and Hamburg Town Park; Cazenovia Creek west of Ebenezer; Buffalo Creek between Gardenville and Blossom.

CONTACTS: The contact with the underlying Stafford Limestone Member is usually fairly sharp. The upper contact with the Centerfield Limestone Member of the Ludlowville Formation cannot be seen in Erie County.

PALEONTOLOGY: Most of the following species were listed by Grabau (1898) and Wood (1901, pp. 139-181) from beds termed "Upper Marcellus" by them and now recognized as Levanna:

PLANTS

various spores

COELENTERATES

Aulocystis dichotoma (Grabau)

BRACHIOPODS

Ambocoelia umbonata (Conrad)
Atrypa reticularis (Linnaeus)
Chonetes lepidus Hall
C. mucronatus Hall
C. setigerus (Hall)
Leiorhynchus limitare (Vanuxem)
Meristella barrisi Hall
Mucrospirifer mucronatus (Conrad)
Spinulicosta spinulicosta Hall
Truncalosia truncata (Hall)

MOLLUSKS

Gastropods

Paracyclas lirata (Conrad)
Serpulospira laxus (Hall)

Cephalopods

Centroceras marcellense (Vanuxem)
Protokionoceras fenestrulatum (Clarke)
Spyroceras aegea (Hall)

Pelecypods

Lunulicardium curtum Hall
Nuculites triqueter Conrad
Pterochaenia fragilis (Hall)

Cricoconarida

Styliolina fissurella (Hall)
Tentaculites gracilistriatus (Hall)

ARTHROPOD

Trilobite

Phacops rana (Green)

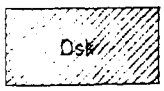
Middle Devonian

Hamilton Group

Dl

Ludlowville Formation

Tichenor Limestone Member, thin, massive, fossiliferous, resistant limestone occurs at top; Wanakah Shale Member, medium-gray, fossiliferous, calcareous shale with some calcareous concretions; Ledyard Shale Member, dark-gray calcareous shale; Centerfield Limestone Member, thin, massive limestone unit at base.



Skaneateles Formation

Levanna Shale Member, dark-gray calcareous shale; Stafford Limestone Member, massive, fossiliferous limestone at base.

Dma

Marcellus Formation

Oatka Creek Shale Member, black calcareous shale with some calcareous concretions.

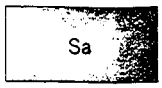
Do

Onondaga Limestone

Moorehouse Limestone Member, light-gray limestone containing numerous corals and considerable dark-gray chert nodules; Nedrow Member, intermixed light-gray limestone and dark-gray chert; Edgecliff Member, light-gray limestone with some light-gray chert nodules, locally represented by a coral bioherm.

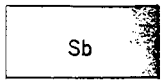
UNCONFORMITY

Upper Silurian



Akron Dolostone

Light-gray dolostone



Bertie Formation

Williamsville Member, light-gray argillaceous limestone; Scajaquada Member, interbedded dark-gray shale and argillaceous limestone; Falkirk Member, light-gray dolostone; Oatka Member, dark-gray shale with argillaceous limestone at base containing eurypterids.

Sc

Camillus Shale

Gray shale containing large amounts of gypsum

SILURIAN

Contact

Inferred Contact

GEOLOGIC MAP OF ERIE COUNTY, NEW YORK BEDROCK GEOLOGY

by Edward J. Buehler and Irving H. Tesmer

1963


Blossom Cem
ROAD
682
Dl
CENTER RD
BM 652
East Seneca
SENECA
Angle Road Cem
ROAD
Dmo
RESERVE RD
Sch Annex No 4
Gas Well
Gaso Well
Creek
Sch No 5
Airfield
PARKWAY
Gas Well
667
CENTRAL
SHORE
BM 514
Radio Tower
PENNSYLVANIA
Dmo
JEWETT
939
Dwa
Ellicott
929
Newman
Creek
875
864
868

