Copy 1

SUPPORTING DOCUMENTS FOR ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

Exolon Corporation Site No. 915023

City of Tonawanda Erie County

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

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

By:

DUNN ENGINEERING COMPANY

in association with

TAMS CONSULTANTS, INC.

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November 1993

PRELIMINARY SITE ASSESSMENT
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SUPPORTING DOCUMENTATION

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A-2 Flood Insurance Rate Map, November, 1982.

A-3 *Ground-Water Resources of the Erie-Niagara Basin, New York,* 1968.

A-4 *General Soil Map and Interpretation. Erie County, New York,* 1979.

A-5 *Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste - Disposal Sites,* EPA-905/4-85-001, 1985.

A-6 *New York State Community Water System Sources,* NYSDOH, 1982.

A-7 Phase I Investigation, Exolon Corporation, Tonawanda, Erie County, New York, Recra Environmental, Inc. for NYSDEC, 1986.

Geology of Erie County, Edward J. Buehler and Irving H. Tesmer, 1963.

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.

which continue eastward. Prominent Warren beaches are displayed at Buffalo Creek near Bullis Road. Blackmon (1956) provides an excellent account of strand lines on the East Aurora quadrangle.

Lake Grassmere which stood at an elevation of 640 feet and Lake Lundy which stood at 620 feet extended into Erie County. The beaches of these lakes, however, are scattered and difficult to correlate. Lake Lundy existed approximately 10,000 years ago.

Lake Tonawanda

As glacial ice retreats it inevitably leaves a train of small lakes. These become extinct as their outlets cut low enough to drain them. One of the largest of these in western New York was Lake Tonawanda, described by Kindle and Taylor (1913, p. 19). This lake occupied much of the area in Niagara and Erie counties which lies between the Niagara and Onondaga escarpments. It was formed as the level of Lake Lundy dropped and it drained northward over the Niagara escarpment at Lewiston, Lockport, Gasport, Medina, and Holley. The lake extended eastward from the Niagara River for a distance of about 50 miles to Holley. It was about 8 miles wide in a north-south direction and the maximum depth is estimated as approximately 35 feet. The present Oak Orchard Swamp is regarded as a remnant.

The shore line of Lake Tonawanda was traced by D'Agostino (1958). In Erie County the southern shore extended from Tonawanda through Brighton Village to Ellicott Creek just north of the junction of Forest Road and Millersport Highway. It continued eastward 1 mile north of Clarence Center and approximately 2.5 miles north of Akron.

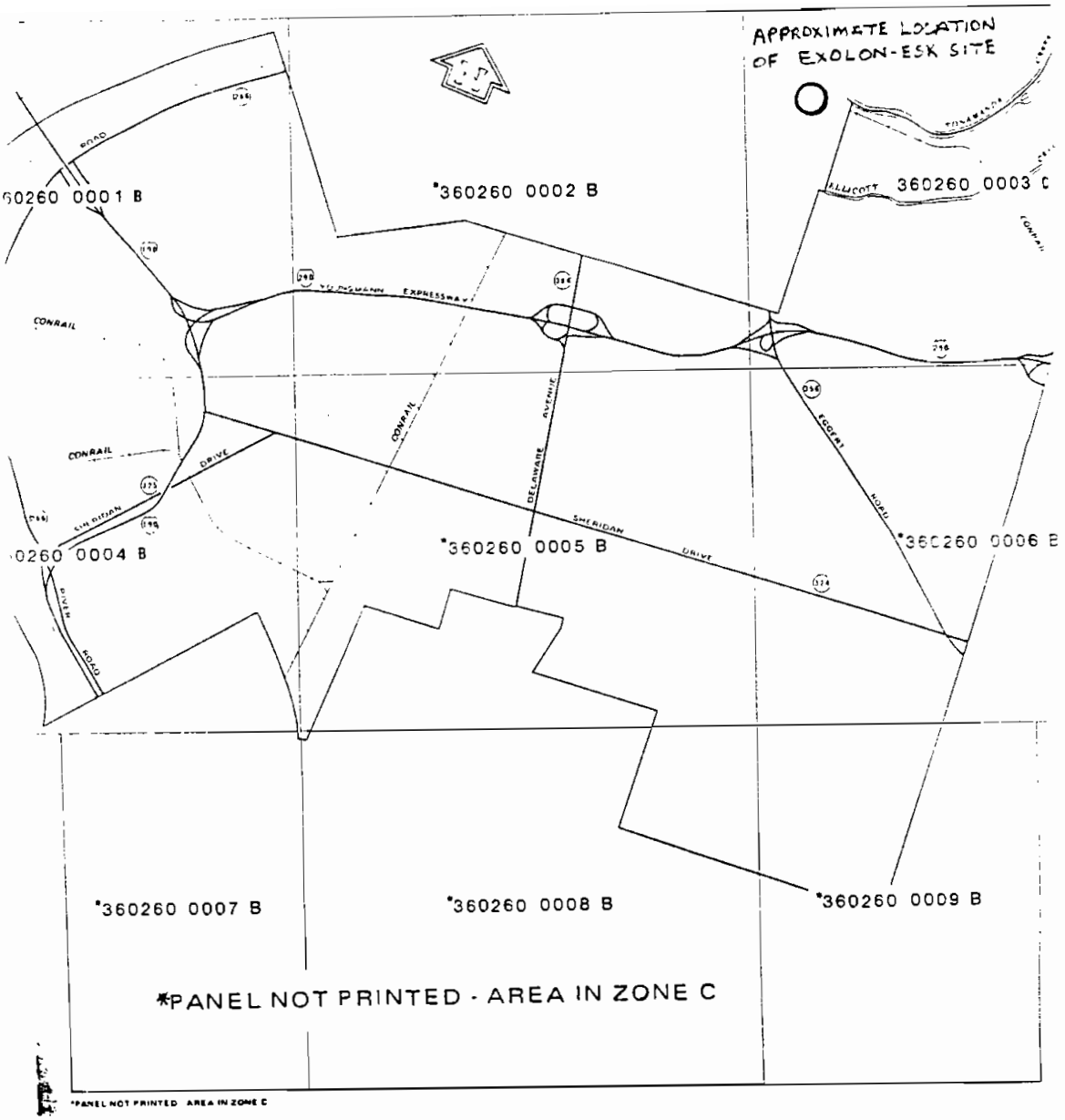
In southern Erie County, Cuthbert (1937) by studies of topography and sedimentation outlined Lake Zoar which occupied part of the valley of Cattaraugus Creek.

Glacial Pavement and Striae

Glacial pavement and glacial striations are preserved on several outcrops of the Onondaga Limestone. The best displays are in the Federal Crushed Stone Company quarry, Cheektowaga. No systematic study of the orientation of striae has been made in this area.

A-2

Flood Insurance Rate Map, November, 1982.



*PANEL NOT PRINTED - AREA IN ZONE C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
TONAWANDA,
NEW YORK
ERIE COUNTY

PANELS: 1, 2, 3, 4, 5, 6, 7, 8, 9

MAP INDEX
PANEL PRINTED: 1, 3, 4

COMMUNITY-PANEL NUMBER
360260 0001- 0009

MAP REVISED:
NOVEMBER 12, 1982

Federal Emergency Management Agency

KEY TO MAP

500-Year Flood Boundary	ZONE C
100-Year Flood Boundary	ZONE B
Zone Designations With Date of Identification e.g., 12/2/74	
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	ZONE C
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7x
River Mile	•M15

**Referenced to the National Geodetic Vertical Datum of 1929

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

8

Ground-Water Resources of the Erie-Niagara Basin, New York, 1968.

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

Yields of wells

The Camillus Shale is by far the most productive bedrock aquifer in the area. Except in the vicinity of Buffalo and Tonawanda, where industrial wells produce from 300 to 1,200 gpm, no attempt has been made to obtain large supplies from the formation. However, the inflow of water to gypsum mines near Clarence Center and Akron indicate that large supplies are not necessarily restricted to the Buffalo and the Tonawanda area. Two examples of large flows of water encountered in gypsum mining have already been mentioned. Pumpage from gypsum mines near Clarence Center (including the mine mentioned previously) is substantial. The water pumped is discharged to Got Creek. On July 2, 1963, the creek had a flow of 2.1 mgd (million gallons per day) about half a mile downstream from the mines, that was due almost entirely to the pumpage. Water for industrial use is pumped from a flooded, abandoned gypsum mine at Akron. This pumpage, at a rate of 500 to 700 gpm, has had no appreciable effect on the water level in the mine.

Probably the larger solution openings are most common in discharge areas near Tonawanda Creek and its tributaries and near the Niagara River; the flow of ground water becomes concentrated as it approaches the streams to which it discharges. Other discharge areas, such as low-lying swampy areas and headwaters of small streams that have perennial flow, are likely places to drill wells.

LIMESTONE UNIT

Bedding and lithology

The term "limestone unit" in this report is applied to a sequence of limestone and dolomite overlying the Camillus Shale. The limestone unit includes the Bertie Limestone at the base, the Akron Dolomite, and the Onondaga Limestone at the top. The lithology and thickness of these units are shown in figure 7. The Bertie Limestone and the Akron Dolomite are Silurian in age and are separated from the overlying Onondaga Limestone of Devonian age by an unconformity or erosional contact.

The Bertie Limestone is mainly dolomite and dolomitic limestone but contains interbedded shale particularly in the thin-bedded lower part of the formation. The middle part is brown, massive dolomite, and the upper part is gray dolomite and shale whose beds are of variable thickness. The total thickness of the formation is about 55 feet (Buehler and Tesmer, 1963, p. 30-31).

The Akron Dolomite is composed of greenish-gray and buff dolomite beds varying from a few inches to about a foot in thickness. The upper contact of the Akron is erosional and is often marked by remnants of shallow stream channels. Thin lenses of sandy sediments lie in the bottoms of some channels. The thickness of the formation is generally between 7 and 9 feet (Buehler and Tesmer, 1963, p. 33-34).

Many domestic-supply wells penetrate from 1 foot to a few feet into the soluble rocks and produce small but adequate yields. On the other hand, industrial wells that were intended to produce large supplies of water give a truer picture of the water-supply potential of the rocks. Data on industrial wells show that the Camillus Shale will yield as much as 1,200 gpm and the limestone unit as much as 300 gpm and probably more. But the data also show that the rocks produce low yields at places. This is shown by such wells as 301-848-1 which was drilled to obtain a large supply for an industry but which yielded only 30 gpm. The water-bearing zones obviously are unevenly distributed through the rocks. Factors that control the occurrence of the water-bearing zones cannot be evaluated at the present time to the extent necessary to predict exactly where the zones occur.

The Lockport Dolomite is the least productive unit of the soluble rocks. Within the Erie-Niagara basin yields of wells in the Lockport range from about 4 to 90 gpm. Depth of the wells range from 20 to 70 feet. Most of the deeper wells were drilled where the depth to bedrock is greatest. Domestic-supply wells generally are finished in the fracture zone at the rock surface or in a bedding joint within the uppermost 30 feet of the rock. It is usually not necessary to drill deeper into the Lockport if only a small supply is needed.

Drilling deeper in an attempt to intersect additional bedding-plane openings at depth would provide higher yields but, generally, at the expense of lower water levels and therefore higher pump lifts. Johnston (1964) collected data on a much larger number of wells along the outcrop belt of the Lockport Dolomite than were inventoried in the Erie-Niagara basin. He found that wells drawing water from the lower 40 feet of the Lockport (the northern part of the outcrop area) yield from 1/2 to 20 gpm and have an average yield of 7 gpm. Wells finished in the upper part of the Lockport (the southern part of the outcrop area) yield from 2 to 110 gpm and have an average yield of 31 gpm. Yields of as much as 50 or 100 gpm are possible from the Lockport in the Erie-Niagara basin but would be exceptional.