REFERENCE 25

DEPARTMENT OF PUBLIC WORKS
RONALD S. CARDINALE
CHIEF ENGINEER
ANTHONY E. COLLARENO
SENIOR ENGINEER
BRUCE L. COLELLO
PRINCIPAL CLERK

CITY OF LACKAWANNA
ERIE COUNTY, NEW YORK

ROOM 311, CITY HALL, RIDGE ROAD
LACKAWANNA, NEW YORK 14218
TELEPHONE 716—826-4555 EXT. 21 & 22

RCPHE
Water
Air
Gen
Circ.
File

January 13, 1978

Mr. John C. McMahon, P.E.
Sr. Environmental Quality Engineer
Bureau of Water Resources
NYSDEC
Region 9 Office
584 Delaware Avenue
Buffalo, New York 14202

Re: Permit to Continue Operating Solid Waste Facility in City of Lackawanna.

Dear Mr. McMahon:

On December 30, 1977, the City of Lackawanna received instructions and application forms from Mr. Anthony Voell, Chief, Bureau of Water Resources, Erie County, pertaining to the City of Lackawanna filing an application with the NYSDEC which would authorize us to continue the operation of our landfill.

Using the items he mentions in their numerical sequence, I have attempted to explain the operations involved in our present landfill and also apply for a permit to continue our present operation.

1. Enclosed please find completed form 47-19-4.

2. Enclosed please find a site survey of our landfill area as drawn and certified in 1961 by Mr. Timothy McCormick, P.E., Lic. No. 615.

3. At the present time, the City of Lackawanna has no detailed program for the closure of our facility since it still has approximately 10 years more of useful life.

The City of Lackawanna is utilizing the area in a west to east direction, and as each area reaches its maximum capacity it is left at its temporary finished grade. Cover material has previously been deposited at the site and at the end of each working day a six inch earth cover is placed over the incinerated residue

-con't-

dumped that day. (It should be noted at this point that only incinerated residue is deposited at this landfill).

By operating as stated above, when the full capacity of our landfill has been reached, the City of Lackawanna will be in possession of approximately 15 acres of cleared land suitable for just about any purpose.

As we progress along we close up the area previously filled and dress it to its temporarily finished state. Upon permanently closing the landfill, the City will cover the entire area with an additional 24 inches of soil. Also the City of Lackawanna will comply with any requirements stipulated by County, State of Federal Agencies pertaining to the final closure of our landfill.

4. On a daily basis, the City of Lackawanna deposits approximately two loads of incinerated residue (approximately 16 cu. yds.) at our disposal site. At the end of each working day a six inch layer of earth (primarily clay, silt, and loam) is spread over the freshly deposited material. This earth fill was brought to the site and stored there specifically to be used as cover material.

Since our operation is a relatively simple one, equipment breakdowns present no problem. A city-owned truck equipped with a special scow body is loaded at our municipal incinerator and hauls the incinerated residue to our landfill. Once the material is dumped, a front-end loader is used to spread the material and cover it with the above mentioned cover material. The only piece of equipment needed at the site is the front-end loader and if this should become inoperable, as it has in the past, the City rents another until ours is repaired and put back in service.

In 1973, the City experienced a runoff water problem at our landfill site due to storm water which drained off and through the NYS Thruway roadbed which was collecting on our site. The City corrected this problem by installing 550 linear feet of 24" diameter storm sewer pipe from the origin of the water at the Thruway embankment to a point on the opposite side of our landfill leading into a drainage ditch which transports the water into another existing storm sewer and eventually into Smokes Creek.

We do not deposit hazardous or toxic materials at our site.

Actual operations at the site are so limited that air contamination due to dust or exhaust emissions are negligible. We do spray oil on our access road to keep road dust from being raised during the hot weather months. This is done in spite of the fact that the road is used only three times daily: 2 truck trips and 1 trip for the front-end loader.

All material deposited on our site has been completely incinerated and left to cool before it is loaded and transported to our landfill, therefore, danger of fire is extremely slight.

5. Pertaining to Section 360.8a -

1. No incinerated material shall be placed in surface water or ground waters. As explained earlier (in Item 4) the City of Lackawanna went to considerable expense in 1973 to install storm sewer pipe across our landfill in such a manner so as to prevent storm water from ponding in our landfill area.

2. Our landfill area is not located in an agricultural area.

3. We have no surface water at our site, so Leachate does not present a problem.

4. Our landfill only receives incinerated residue which has no salvage value.

5. No access to our facility is allowed at any time to anyone not directly concerned with the operation of our landfill.

6. Our facility has only one access road which is protected by a gate which is kept locked at all times.

7. Our landfill only receives incinerated residue, therefore, we have no problem with blowing papers.

8. Our landfill area is regularly baited by a competent exterminator to control rodent infestation.

To control dust from our access road due to truck traffic to and from the site, the City applies oil to the road surface thereby eliminating any dust problem.

9. The access road to our landfill area is kept in a safe passable condition at all times.

10. The facility is operated in such a manner as to eliminate any unsafe conditions, as far as possible.

11. It is our belief that Item 11 does not apply to our situation We have only one truck making two trips per day, and at the completion of the second dumping, a front-end loader arrives at the site to spread and cover the material.

Our truck and front-end loader are both muffler equipped and neither is in operation long enough to cause any distractions or disturbances to neighboring residents.

12. Our Lackawanna Municipal Garage is located approximately 1.52 miles from our landfill site, and all facilities required for personnel are available there.

Personnel running the landfill are based at our city garage since the landfill is in such close proximity to it.

13. All equipment at our municipal garage is considered usable at our landfill if needed.

At the present time, the City of Lackawanna owns and maintains a truck with a special scow body and two front end rubber-tire loaders for use at our landfill site.

14. Equipment is sheltered at our municipal garage.

15. No open burning shall take place at our site.

16. All dumping of incinerated residue is confined to small area, and covered over at the end of the day.

17. No hazardous wastes shall ever be brought to our landfill site.

18. Same as above.

19. The City of Lackawanna will submit any required forms to any overseeing agency upon request.

20. The City of Lackawanna will continue to operate and maintain its landfill to meet all requirements pursuant to Part 360, Proposed New Rules and Regulations Solid Waste Management Facilities 6NYCRR Part 360.

All equipment used at the facility shall be maintained to operate efficiently.

In the event of equipment failure, the City will contract with outside agencies to acquire equipment to continue operations.

21. Our landfill site is not located in a flood plain.

Pertaining to 360.8b -

(1) Sanitary Landfill

(i) The groundwater elevation in the general area of our landfill facility is approximately 591.0 above sea level. The approximate low ground elevation in our landfill area is 608.0 feet above sea level, so we easily meet the minimum vertical

separation required between our residue deposits and groundwater.

(ii) No surface waters are present at our landfill site.

(iii) The City of Lackawanna has no monitoring wells at its landfill facility. Since we are operating at an existing facility none are required.

(iv) Does not apply to our situation.

(v) Does not apply to our situation.

(vi) Complete combustion has taken place in all residue deposited at our landfill so no decomposition gases can be generated from our residue.

(vii)

a. All deposits placed shall be kept to a maximum of two feet in depth and properly compacted.

b. Lift heights will not exceed ten feet.

c. Daily cover shall be placed upon all exposed deposits at the close of each working day.

d. Should the City ever forsee a time period of 30 days when we will not make any deposits (highly unlikely) we will apply intermediate cover, as required.

e. The City will apply final cover in each of the following circumstances: If additional refuse is not to be placed in an area within 90 days of attaining final elevation of an area; upon termination of the life of the landfill for any reason.

(viii) The area has been and will continue to be graded in such a manner as to assure proper rainfall runoff so as to prevent ponding, etc.

(ix) Grass will be planted and maintained by the City of Lackawanna within 4 months after final cover has been placed.

(x) The City of Lackawanna agrees to maintain the landfill area for a period of five years after placement of final cover.