CAMILLUS SHALE

Bedding and lithology

The Camillus Shale lies above the Lockport Dolomite and crops out to the south of where the dolomite is exposed. Exposures of the Camillus Shale are rare in the Erie-Niagara basin because of the low relief of the outcrop area and the cover of glacial deposits. Geologists who have studied the Camillus in the study basin agree that it consists mostly of gray shale. (For example, see Buehler and Tesmer, 1963, p. 29-30.) Subsurface data, on the other hand, indicate that a considerable amount of gray limestone and dolomite is interbedded with the shale. Along with these carbonates, gypsum comprises a significant part of the Camillus Shale. Some of the gypsum beds are as much as 5 feet thick. Gypsum also occurs in the Camillus as thin lenses and veins. Table 1,

which is a log compiled during construction of a mine slope, illustrates the occurrence of gypsum and the predominance of carbonate rocks in some parts of the Camillus.

Though the Camillus dips southward at approximately 40 feet to the mile, the dip is not uniform. Gypsum miners say the formation "rolls," to describe the gentle folding of its beds. The formation is marked by broad, low folds with amplitudes of a few feet and spacings of a few hundred feet between crests. The fold axes generally are east-west.

Water-bearing openings

The extensive beds of gypsum make the Camillus Shale unique among the shale formations of the basin. The importance of the gypsum lies in its solubility; gypsum is far more soluble than the enclosing rocks, whether shale, dolomite, or limestone. Where gypsum has been dissolved, openings exist for the passage and storage of water.

The effect of the solution of gypsum on the water-bearing properties of the Camillus Shale (and other rocks) can be readily appreciated. Where the topmost beds of the Camillus crop out at the base of the falls of Murder Creek at Akron, the Camillus seems to be an impermeable shale. If one judged the water-bearing properties of the Camillus on the basis of this outcrop alone, he would be wrong. Yields of water wells and drainage into gypsum mines prove that large volumes of water do move through the Camillus.

Clues to the nature of the water-bearing openings in the Camillus can be obtained by considering some of the circumstances where large volumes of water were obtained. About 1885, the Buffalo Cement Company located a 4-foot thick bed of gypsum only 43 feet below land surface by test drilling in Buffalo on Main Street near Williamsville. A shaft was sunk with the intention of beginning a subsurface mining operation, but when the gypsum was struck the shaft was flooded with ground water. The report is that "..... a pump with a capacity of 2,000 gallons per minute failed to make any impression upon it [the water] and the attempt was abandoned" (Newland and Leighton, 1920, 209-210).

In 1964, a gypsum mine near Clarence Center received an unexpected inflow of ground water. Several hundred gallons of water per minute continuously enters the mine at a place about midway down the entry slope. This water is pumped out by a drainage system diagrammatically shown in figure 6. Ordinarily, only small seeps occur in the remainder of the mine from roof bolts and small cracks in the roof. At a distance of more than a mile from the entry slope, the working face intersected an unplugged drill hole. Water poured into the mine at an alarming rate until the hole was plugged with much effort.

Large-yield wells, such as those at Tonawanda and North Tonawanda, obtain water from thin intervals of gypsum-bearing rock. The gypsum in the Camillus Shale obviously is related to the occurrence of large quantities of water. Gypsum is a highly soluble mineral and is

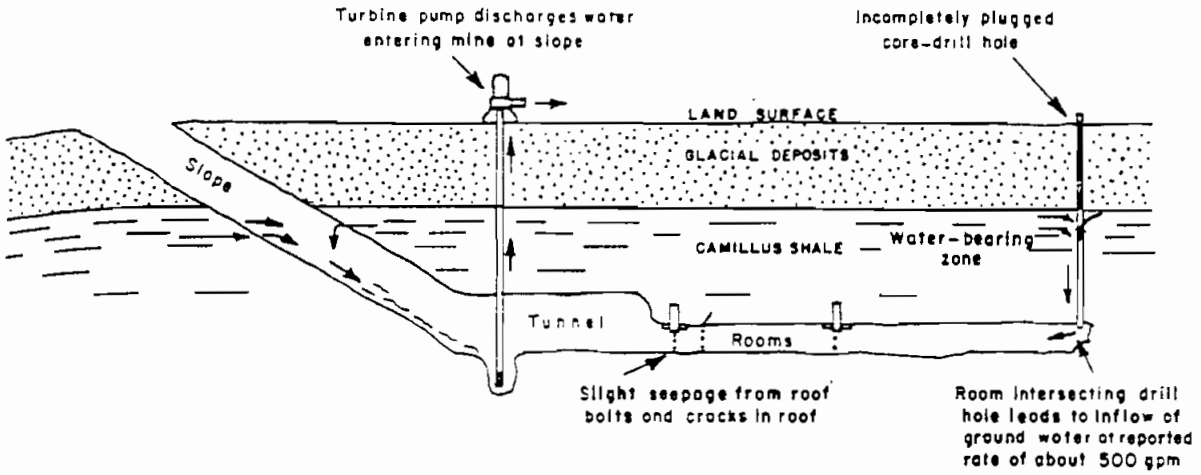


Figure 6.--Occurrence of ground water in the Camillus Shale at a gypsum mine near Clarence Center.

dissolved by circulating ground water faster than are the enclosing rocks. Very likely the openings in the Camillus that yield copious amounts of water were formed by the solution of gypsum by ground water. The water-bearing zones are mainly horizontal because most of the gypsum occurs in horizontal beds and thin zones of gypsiferous shale and dolomite. Only those gypsum zones actually exposed to circulating ground water can be widened by solution. The gypsum must be in contact with an open fracture through which the water can move. If no open fracture exists, the gypsum cannot be dissolved. The occurrence of ground water at the gypsum mine shown in figure 6 is a further illustration. The 4 1/2-foot thick bed that is mined at a depth of 66.9 feet (table 1) is dry because of the lack of vertical fractures to transmit water to it.

The solution-widened water-bearing zones occur at various depths and stratigraphic horizons in the Camillus. The existence of such zones is borne out by well data. For instance, wells 303-850-1 and -2 are 90 feet apart and obtain water from the same 2- to 3-foot thick zone at a depth of 67 to 68 feet. Such zones may be continuous for as much as 1 or 2 miles but information is not available on the extent of individual zones. The gypsum occurs principally in lenticular beds. The thicker beds may be 3 or 4 miles in lateral extent. The thinner beds can be expected to be much smaller in extent.

A zone of fracturing and solution extending several feet below the rock surface yields relatively small but sufficient water supplies for domestic use. This zone appears to be present throughout the area and is unrelated to stratigraphic position.

Hydrologic and hydraulic characteristics

The Camillus Shale forms a low topographic trough split down the axis by Tonawanda Creek. Ground water that enters the formation discharges mainly to the creek. Little water is discharged to the small, barely incised streams on the Camillus. These streams are dry much of the year.

Coefficients of transmissibility given in table 2 were computed for the Camillus Shale on the basis of specific capacities of wells penetrating a considerable thickness of the aquifer, by the method described by Walton (1962, p. 12-13).

Table 2.--Specific-capacity tests of wells finished in the Camillus Shale

Well number	Pumping rate (gpm)	Duration of pumping (hours) e: estimated	Drawdown (feet)	Specific capacity (gpm/ft)	Coefficient of transmissibility (gpd/ft)
a/ 258-853-1	1,090	e8	53	21	40,000
-2	90	--	22	4	7,000
258-855-1	500	e8	17	29	55,000
-2	1,000	e8	26	38	70,000
-3	1,500	e8	38	39	70,000
303-850-1	700	24	10	70	--
-2	660	e8	8	83	--

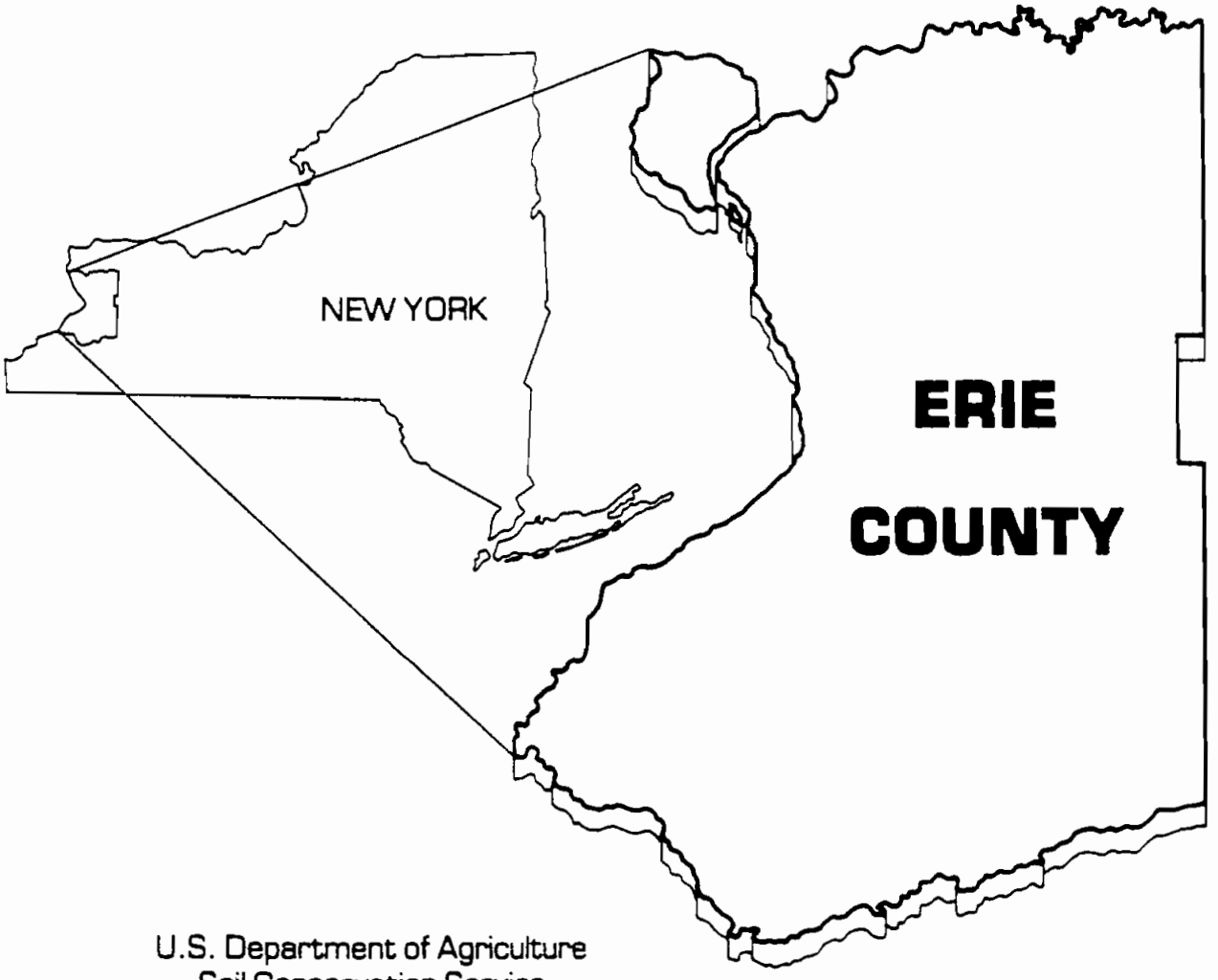
a/ Well also penetrates water-bearing zone in Lockport Dolomite.

The large specific capacities of wells 303-850-1 and -2 probably result in part from recharge induced from Sawyer Creek. Measurements of recovery of water levels in well 303-850-1 were made when well 303-850-2 was shut down after a year of continuous pumping. From these data, a coefficient of transmissibility of about 80,000 per foot and a coefficient of storage of 0.025 were computed. The computed transmissibility is about half the transmissibility that would have been indicated from specific capacity if recharge were not induced from Sawyer Creek.

A-4

General Soil Map and Interpretation, Erie County, New York, 1979.

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

42. URBAN LAND-NIAGARA, NEARLY LEVEL

Nonsoil areas, and deep, somewhat poorly drained, silty soils, on lowland plains

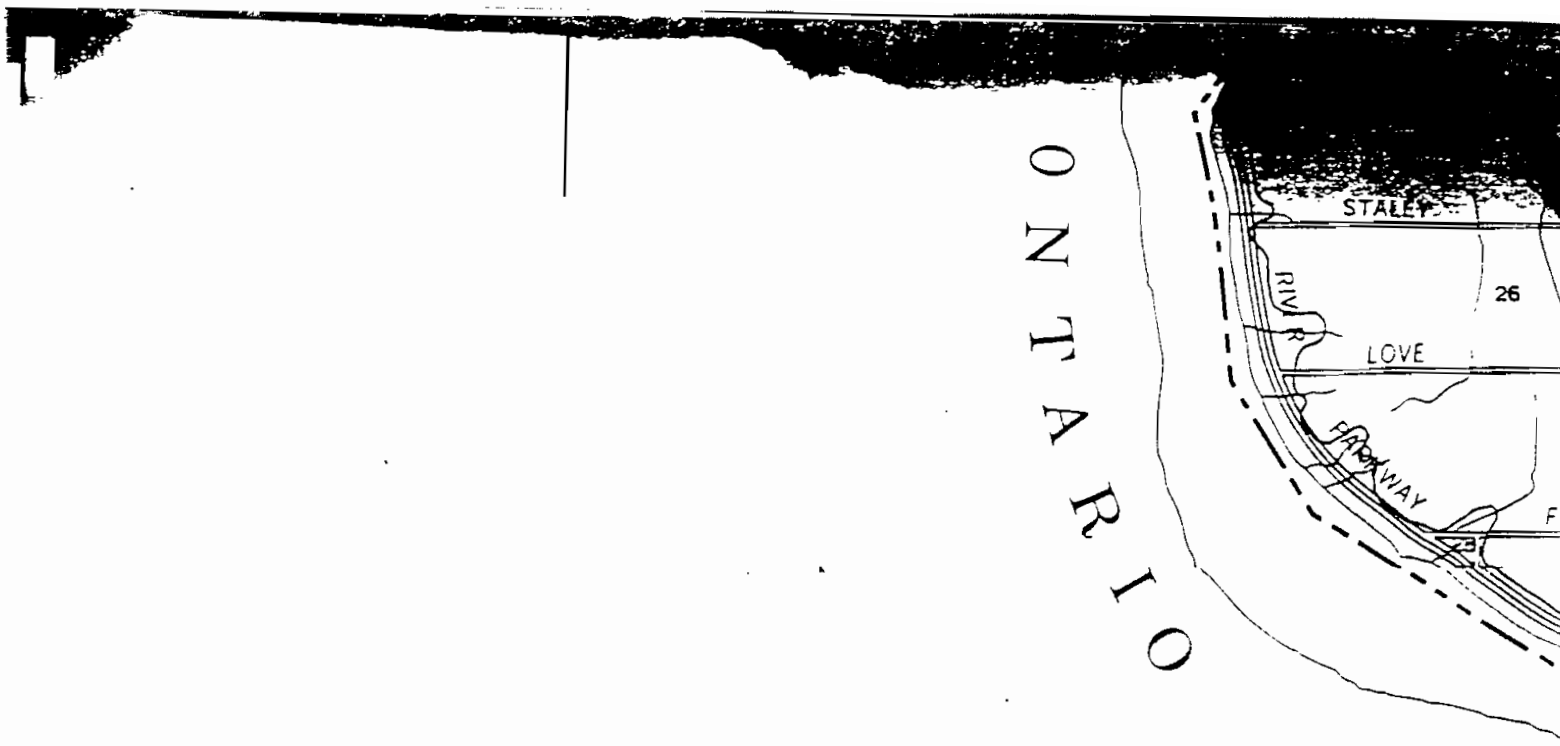
This unit is in areas of residential or commercial developments interspersed with areas of undisturbed silty soils. Most areas of this unit are in the southern part of Buffalo and a few smaller areas are in the town of Tonawanda. Slope is dominantly 0 to 3 percent.

This unit covers about 7,900 acres or 1.2 percent of the county. Urban land accounts for 70 percent of the unit, Niagara soils about 25 percent, and soils of minor extent make up the remaining 5 percent.

The Urban land portion of this unit is covered by streets, sidewalks, driveways, house foundations, parking lots, and occasional business areas or shopping plazas. In these areas the soil layers have been disturbed or removed. The undisturbed areas of this unit are dominanted by Niagara soils that formed in silty, gravel and stone-free, lake-laid sediments. The Niagara 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 (permeability) through the soil layers is moderately slow. The undisturbed soil areas are primarily in lawns, gardens, or parks.

Soils of minor extent are mainly those of the Odessa and Cosad series. Odessa soils are in a few areas where the soil deposits are dominated by clayey sediments and Cosad soils are in other areas where sandy deposits mantle silty or clayey sediments.

This unit generally has a high density of residential development. Seasonal wetness and moderately slow permeability are primary considerations for further development of this unit. These soils are also highly susceptible to frost action, and because of low strength, foundations often settle unevenly.



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

ERIE COUNTY, NEW YORK

SCALE 1:62,500

3 2 1 0 3 MILES

3 2 1 0 3 KILOMETERS

LEGEND

DEEP SOILS WITHOUT FRAGIPANS FORMED IN GLACIAL TILL AND IN LACUSTRINE MANTLED GLACIAL TILL

1 Cazenovia-Cayuga, gently sloping

2 Churchville-Remson, nearly level

3 Darien, nearly level

4 Derby, gently sloping

5 Lima-Honeoye, gently sloping


SITE
AWANDA
Creek
FRENCH
FOREST

45'

FEET

40'

[illegible]	Alton-Palmyra-Phelps, gently sloping
[illegible]	Blasdell-Farnham, gently sloping
31	Chenango-Castile, gently sloping
32	Chenango-Varysburg-Blasdell, moderately steep
33	Red Hook, nearly level

DEEP SOILS FORMED IN RECENT ALLUVIAL DEPOSITS

34	Teel-Middlebury, nearly level
35	Wayland, level
36	Wayland-Farnham, nearly level

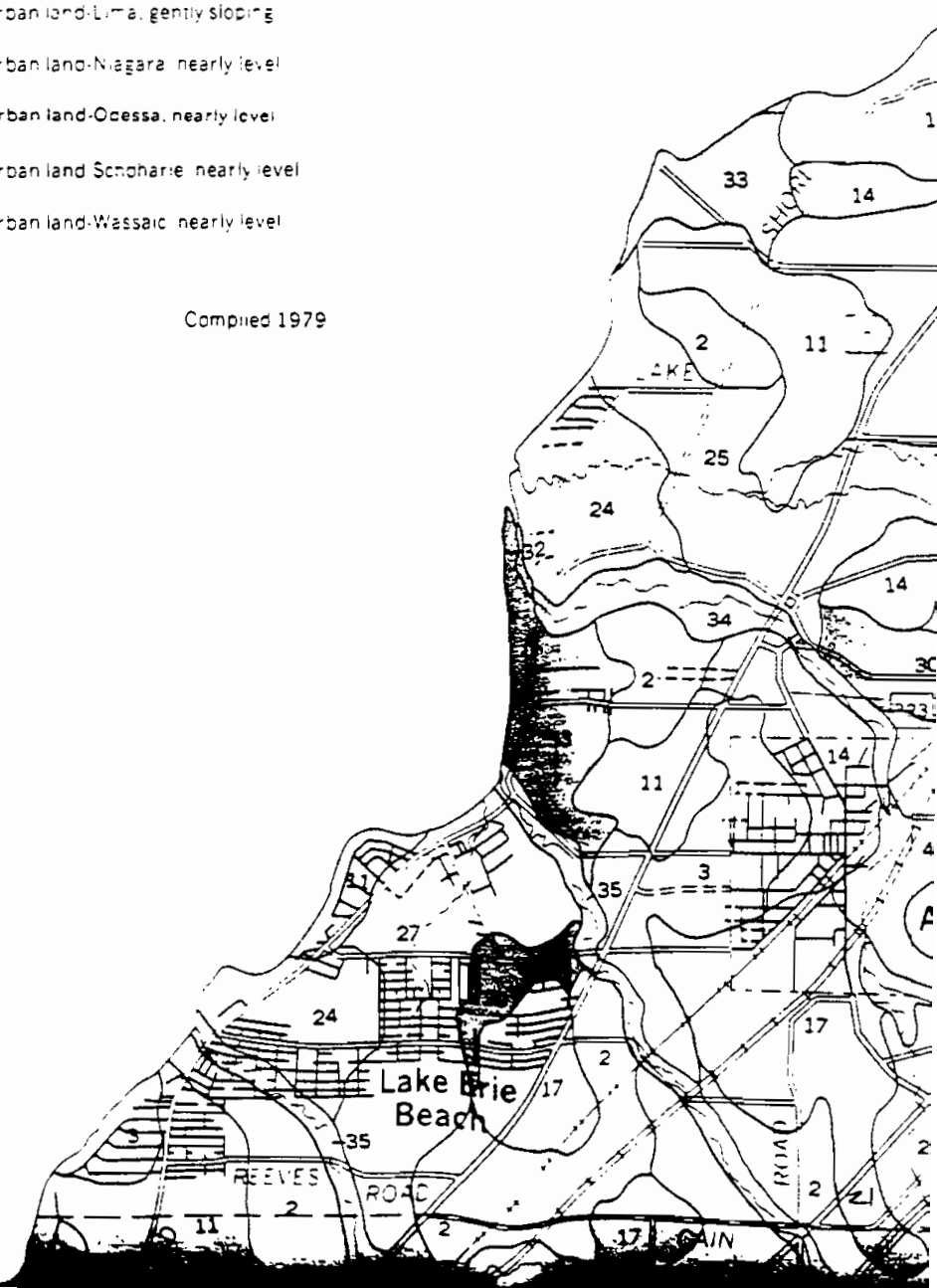
DEEP SOILS FORMED IN ORGANIC DEPOSITS

37	Palms, level

MIXED URBAN LAND AND SOIL AREAS

38	Urban land
39	Urban land-Churchville, nearly level
40	Urban land-Colonie, gently sloping
41	Urban land-Lima, gently sloping
42	Urban land-Niagara, nearly level
43	Urban land-Odessa, nearly level
44	Urban land-Schoharie, nearly level
45	Urban land-Wassaic, nearly level

Compiled 1979



A-5

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

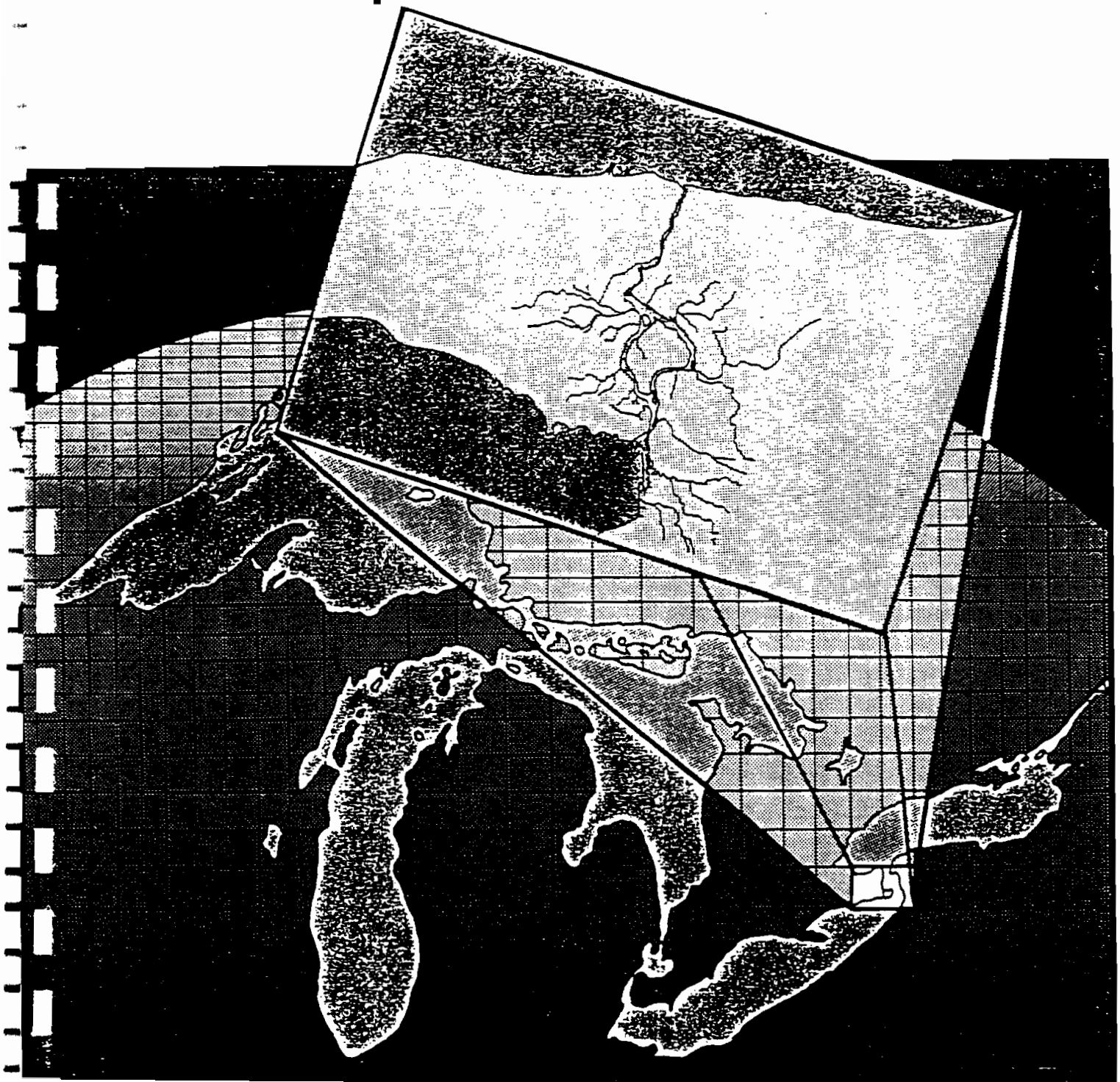
United States
Environmental Protection
Agency