(xi) No hazardous wastes, or wastes of any kind other than incinerated residue, shall be placed at our landfill.

(xii) The City agrees not to deposit fill or excavate any areas within fifty feet of the boundary line of the landfill area.

(xiii) A surveying bench mark will be established and maintained on the site.

(xiv) In the event the City of Lackawanna should sell the landfill area at any time, provisions shall be included in the deed indicating the period of time the area was used as a landfill, a description of the wastes contained therein, and the fact that records for the facility have been filed with the NYSDEC. Included shall be a survey of the area.

(xv) Any additional requirements deemed necessary by any licensing agency will be honored by the City of Lackawanna.

6. The City of Lackawanna fully believes that we now meet and shall continue to meet the standards set forth in these regulations.

7. The City of Lackawanna landfill accepts neither industrial nor hazardous wastes.

8. Application is signed by Mayor Edward Kuwik, City of Lackawanna.

Yours truly,

Anthony Collareno

ANTHONY COLLARENO
SENIOR ENGINEER

AC:li

enc.

REFERENCE 26

NAME OF SITE: Lackawanna

LOCATION: Abbot Road, Erie County

CURRENT OWNER: City of Lackawanna

HISTORY

The Lackawanna site is now inactive. In the past, the City of Lackawanna disposed of incinerator residue, digested sludge, and rubbish. According to past reports, this site experienced periodic cover problems.

INVESTIGATION

The Lackawanna Abbott Road Landfill has a large ponding area immediately to the east which drains along its northern boundary. A drainage ditch believed to drain the landfills western boundary is also shown on the enclosed site location map. All four sites, as indicated on the sketch, were sampled for water for heavy metals, TOC & THO with soil samples analyzed for heavy metals, and THO. Sites 1 and 3 were observed leachate breakouts, Site 2 was augered to a depth of 4 to 5 feet, and Site 4 was the downstream reference sample.

SOIL AND GEOLOGICAL INFORMATION

Unclassified city land, as its name implies, includes nonagricultural areas within the limits of the numerous towns and cities in the county. Almost 55 square miles of land in the county are accounted for in this classification. The soils at this site are classified under this heading.

The rock at this site is classified in the Hamilton Group formed in the Middle Devonian Period and the Paleozoic Era. The group specifically consists of Skaneateles and Marcellus Formations - shale, thin limestone. The Skaneateles Formation consists of gray limestone overlain by fissile gray to black shale.

SAMPLE ANALYSES

Sample 1 (soils) exhibited high concentrations for both lead and zinc. The water analyses conducted on all four sites, showed low concentrations for all parameters tested.

DISCUSSION OF RESULTS

This site appeared to be properly covered. Sample 3 was a leachate breakout sample which did not show any abnormally high concentrations for metals, THO, and TOC.