Program Office
536 South Clark Street
Chicago, Illinois 60605

March 1985

EPA

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



130. EXOLON CORPORATION (Literature review) NYSDEC 915023

General information and chemical-migration potential.--The Exolon Company, on East Niagara Street in the City of Tonawanda, manufactures aluminum oxide and silicon carbide abrasives for grinding wheels and general industrial use. The company was reported to have disposed of refractory bricks, iron tailings, and coal cinders in a low area of approximately 1.5 acres.

The potential for contaminant migration is indeterminable from the data available.

Geologic information.--The soils are lacustrine silt, sand, and clay deposits. The site has one well, which is reported to be 140 ft deep. Information provided by the site owner indicates the following geologic log:

Depth (ft)	Description
0 - 4	sandy loam
4 - 80	clay and silt
80 - 86	sand
86 - 140	bedrock (Camillus Shale)

Hydrologic information.--Ground-water data are scant. Depth to water has been reported to be approximately 4 ft. The water table probably fluctuates seasonally during spring and other wet periods. Horizontal flow would be greatest during these periods, particularly in the sandy loam. The direction of flow would probably be northward toward the Erie-Barge Canal. Ground water could flow vertically through the sandy loam but would be impeded by the deeper clay and silt layer.

Chemical information.--No chemical information is available, and no monitoring has been planned.

131. FMC CORPORATION (USGS field reconnaissance)

General information and chemical-migration potential.--The FMC Corporation site, in the town of Tonawanda, contains disposal pits for approximately 100 tons of persulfates, perborates, sodium carbonate peroxide, hydrogen peroxide, peracetic acid, calcium and zinc peroxide, magnesium, urea, pyrophosphate, and dipicolinic acid. The site was in operation from 1964-76. The pits have since been closed.

The potential for downward migration is probably limited by the underlying clay unit. The potential for offsite lateral migration is indeterminable.

Geologic information.--The site consists of a glacial lacustrine deposit overlying bedrock of Camillus Shale. The depth to bedrock is greater than 60 ft.

A-6

New York State Community Water System Sources, NYSDOH, 1982.

UEC - 5

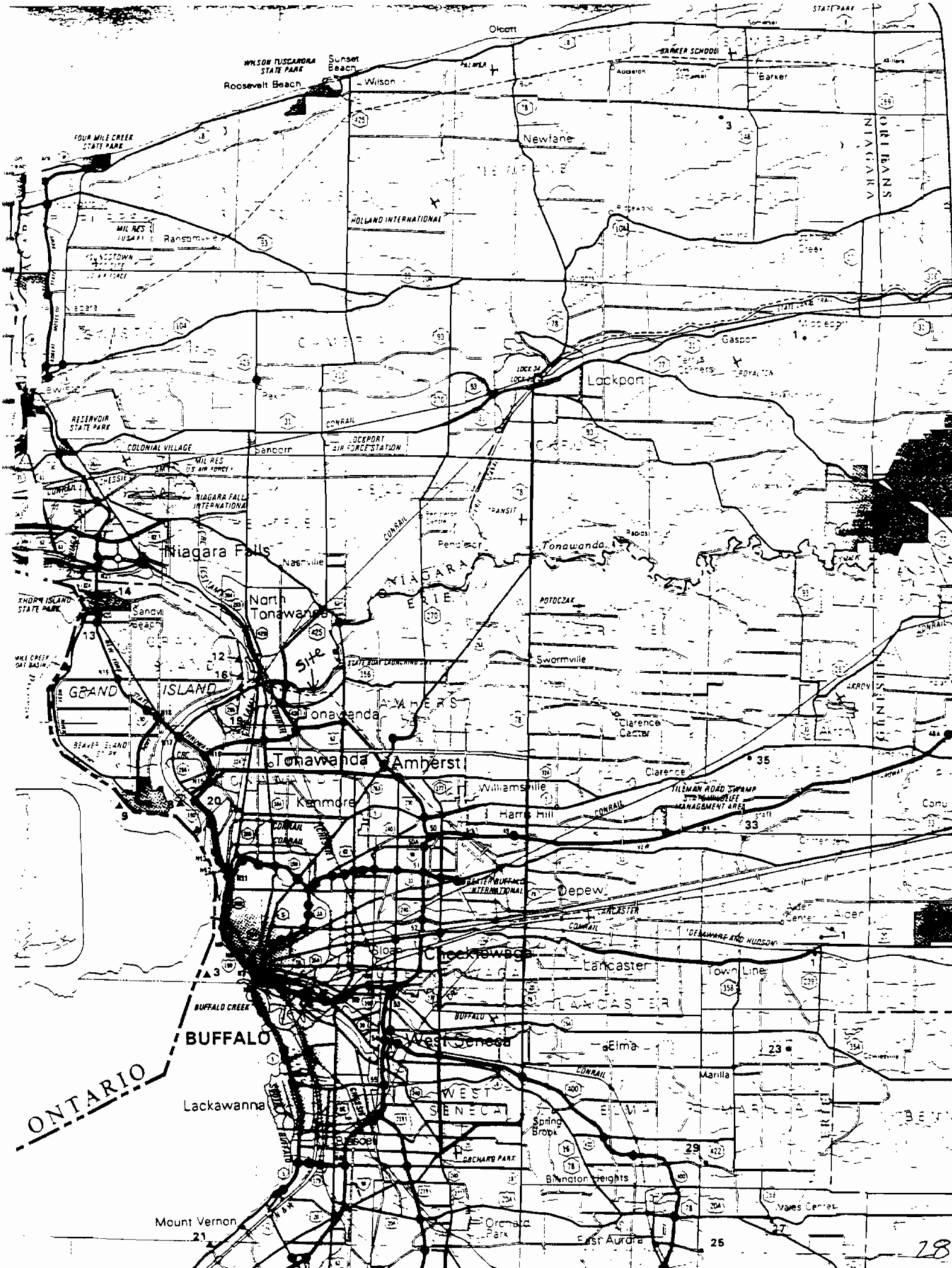
New York State Atlas of Community Water System Sources 1982

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

ID NO	MUNIT	R SYS	POPULA	SOL	
Municipal Community					
	Akron Village (See No 1 Wyoming Co, Page 10)		3640		
1	Alden Village		3060		Wells
2	Angola Village		8500		Lake Erie
3	Buffalo City Division of Water		357870		Lake Erie
4	Calfee 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		600		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

ID NO	MUNITY	SYSTE	POPULATIO	SOURCE
Municipal Community				
	Lockport City (See No 12, Erie Co)		25000	
1	Middleport Village		2000	Wells (Springs)
	Niagara County Water District (See No 13, Erie Co)		60	
2	Niagara Falls City (See also No 14 Erie Co)		77386	Niagara River - East
	North Tonawanda City (See No 16 Erie Co)		36000	
Non Municipal Community				
3	Country Estates Mobile Village		28	Wells

27


Olcott
Sunset Beach
Roosevelt Beach
Wilson
Barker
Newfane
Ransomville
Lockport
Gasport
Niagara Falls
North Tonawanda
Tonawanda
Grand Island
Amherst
Williamsville
Kenmore
Harris Hill
Clarence
Clarence Center
Depew
Cheektowaga
Lancaster
Town Line
West Seneca
Elma
Marilla
Lackawanna
Buffalo
Ontario
Mount Vernon
Orchard Park
East Aurora
Spring Brook
Niagara
Orleans
Erie
Genesee
Wyoming
Site

A-7

Phase I Investigation, Exolon Corporation, Tonawanda, Erie County, New York, Recra Environmental, Inc. for NYSDEC, 1986.

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

Exolon Corporation **Site No. 915023**
Tonawanda **Erie County**

DATE: February 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.

Section 2

Documents Cited

DOCUMENTS CITED

B-1 Erie County Department of Environmental Planning Hazardous Waste Site Profile, February 1982.

B-2 Letter from Robert F. Taylor of Exolon to Peter Millock of NYSDEC concerning Materials in Landfill, June 20, 1979.

B-3 Report of Pumping Tests, Ehmke Well Drillers, Inc., March 27-28, 1978.

B-4 Well Information compiled by Exolon, April 5, 1978.

B-5 Groundwater Data, Ecology and Environment, Inc., April 18, 1978.

B-6 Groundwater Data, Recra Research, Inc., January 29, 1979.

B-7 Letter of Documentation to Mr. Skip Evans of the Town of Tonawanda, from Sheldon Nozik of Recra Research, Inc., concerning Residential Water Supply Source, December 10, 1985.

B-8 Initial Site Inspection Report for the Exolon Company, prepared by Erie County Department of Environment Protection, no date.

B-9 Industrial Chemical Survey and SPDES Permit information, NYSDEC, February 24, 1977.

B-10 Erie County Department of Environmental Planning memo to Anthony Voell from Thomas Hershey concerning investigation strategy of the Exolon Company Site, April 7, 1986.

B-11 Correspondence between Exolon and NYSDEC Concerning Lagoon De-Watering and Closeout, June 1988 - January 1989.

B-12 Analytical Data of Lagoon Sludge, October 14, 1988.

B-13 Analytical Data from Two Shallow Subsurface Soil Samples collected October 17, 1989.

B-14 Site Interview Forms

B-1

Erie County Department of Environmental Planning Hazardous Waste Site Profile, February 1982.

HAZARDOUS WASTE SITE PROFILE

EXOLON CORP.

1000 East Niagara St.

City of Tonawanda

Site # 915023

Prepared by Erie County

Dept. of Env. & Planning

FEB. 1982

EXOLON COMPANY
1000 EAST NIAGARA STREET
CITY OF TONAWANDA, NEW YORK
SITE # 915023

The Interagency Task Force (IATF), in Volume III of Hazardous Waste Disposal Sites in New York State, reports that refractory brick, iron oxide, and coal cinders were disposed of in low areas on the Exolon Company property. The site is coded F indicating that no in-place toxics are present in dangerous amounts and that no further action would be required.

BACKGROUND INFORMATION

The Exolon Company is located on East Niagara Street in the City of Tonawanda approximately 1000 feet west of the city's corporate boundary (Exhibit 1).

The company manufactures artificial aluminum oxide and silicon carbide abrasives for grinding wheels and general industrial use.

Between 1949 and 1952, Exolon disposed of refractory brick from plant kilns, iron tailings (removed during the processing of aluminum oxide) and coal cinders in a low area located in the front of their property (Exhibit 2). The IATF reports that the disposal site is approximately 1.5 acres in size.

AERIAL PHOTOGRAPHY

A review of aerial photography records for the years 1951 and 1958 did not reveal any indication of landfilling in the study area.

SITE INSPECTION

On December 21, 1981, this Department performed an on-site inspection of the former disposal area. The site has been closed in conformance with Part 360 of the Environmental Conservation Law.

SOILS AND HYDROGEOLOGIC DATA

The General Soil Map and Interpretations for Erie County by the U.S.D.A. Soil Conservation Service describes the soil in the area as being of the Niagara Unit. These soils are lakelaid silt, sand and clay deposits. Niagara Soils are somewhat poorly drained and have a seasonal high watertable in the upper part of the subsoil during the Spring and other excessively wet periods. The rate of permeability through the soil layers is moderately slow.

records? →

Exolon officials stated that there is four (4) feet of sandy loam over clay in the landfill area.

In 1979, Exolon installed a well for process water on the southeast portion of their property. The well is reported to be 140 feet deep. Although no boring data is available, information from Exolon indicate that clay and silt are the main soil types. Between the depths of 80-86 feet water was being drawn up with sand. Consequently, it appears that a sand lens lies beneath the more impermeable upper soils. As the sand in the water was undesirable for Exolon's needs, the well was drilled into bedrock. The bedrock is shale and lies at a depth of 86 feet. This well is no longer in use. No new well has been installed.

Surface water within one (1) mile radius of the site includes the Erie Barge Canal which is 200 feet to the north, a protected wetland that is 1000 feet to the south and Ellicott Creek which is 3000 feet to the south. Lateral mitigation through the sandy loam layer to the Erie Barge Canal could occur. However, no degradation of surface water is expected.

The site is not within a flood hazard area.

Surface drainage from the landfill area would most likely be to the Erie Barge Canal. No large surface water drainage patterns were observed during the site inspection.

Given the type of soil in the area of the landfill, downward percolation of water through the sandy loam would occur; however, the deeper more impervious clay layer would preclude any further downward movement to the groundwater.

GEOGRAPHIC DATA

The land use within a one (1) mile radius of the site is industrial residential and commercial. The population density would be greater than 10,000. All residents receive their drinking water from a municipal system.

DIRECT CONTACT

The area is posted as private property. No problems are anticipated.

FIRE AND EXPLOSTION POTENTIAL

No potential for fire or explosion can be associated with the disposal area.

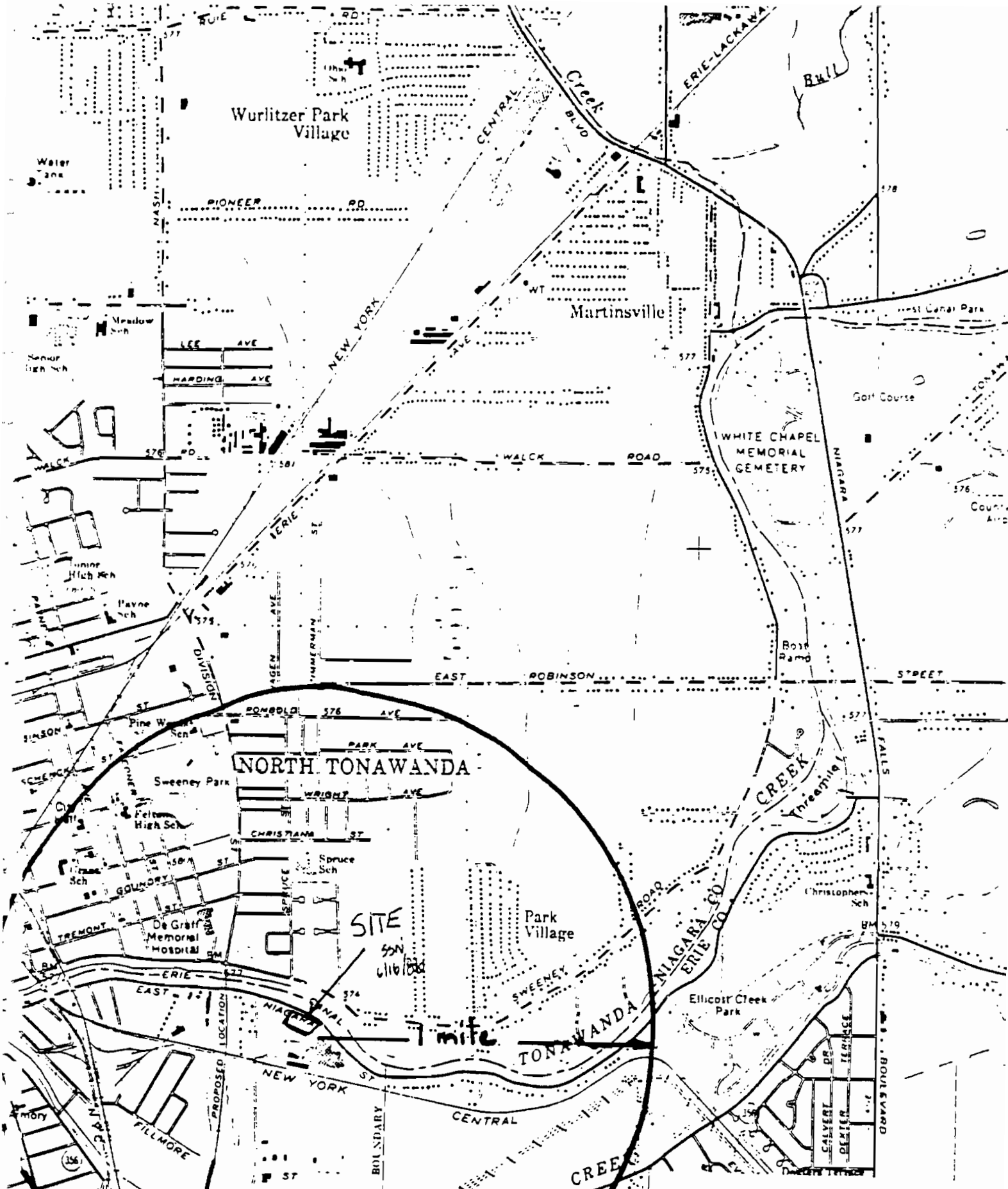
CONCLUSION

The types of material known to be landfilled at this area are not considered toxic or hazardous.

There is no evidence that hazardous wastes were ever disposed of on-site, consequently there appears that no environmental degradation can be associated with this site.

RECOMMENDATION

No further action or remedial work is recommended at this site.


Wurlitzer Park Village
Martinsville
NORTH TONAWANDA
ELLICOTT
TONAWANDA
Park Village
Ellicott Creek Park
SITE
1 mile
EXHIBIT 1
U.S.G.S. 7.5 min.
Tonawanda East Quad
DEP
Exelon Corp
February 1982

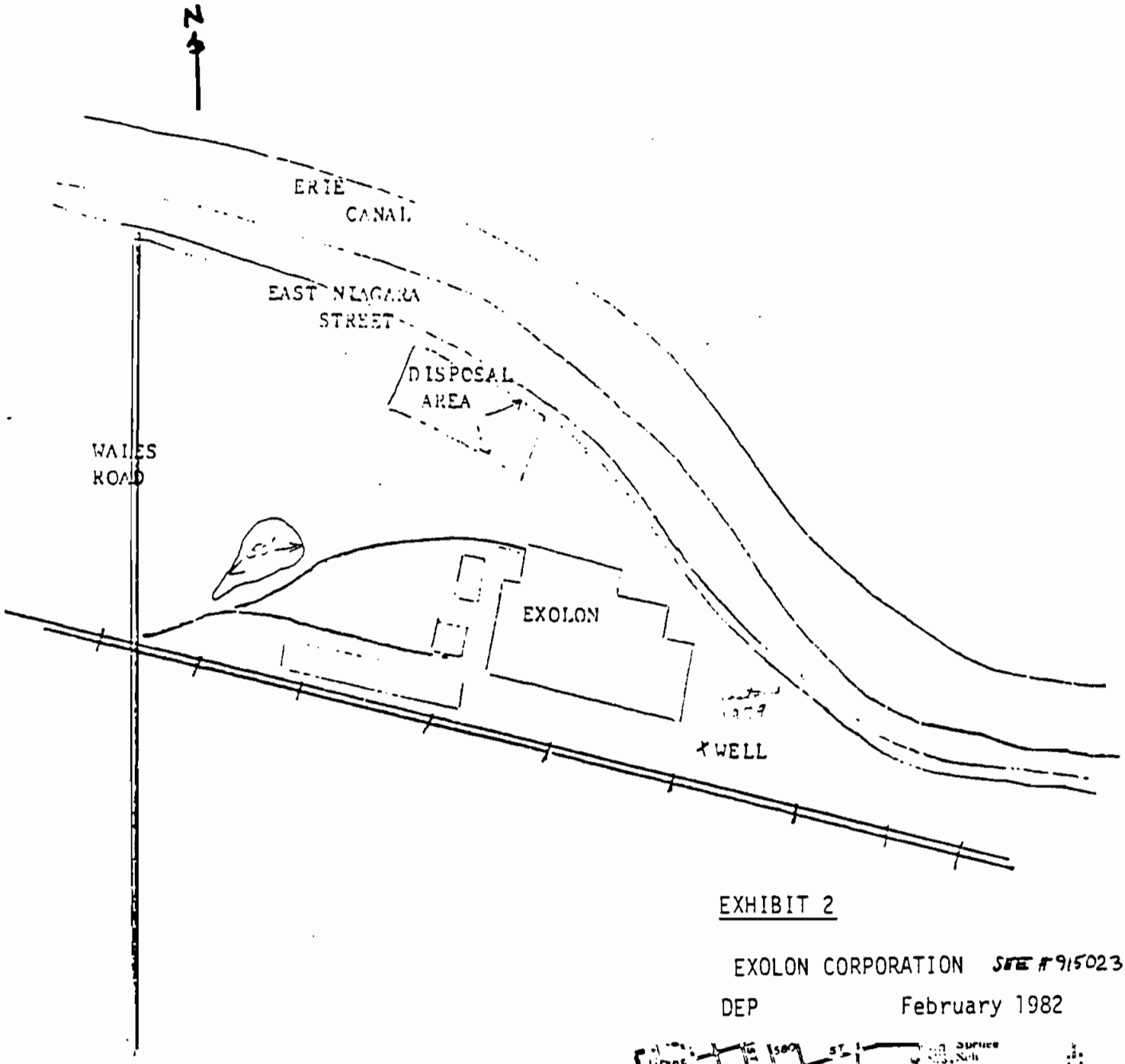


EXHIBIT 2

EXOLON CORPORATION SITE # 915023

DEP February 1982

B-2

Letter from Robert F. Taylor of Exolon to Peter Millock of NYSDEC concerning Materials in Landfill, June 20, 1979.

EXOLON

THE EXOLON COMPANY

MANUFACTURERS OF FUSED ALUMINUM OXIDE AND SILICON CARBIDE

TONAWANDA, NEW YORK 14150, U. S. A.
TELEPHONE: 716 693-4550
TELEX: 91-217

June 20, 1979

Mr. Peter Millock
Office of Council
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

SUBJECT: Hazardous Wastes Sites

Dear Mr. Millock:

Our company, The Exolon Company, has been listed as a dump site for 'Possible Significant Quantities' of hazardous wastes. We feel this is incorrect and would like our name removed from the state listing.

I have had telephone conversations with Mr. Jack Tygert, Engineer for the New York State on toxic wastes, Buffalo Office, and my understanding is that we were listed because at some time a document was filed with the Erie County Environment and Planning Board that we used some of our product as landfill. Because our product was an 'unknown' to the people making the study of dump sites we were listed as a potential problem.

Our products are Artifical Aluminum Oxide and Silicon Carbide Abrasives for grinding wheel and general industrial use. These are inert and have no toxic properties.

Mr. Tygert was going to obtain a copy of offending document for our review but has apparently not had any success. Any help your office can provide to resolve this issue would be very much appreciated. We will provide any specific information required to substantiate our feeling of being improperly classified as a disposal site.