RECOMMENDATIONS

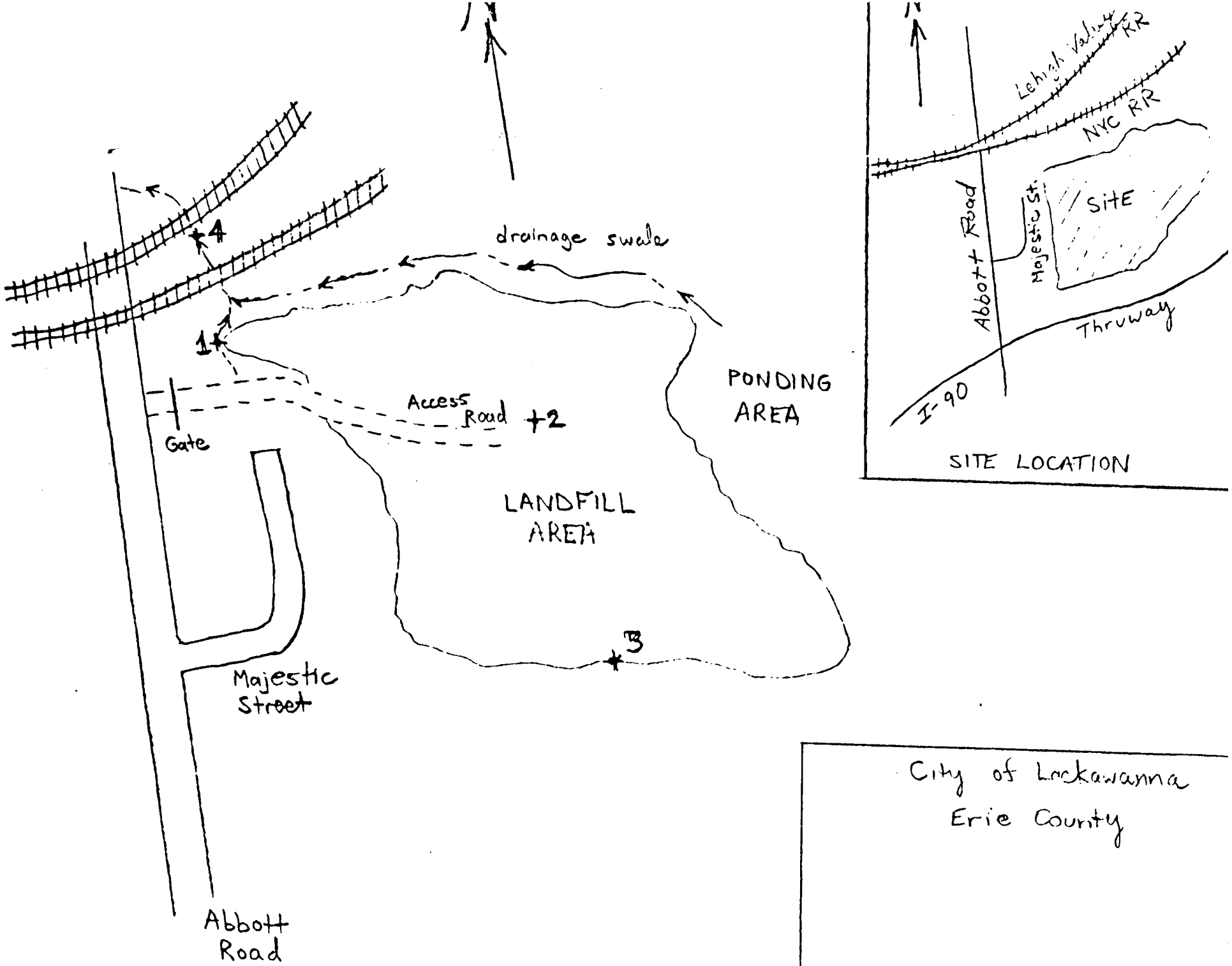
No further investigation.

LACKAWANNA LANDFILL - Soil Analyses (3/31/82)

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (Station #) (1)	(2)	(3)	(4)
Arsenic	ug/g dry	5.5	4.8	3.9	8.6
Beryllium	ug/g dry	<1	<1	1.8	<0.6
Cadmium	ug/g dry	1.5	<0.9	<0.5	<0.4
Chromium	ug/g dry	44	44	29	44
Copper	ug/g dry	66	35	34	15
Lead	ug/g dry	250	83	50	9.0
Mercury	ug/g dry	<0.07	<0.1	0.89	0.10
Nickel	ug/g dry	18	4.4	15	24
Selenium	ug/g dry	0.79	0.62	0.41	<0.2
Silver	ug/g dry	<1	<1	<0.9	<0.6
Thallium	ug/g dry	<10	<20	<9	<6
Antimony	ug/g dry	<30	<40	<30	<20
Zinc	ug/g dry	730	420	170	100
Dry Weight	%	42	29	54	63
Halogenated Organic Scan	ug/g dry as Cl_2 Lindane Standard	0.61	0.50	0.26	0.88