Very truly yours,

Robert F. Taylor
Works Manager

cc: Mr. Jack Tygert
Engineer - Toxic Wastes

RFT/vlh

B-3

Report of Pumping Tests, Ehmke Well Drillers, Inc., March 27-28, 1978.

EHMKE WELL DRILLERS, INC.
104 Main Street
SILVER CREEK, NEW YORK 14136
Area Code 716 934-2658

77' casing
63' hole in rock
140'

Well depth: 140 ft. ←

REPORT OF PUMPING TEST DATE: March 27-28, 1978

OWNER: Exolon Co.
1000 East Niagara St.
Tonawanda, NY 14150

LOCATION: Same

WELL # 1 FOREMAN: Ronald Metxger DURATION OF TEST: 24. Hours

TYPE WELL: [XX] Gravel [XX] New [XX] Open Hole [X] Gravel-packed [X] Developed
[XX] Rock [ ] Old [XX] Screened [ ] Natural-pack [ ] Perforated

CASINGS: Length: 77' (Outer) 8" I.D. 8-5/8" O.D. Grouted: [ ] Yes
(Inner) _____ I.D. _____ O.D. [XX] No

SCREENS: [X] Telescope Size 8" x 6' long [X] Stainless steel [ ] Everdur Bronze
[ ] Std. Pipe Size _____ [ ] Low-carbon steel [ ] Armco galv. iron
[ ] Slotted Casing _____ [ ] Red Brass [ ] Plastic
Screen I.D. 6-5/8" Screen O.D. 7⅛" Length 6'9" Overall 17'7"
[XX] Sump casing 9' of 7" OD [ ] Closed bail bottom [ ] Lead Packer top
[XX] Flush tube 70.5' to 73'0' [XX] Weld ring top to 7" OD casing.
[ ] K Packer top Slot size: #100

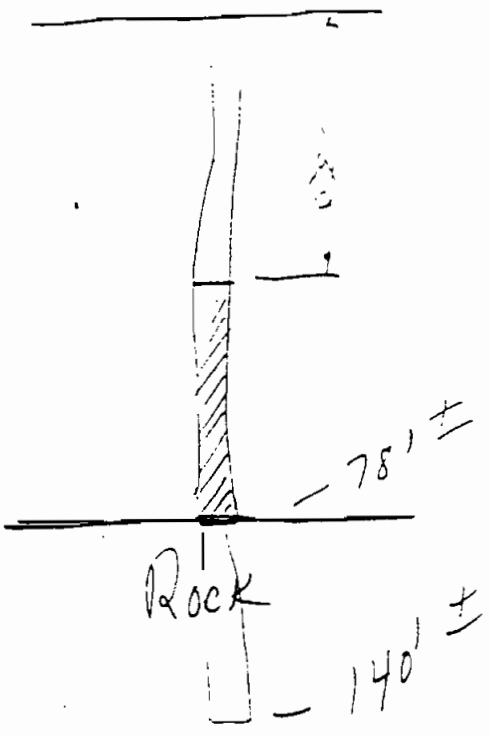
TYPE PUMP: [XX] Turbine [ ] Submersible [ ] Suction DISCHARGE: 5" pipe
Top of swadged 7" OD risor - 70½' Orifice: 3"
DEPTH READING DEVICE: [ ] Altitude gauge [X] Electric probe
TOP OF SCREEN @ 76' TOP OF BOWLS @ 61'4"
STATIC WATER LEVEL 7'-6" WATER SAMPLE TAKEN BY bottom of bowl @ 65'

	TIME OF DAY	BACK PRESS	ORIFICE	GPM	ALTITUDE	WATER LEVEL	OBS.HOLE
3-27-78	11:00 AM	--	3"	50	--	9'	Black to grey
	11:30	--	3"	50	--	9'	Clear
	12:00 PM	--	"	60	--	12'	Brown
	12:30	--	"	60	--	12'	Clear
	1:00	--	"	75	--	14'	Brown
	1:30	6½'	"	87	--	15'6"	Clear to cl
	2:00	6"	"	85	--	16	Cloudy
	2:30	7"	"	92.	--	19'	clear to cl
	3:00	7"	"	92	--	19'4"	cloudy
	3:30	7"	"	92	--	19'6"	cloudy
	4:00	8"	"	98	--	21'	clear to lt
	4:30	9"	"	104	--	23'	clear to br
	5:00	10"	"	110	--	30'	clear to br
	5:30	10"	"	110	--	30'	cloudy to b
	6:00	10"	"	110	--	31'	cloudy to b
	6:30	11"	"	116	--	31'	clear to cl
	7:00	12"	"	120	--	31'	cloudy to b
	7:30	13"	"	125	--	31'2"	cloudy to b
	8:00	13"	"	125	--	31'2"	cloudy to b
	8:30	14"	"	130	--	31'2"	cloudy to b
	9:00	15"	"	134	--	31'4"	cloudy to b
	9:30	16"	"	139	--	34'4"	cloudy to b
	10:00	17"	"	143	--	34'6"	cloudy to b

EHMKE
WELL DRILLERS
Silver Creek

	TIME OF DAY	BACK PRESS	ORIFICE	GPM	ALTITUDE	WATER LEVEL	OBS.HOLE
3-27-78							
	10:30	18"	3"	147	--	34'10"	cloudy to brow
	11:00	19	"	151	--	45'10"	cloudy to brow
	11:30	19	"	151	--	48'	cloudy to brow
-28-78	12:00	20	"	155	--	52'2"	cloudy to brow
	12:30 AM	20	"	155	--	53'6"	cloudy
	1:00	20	"	155	--	55'	cloudy
	1:30	14	"	130	--	54'	cloudy
	2:00	14	"	130	--	54'	clear
	2:30	11	"	116	--	59'	cloudy
	3:00	11	"	116	--	59'	clear
	3:30	10" - 11"	"	110-116	--	59'	clear
	4:00	10"	"	110-116	--	60'	clear
	4:30	10"	"	110	--	59'	clear
	5:00	10"	"	110	--	59'	clear
	5:30	10"	"	110	--	59'	clear
	6:00	10"	"	110	--	59'	clear
	6:30	10"	"	110	--	59'	clear
	7:00	10"	"	110	--	59'	clear
	7:30	9" - 10"	"	110	--	60'	clear
	8:00	9" - 10"	"	110	--	59'	clear
	8:30	9" - 10"	"	110	--	59'	clear
	9:00	9" - 10"	"	110	--	59'	clear
	9;30	9" - 10"	"	110	--	59'	clear
	10:00	9" - 10"	"	110	--	59'	clear
	10:30	9" - 10"	"	110	--	59'	clear
	11:00	9" - 10"	"	110	--	59'	clear

Rebound 5 minutes to 10'



EXOLON COMPANY
1000 East Niagara Street
Tonawanda, N. Y. 14150

WATER SUPPLY # 1

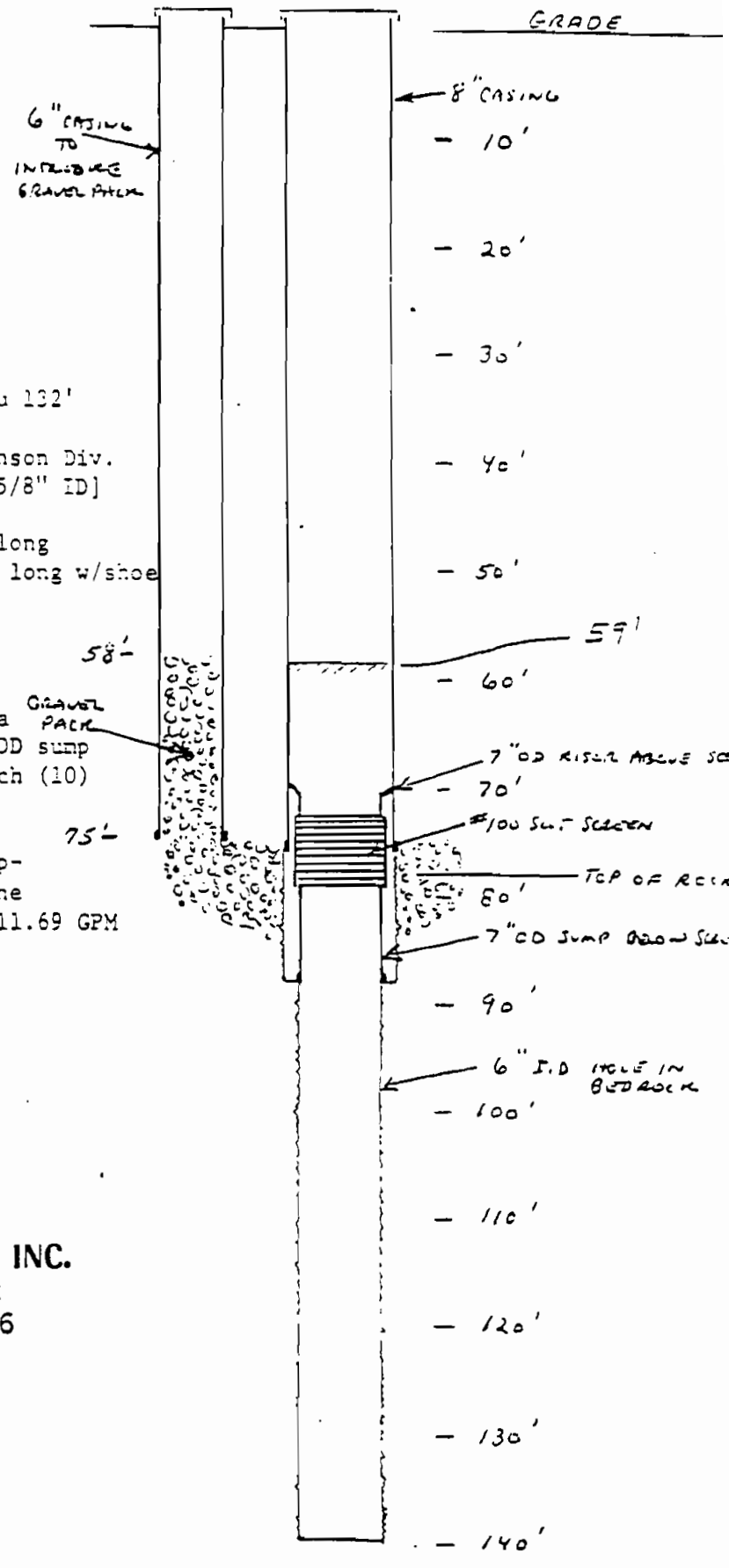
Completed: 3-28-78

Driller: Ronald Metzger
Tool Dresser: Jack Will

Total depth: 140'
Bottom of 8" hole: 88'
Top of Bedrock: 78'
Sand & gravel vein: 72' thru 78'
Bedrock Vein: 106' (gypsum break)
132' (limestone)
Note: Extreme hard rock: 130' thru 132'

Screen: 8" telescope size UOP Johnson Div.
100 slot throughout [6-5/8" ID]
stainless steel material
riser pipe of 7" OD 2'7" long
sump casing of 7" OD 9'0" long w/shoe
screen length: 6'0"
overall length: 17'7"
length exposed: 3'0"
Note: gravel stop ring at bottom of screen area and slots in the 7" OD sump cut by acetylene torch (10)

Final pumping test: 3-27 & 28-78
Gauged 110 GPM at 59' pumping level. 24 hour test. The average rate of flow was 111.69 GPM



VERTICAL SCALE
1/4" = 4'

EHMKE WELL DRILLERS INC.
Box 4, 104 Main Street
Silver Creek, N. Y. 14136
934-2658

B-4

Well Information compiled by Exolon, April 5, 1978.

TEST OF WELL WATER

	AT WELL ECOLOGY ENVIRONMENT 4-18-78	TREATED EXOLON 1-5-79	TREATED RECRA 1-29-79	TREATED EXOLON 5-1-79
PH	8.1	6.9	7.4	6.8
CHLORIDES	NO TEST	3500	NO TEST	NO TEST
SULFATES		1880	"	"
SULFIDES		NONE	0.9	.285
Fe		2.83	NO TEST	NO TEST
MERCURY (Mg)		NONE		"
CALCIUM (CA)		1327		948
MAGNESIUM (MN)		NONE		NO TEST
ALUMINUM (AL)		NONE		"
AMMONIA (N)	1.16	NO TEST	4.5	6.0
TOTAL SOLIDS	5790	10,005	12,700	9835
DISSOLVED SOLIDS	5737	NO TEST	12,600	9819
DISSOLVED OXYGEN	<1.0		8.95	NO TEST
TOTAL COLIFORM	<2.0		<20	
FECAL COLIFORM	<2.0		<20	
TOTAL CYANIDE	0.003		<0.3	
TOTAL CADMIUM	NO TEST		<0.008	
TOTAL COPPER	0.026		0.027	
TOTAL ZINC	0.010		0.013	
TOTAL ALKALINITY [CA CO_3]	63.0		62.1	
IRON CYANIDES	<0.010		<0.3	NO TEST
SETTABLE SOLIDS	NO TEST		NO TEST	<0.10
UNSETTABLE SOLIDS	"		"	16
	mg/l	mg/l	mg/l	mg/l

SOLIDS DISCHARGE TO CANAL (UNSETTABLE SOLIDS) GAL H_2O/MIN

FORMULA $8.34 \times 16 \left[\frac{60 \times 60 \times 24}{1\,000\,000}\right]$ = LBS/DAY

— 24 HR DAY ONLY

$133.44 \times 0.0864 = 11.53$ LBS/DAY

4-5-78

Water Well

Cost to date :

	$
Ehmke Well Drillers	9,669.16
Ecology + Environment (water Test)	266.83

The above listing does not include a pump, water treatment or any piping or metering.

Observations concerning the quality of the well water.

1. Preliminary analyses by Explore Chem Lab. indicate a high level of unwanted solids : (Nº V10 1-10-78)

   A. Well depth of 80' range between 980 P.P.M TO 4,700 P.P.M depending on the volume drawn from the well. The 980 P.P.M would be in the range of 80-100 gals/MIN. flow. The 4,700 P.P.M. would be at 125 - 150 gal/MIN. ← TEST Nº V 2-7-78

Note : Carried in sediment - should not be

- Susp. Solid 50 ppm - 75 ppm may ave → for monthly period (+ Test/mo.)

Settle acid .1 ML/L MAX. → PPM

Observations continued:

2. Hardness:
   A. at 75' level hardness of 21
   B. at 140' level hardness of 75
   C. City water hardness of 9

3. PH:
   A. at 75' = 7.1 (Taken 1-10-78)
   B. at 75' = 7.7 (Taken 2-7-78)
   C. at 140' = 7.5 (Taken 3-30-78)

4. Fe:
   A. @ 75' = 10.11 (Taken 1-10-78)
   B. @ 75' = NOT TESTED (Taken 2-7-78)
   C. @ 140' = Trace (Taken 3-30-78)

5. Mn (Manganese) none present @ 140' (only level tested)

6. Mg (Mercury) none present @ 140' (only level tested)

7. Ca — % by wt.
   A. at 75' = 15.13 (Taken 1-10-78)
   B. at 140' = 0.36 (Taken 3-30-78)

FORM SCS 1

THE EXOLON COMPANY

TONAWANDA, N. Y.

DATE 1/10/78

NO. Y-10

REQUEST TO LABORATORY

TO TCL FROM WJR COPIES TO GP, AG, WJR, PLN, SEL

SOURCE Exolon - Tonawanda PRODUCED BY

DESCRIPTION OF SAMPLE:

Sample of Exolon new H_2O well #1 at 75 ft.

INFORMATION REQUESTED:

pH Hardness Fe Ca
Chlorides Total Solids Sp. Gr.

REPORT:

pH	7.1
CHLORIDES	PRESENT
TOTAL SOLIDS	984 ppm
Fe	10.11
Sp. Gr.	1.0
Ca	15.13

Water drawn from well at rate of 80-100 gal/min. WJR

DATE COMPLETED 1/18/78 BY R A Jaworski

49

FORM SCS 1

THE EXOLON COMPANY

TONAWANDA, N. Y.

DATE 2/7/78

NO. V-49

REQUEST TO LABORATORY

TO TCL FROM AG COPIES TO GP, AG, PLN, SEL

SOURCE EXOLON - TONAWANDA PRODUCED BY

DESCRIPTION OF SAMPLE:

SAMPLE OF EXOLON NEW H_2O WELL #1 AT 75 FT.
SAMPLE TAKEN AT 11:00AM ON 2/1/78 BY A.G.

INFORMATION REQUESTED:

CHEMICAL ANALYSIS

REPORT:

[redacted] WHEN WELL H_2O IS SPRINKLED ON HEATED HOT PLATE IT LEAVES A LARGE RESIDUE. ODOR GIVEN OFF SMELLS LIKE STEAM.

pH 7.7

CHLORIDES - VERY POSITIVE

TOTAL SOLIDS - 4705 PPM

SULFUR - TRACE

KCl - TRACE

$CaCl_2$ - 36.34

NaCl - 18.86

Water drawn from well at rate of 120-150 GPM. AG

2/7/78 RA Jamieson

DATE COMPLETED BY

50

FORM SCS 1

THE EXOLON COMPANY
TONAWANDA, N. Y.

DATE 5/1/79
NO. W-137

REQUEST TO LABORATORY

TO TCL FROM RT COPIES TO AG, RT, PLN

SOURCE Exolon, Tonawanda PRODUCED BY

DESCRIPTION OF SAMPLE:
Sample of Exolon Well Water after Nalco treatmen
5/1/79.

INFORMATION REQUESTED:
1. Calcium ($CaCO_3$).
2. Solids-settable.
3. Solids-un-settable.
4. Solids-Total
5. Ammonia
6. Sulfides
7. pH
8. identify solids

REPORT:

1. Calcium ($CaCO_3$)	948 ppm
2. Solids-settleable	less than 0.10 ml/l
3. Solids-unsettleable	16 ppm
4. Solids-Total	9835 ppm
5. Ammonia	6.00 mg/l
6. Sulfides	.285 mg/l
7. pH	6.8

8. THE BLACK SOLIDS ARE PROBABLY SULFIDE COMPOUNDS

DATE COMPLETED 5/3/59 BY RA Jaworski

FORM SCS 1

THE EXOLON COMPANY

TONAWANDA, N. Y.

DATE 1/5/79

NO. W-7

REQUEST TO LABORATORY

TO TCL FROM RT COPIES TO AG, RT, PLN, SEL, GP

SOURCE Exolon - Tonawanda PRODUCED BY

DESCRIPTION OF SAMPLE:

Well Water from Pipes Over Cooler #9.
1st day of Operating on Well H_2O. RS/AG 1-4-79

INFORMATION REQUESTED:

ph, Chlorides, Sulfates, Sulfides, Fe, Mg, Ca, Mn, Al, Total Solids

REPORT:

	UNTREATED	TREATED
pH	7.3	6.9
CHLORIDES	4000 P.P.M mg/liter	3500 P.P.M mg/liter
SULFATES	1680 P.P.M mg/liter	1880 P.P.M mg/liter
SULFIDES	NONE	NONE
Fe	2.63 P.P.M mg/liter	2.83 P.P.M mg/liter
Mg	NONE	NONE
Ca	13.59%	13.27% = 1327 PPM
Mn	NONE	NONE
Al	NONE	NONE
TOTAL SOLIDS	10,980	~~10,000~~ 10,005

1/24/79 RA Jaworski

DATE COMPLETED BY

B-5

Groundwater Data, Ecology and Environment, Inc., April 18, 1978.

ecology and environment, incorporated

P. O. Box D Buffalo, New York 14225 (716) 632-4491 Telex 91-9183

Anchorage / Billings / Caracas / Houston / Tokyo / Washington

April 18, 1978

Mr. A.W. Gerbec
Exolon Company
1000 East Niagara Street
City of Tonawanda, New York 14120

Dear Mr. Gerbec:

Attached is a Data Summary of laboratory analysis conducted on one (1) sample received at our laboratory on April 3, 1978.

Analysis was performed according to the most recently published guidelines of Title 40, Code of Federal Regulations, Section 136.3, "Identification of Test Procedures." These methods are designated by the Environmental Protection Agency as acceptable for wastewater characterization.

Very truly yours,

C.R. Termini

C.R. Termini
Laboratory Manager

CRT/mr

Enclosure

DATA SUMMARY

mg/l (Parts Per million)

MOST PROBABLE NUMBER

EX-741

Characteristic	Well Water		ALLOWABLE LIMIT
Lab Number	443		
pH Units (Field)	8.1	OK	8.500
Temperature, °C (Field)	9.0 (48.2°F)	OK	90°F
Dissolved Oxygen, mg/l (Field)	<1.0	X	4.000 (MIN)
BACTERIA — Total Coliform, MPN/100ml.	<2.		
BACTERIA — Fecal Coliform, MPN/100ml.	<2		
** Total Dissolved Solids, mg/l	5734.		
** Total Solids, mg/l	5790.		
CALCIUM CARBONATE — Total Alkalinity, as $CaCO_3$, mg/l	63.0	OK	82.000
Ammonia, as N, mg/l	1.16	OK	2.000
Total Cyanide, mg/l	0.003	OK	0.100
Iron Cyanides, mg/l	<0.010	OK	0.400
Total Copper, mg/l	0.026	OK	0.200
Total Zinc, mg/l	0.080	OK	0.300
Total Cadmium, mg/l	0.010	OK	0.300
FLOATING SOLIDS, SETTABLE SOLIDS, SLUDGE DEPOSITS	56.0	X	NONE

** Note: Total Solids 5790 PPM

Total Dissolved Solids 5734 PPM

56 PPM — Total suspended solids

Formula: $8.34 \times 56 \times \left[\frac{125 \times 60 \times 24}{1000000}\right]$ = LBS/DAY

(60 GAL/MIN) 467.04 x .18 = 84.07 LBS/DAY discharge limit

paper (GAL/MIN) 467.04 x .0572 = 26.90 " " " "

B-6

Groundwater Data, Recra Research, Inc., January 29, 1979.

EXOLON CO.
ANALYSIS OF WELL WATER

ANALYTICAL RESULTS

THE EXOLON COMPANY

Report Date: 1/29/79
Sample Date: 1/12/79

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION A	B
pH	Standard Units	7.40	-
Temperature (in field)	°C	13.0	-
Dissolved Oxygen (in field)	mg/l	8.95	-
Total Coliform	MPN/100 mls	-	<20
Fecal Coliform	MPN/100 mls	-	<20
Total Solids (103°C)	mg/l	12,700	-
Total Dissolved Solids (103°C)	mg/l	11,600	-
Total Alkalinity (pH 4.5)	mg/l as $CaCO_3$	62.1	-
Ammonia	mg N/l	4.5	-
Total Cyanide	mg/l	<0.3	-
Sulfide	mg/l	0.9	-
Total Cadmium	mg/l	<0.008	-
Total Copper	mg/l	0.027	-
Total Zinc	mg/l	0.013	-

COMMENTS: Samples were collected and received at Recra on 1/12/79. Sample B was used for coliform analyses only. Values reported as "less than" indicate working detection limits.

FOR RECRA RESEARCH, INC. Robt K Wyatt

DATE 1/29/79

RECRA RESEARCH, INC.
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH
111 Wales Avenue / Tonawanda, New York 14150 / (716) 692-7620

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B-7

Letter of Documentation to Mr. Skip Evans of the Town of Tonawanda, from Sheldon Nozik of Recra Research, Inc., concerning Residential Water Supply Source, December 10, 1985.

RECRA RESEARCH, INC.
Hazardous Waste And Toxic Substance Control

December 10, 1985

Mr. Skip Evans
Pretreatment Administrator
Town of Tonawanda
2919 Delaware Avenue
Kenmore, NY 14217

Dear Mr. Evans:

As part of the background search requirements for the NYSDEC Superfund sites, we the consultants, are required to have all of our interviews, personal or by telephone, documented.

Below is an account of our conversation that took place on December 9, 1985. Would you please read the account, sign at the bottom, and return the original to me. This is only to serve as documentation that the conversation took place.