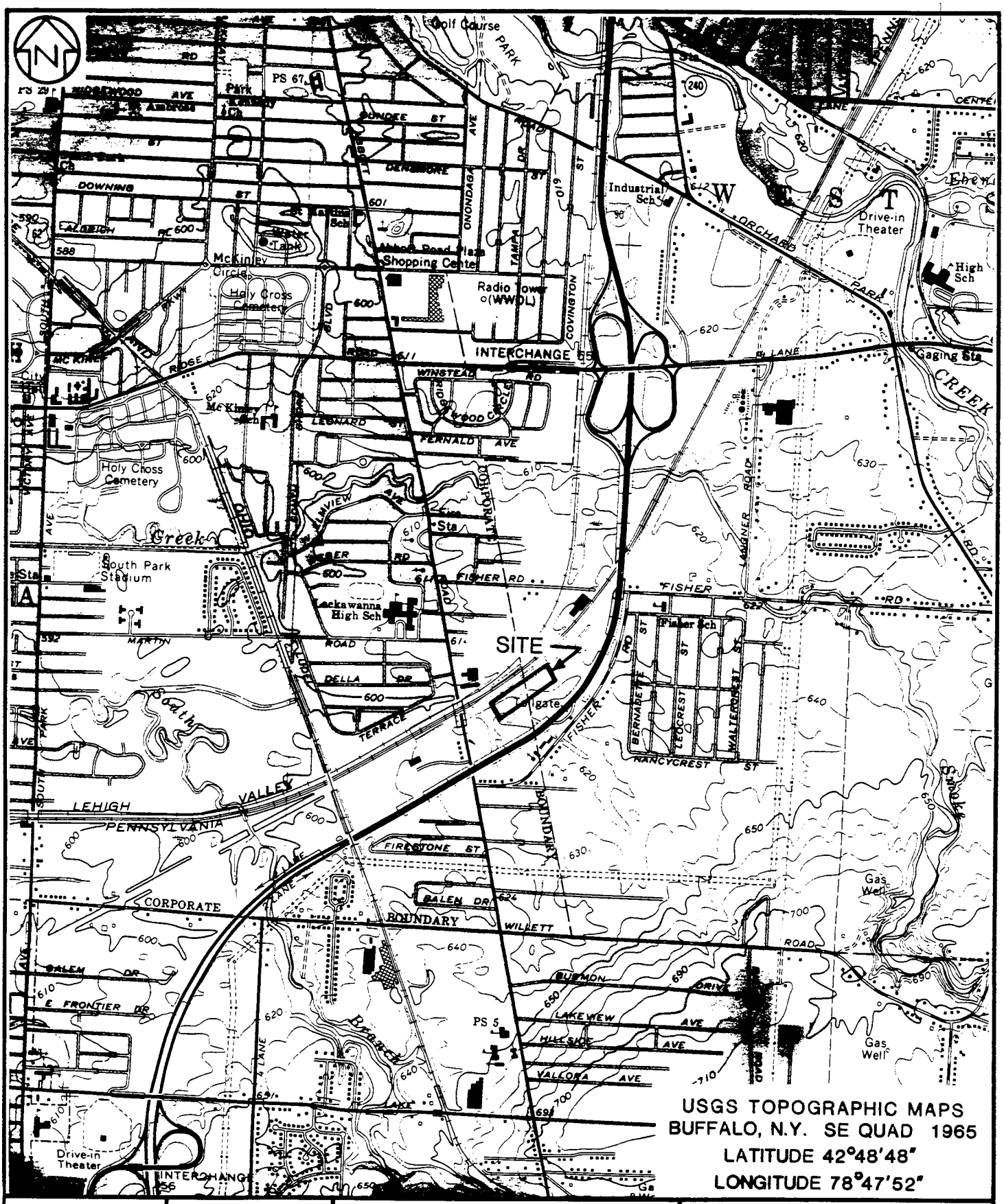
LACKAWANNA LANDFILL - Water Analyses (3/31/82)

COMPOUND	UNITS OF MEASURE	SAMPLE IDENTIFICATION (Station #) (1)	(2)	(3)	(4)
Arsenic	ug/l	13	<6	<6	<6
Beryllium	mg/l	<0.01	<0.01	<0.01	<0.01
Cadmium	mg/l	<0.006	<0.006	<0.006	<0.006
Chromium	mg/l	0.012	0.012	<0.004	0.005
Copper	mg/l	<0.005	<0.005	0.006	0.034
Lead	mg/l	<0.05	<0.05	<0.05	<0.05
Mercury	ug/l	<0.5	<0.5	<0.05	<0.05
Nickel	mg/l	<0.03	<0.03	<0.03	<0.03
Selenium	ug/l	<3	<3	<3	<3
Silver	mg/l	<0.01	0.02	<0.01	<0.01
Thallium	mg/l	<0.1	<0.1	<0.1	<0.1
Antimony	mg/l	<0.3	<0.3	<0.3	<0.3
Zinc	mg/l	0.13	0.054	0.12	0.090
TOC	mg/l	7	4	13	5
THO	ug/l as Cl_2 Lindane Standard	0.23	0.13	0.28	0.26



City of Lackawanna
Erie County

REFERENCE 27



RECRA RESEARCH INC. BUFFALO, NEW YORK	Scale: 1:24000		CITY OF LACKAWANNA LANDFILL LACKAWANNA, N.Y. N.Y.S. SUPERFUND PHASE I
	By	Date	
	Dwn. MJS	12/85	VICINITY MAP
	Ckd.		
	Ap'vd.		
	Rev.		Project No. 5C280411 A

BRUNING 61160-1

APPENDIX B

REVISED "HAZARDOUS WASTE DISPOSAL SITE REPORT"

(47-15-11 (10/83)

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

PRIORITY CODE: 2a SITE CODE: 915094

NAME OF SITE: City of Lackawanna Landfill REGION: 9

STREET ADDRESS: 1983 Abbott Road

TOWN/CITY: Lackawanna COUNTY: Erie

NAME OF CURRENT OWNER OF SITE: City of Lackawanna

ADDRESS OF CURRENT OWNER OF SITE: City Hall, Lackawanna, NY

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

ESTIMATED SIZE: 15 ACRES

SITE DESCRIPTION:

Site previously accepted incinerator residue, digested sewage sludge, and construction and demolition material. Rodent problem affected neighboring residents in past.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐ SUSPECTED ☒

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Incinerator residue, digested sewage	Unknown
sludge, rubbish	

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 19 61 TO _____, 19 81

OWNER(S) DURING PERIOD OF USE: City of Lackawanna

SITE OPERATOR DURING PERIOD OF USE: City of Lackawanna

ADDRESS OF SITE OPERATOR: City Hall, Lackawanna, NY

ANALYTICAL DATA AVAILABLE: AIR ☐ SURFACE WATER ☒ GROUNDWATER ☐
SOIL ☒ SEDIMENT ☐ NONE ☐

CONTRAVENTION OF STANDARDS: GROUNDWATER ☐ DRINKING WATER ☐
SURFACE WATER ☐ AIR ☐

SOIL TYPE: Niagara

DEPTH TO GROUNDWATER TABLE: Estimated 17 feet

LEGAL ACTION: TYPE: None STATE ☐ FEDERAL ☐
STATUS: IN PROGRESS ☐ COMPLETED ☐
REMEDIAL ACTION: PROPOSED ☐ UNDER DESIGN ☐
IN PROGRESS ☐ COMPLETED ☐

NATURE OF ACTION: None

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Site soils contain elevated levels of some heavy metals - Pb, Zn, Cr, Cu and Ni

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Recra Research, Inc.

NAME Kermit Studley
TITLE Staff Geologist
NAME _____
TITLE _____
DATE: February 25, 1986

NEW YORK STATE DEPARTMENT OF HEALTH

NAME _____
TITLE _____
NAME _____
TITLE _____
DATE: _____