° There are no groundwater wells in use in the vicinity of the Exolon Company at 1000 E. Niagara St.

° All of the homes in the area are receiving municipal water. Town of Tonawanda AREA. CAN NOT ANSWER FOR the City OF Tonawanda
Thank you for your cooperation.

Sincerely,

RECRA RESEARCH, INC.

Sheldon S. Nozik
Sheldon S. Nozik
Staff Geologist

SSN/jlo

Mr. Skip Evans

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

B-8

Initial Site Inspection Report for the Exolon Company, prepared by Erie County Department of Environment Protection, no date.

Site name Exolon Company County Erie.

INITIAL EVALUATION OF INDUSTRIAL AND HAZARDOUS WASTE SITES

(27)

I. General Site Information

1. Site location Exolon Comp. 1099 E. Niagara St TONAWANDA

2. Current owners ☒ or operators ☐ :

Address 1099 E. NIAGARA ST TONAWANDA N.Y.

Contact Robert T. Taylor Plant Manager Phone 693-4550

3. Time during which site was used: 1949 to 1973

4. Type of Site: Industrial Disposal ☒ Mixed Disposal Area ☐

Drum Storage ☐ Digoon ☐ Other (specify) ☒ bulk material used as land fill

5. Size of Site (approx.) 10 acres, and/or dimensions

6. Exposed waste: yes ☐ no ☒

II. Waste Characterization (See Section III for more details.)

1. Generator Exolon Comp. Waste Types coal cinders, Refractory brick, FeO_3, SiO_2

Composition Total Quantity Bulk ☒ Drum ☐

2. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

3. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

4. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

Report prepared by: P Kopaja Phone 846-7472

Phone

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X. Other Remarks

- plant disposed Refractory brick from plant kilns and coal cinders in landfill in low area shown in photo

- iron tailings removed during the processing of Aluminum oxide was also disposed of in the low area.

- coal cinders, iron tailings (Fe_2O_3), and refractory brick would not seem to pose a hazard

- site and surrounding land was farm land prior to purchase by Exolon Company. Any disposal of industrial/hazardous waste prior to Exolon is remote.

XI. Recommendations No further action recommended based on data available.

1. Minimum level of sampling to determine the hazards posed by materials at the site.

2. Enforcement action to abate problems at the site.

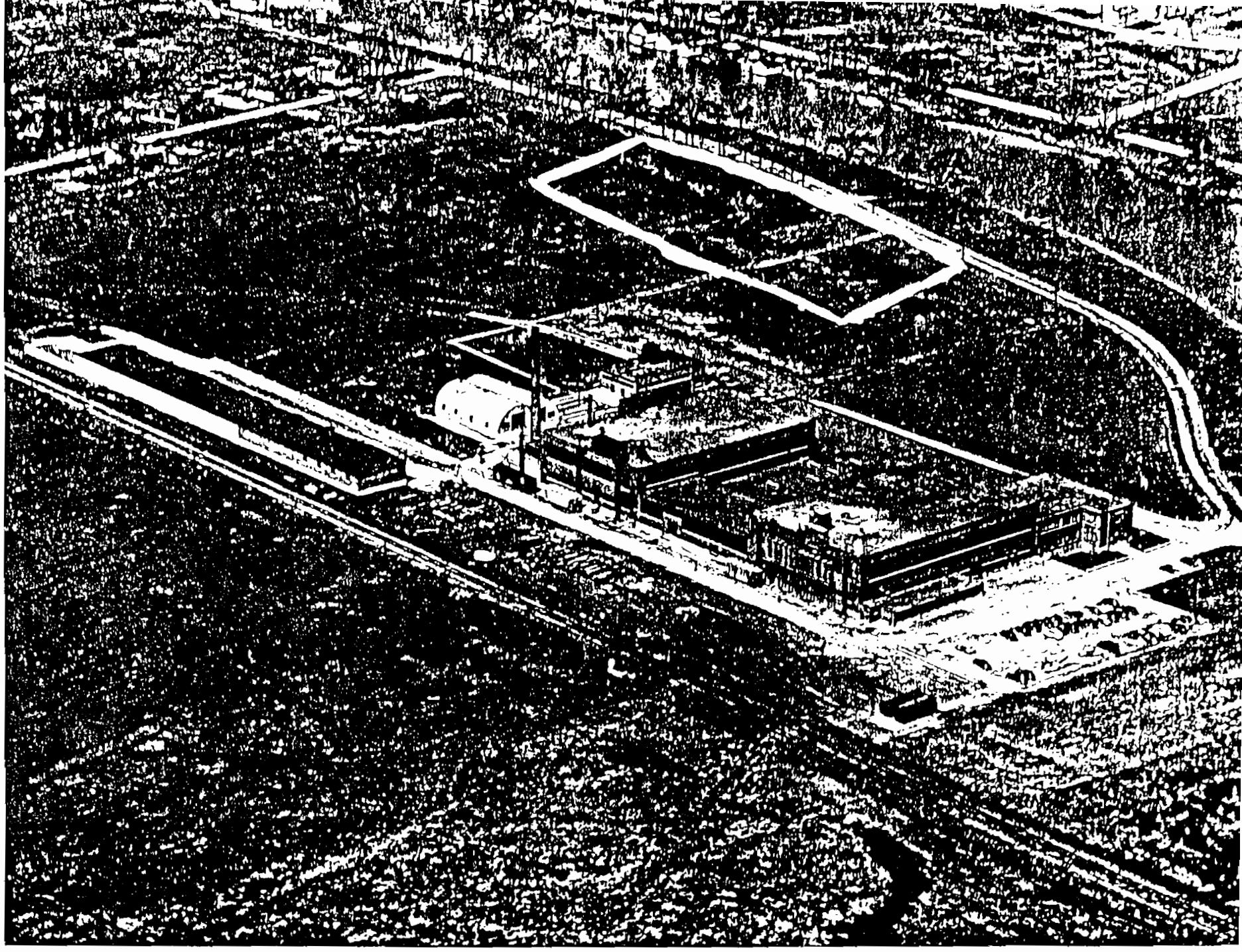
3. Containment actions to prevent further environmental threats at the site.

4. Comprehensive cleanup, or abatement of hazards posed by materials at the site.

5. Formal determination of Imminent Health Hazard by the State Health Department

6. Other Recommendations

4/5/49



B-9

Industrial Chemical Survey and SPDES Permit information, NYSDEC, February 24, 1977.

ALBANY, NEW YORK 12233

MAR 1 1977

THE WATER

INDUSTRIAL CHEMICAL SURVEY

PART I

PLEASE COMPLETE AND RETURN TO THE ABOVE ADDRESS, ATTENTION: INDUSTRIAL CHEMICAL SURVEY.

COMPANY NAME	SIC CODE (If known)	OFFICE USE O
THE EXOLON COMPANY	3291	8804

COMPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
1000 East Niagara Street	Tonawanda	New York	141

PLANT NAME (If different)	CONTACT NAME	TELEPHONE
	William J. Ruth	Area 716-693-45

PLANT ADDRESS (If different) Street	CITY	STATE	ZIP CODE

PRINCIPAL BUSINESS OF PLANT

Manufacture of Artifical Abrasive Grain

NOTE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

N.A.

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☒
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? ☒ Yes ☐
   Permit Number N Y 6 9 0 0 1
3. Do you discharge liquid wastes in any other manner? ☐ Yes ☒
   Explain _____

If any of the above are "Yes":

a. Do you discharge process or chemical wastes — (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☐ Yes ☐
b. Do you discharge non-contact cooling water? ☒ Yes ☐
c. Do you discharge collected storm drainage only? ☐ Yes ☐
d. Do you discharge sanitary wastes only? ☐ Yes ☐

AIR

1. Does your facility have sources of possible emissions to the atmosphere? ☒ Yes ☐
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) 1 4 1 6 0 0 1 3 0 2

LIQUID WASTES

1. List Name and Address of Firm (Including yourself) removing wastes other than office and cafeteria refuse.

Name	Address	City	State	Zip Code
Exolon Company	1000 E. Niagara	Tonawanda	N.Y.	14150

2. List Location(s) of Landfill(s) owned and used by your facility.

1 None - Material is marketed

2

Active ☐ ☐

PESTICIDES

1. Does this facility:
   Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes
   Produce Pesticides or Pesticide Product Ingredients? ☐ Yes
   Formulate Pesticides? ☐ Yes
   Repackage Pesticides? ☐ Yes
2. EPA Establishment Number ____ — ____ — ____

PART III

SUBSTANCES OF CONCERN
(Refer to attached TABLE I)

Complete all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do not include chemicals used only in analytical laboratory work. Enter the name and code from Table I. If facility uses a substance in any of the Classes A – F which is not specified in the list, enter it as code class plus 99, e.g. B99 with name, usage, etc.

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.)

[illegible] use chemicals of unknown composition, list trade name or other identification, name of supplier and complete information.

NAME OF SUBSTANCE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	SUPPLIER	PURPOSE OF USE (State whether produced, react[illegible] blended, packaged, distribute[illegible] no longer used, etc.)
Nalco 603	1100 G.	220	X		Nalco Chemical	Blended
Nalco 7744-A	220 G.	55	X		Nalco Chemical	Blended

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

[illegible]NATURE (Owner, Partner, or Officer) *William J. Ruth* DATE 7/27/77

[illegible]ME (Printed or Typed) William J. Ruth TITLE Works Manager

66

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

Peter A. A. Berle,
Commissioner

May 8, 1978

Mr. Ray Lane
The Exolon Company
1000 East Niagara Street
Tonawanda, New York 14150

Dear Mr. Lane:

Wellwater Discharge - SPDES #NY0069001
The Exolon Company, Tonawanda (T), Erie County

This office has reviewed your letter of April 27, 1978 which reported some of the characteristics of well water proposed for discharge after use in non-contact cooling. The Department has no objection to the proposed substitution of well water for potable water presently discharged under SPDES Permit #NY0069001 after non-contact cooling.

However, since the change in water source might result in the discharge of ammonia and/or sulfides to the receiving stream in significant concentration, this office is recommending that the SPDES permit be modified to require monthly sampling of the cooling water discharges, DSN 001 and 002 for these parameters. Subject to notification from you that the substitution will be made and the proposed date on which well water will be first discharged.

If the monitoring demonstrates concentrations of ammonia and/or sulfides above 2 mg/l, it will be required that you apply for a modified discharge permit. The revised permit would set effluent limitations for these parameters and possibly require treatment to insure that ammonia concentration does not exceed 3.5 mg/l and that sulfides do not exceed 4.0 mg/l in the discharge.

If monitoring demonstrates an insignificant concentration of pollutants, the testing frequency may be reduced upon your request.

In view of the above, additional testing is recommended prior to proceeding to change water supply sources. If you have any questions regarding the above, please contact Mr. Richard Sweeney at 842-5041. Please confirm the status of this proposed project within thirty (30 days.

Very truly yours,

Robert G. Speed, P.E.
Senior Sanitary Engineer

RPS:egb

EXOLON COMPANY
RECD
MAY 10 19[illegible]
BY [illegible]
TONAWANDA [illegible]

COPY

THE EXOLON COMPANY, TONAWANDA, N. Y. 14150

April 27, 1978

Mr. Richard Sweeney
New York State Department of Environmental Conservation
584 Delaware Avenue
Buffalo, New York 14202

Dear Mr. Sweeney:

The enclosed letter and data is in reference to a water well drilled on our property. Our intent is to use this as a non-contact cooling water as we do now with the city water. Is there anything in the data that would not satisfy our presen permit requirements as stated on SPDES Permit #NY-0069001.

Would appreciate your prompt reply.

Sincerely

THE EXOLON COMPANY

Ray E. Lane

REL/l

Enclosure

B-10

Erie County Department of Environmental Planning memo to Anthony Voell from Thomas Hershey concerning investigation strategy of the Exolon Company Site, April 7, 1986.

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

* * * M E M O R A N D U M * * *

FROM: Thomas Hersey DATE: 4/7/86

TO: Anthony T. Voell

RE: Exolon - ESK Company #915023 - (C) Tonawanda

The list of materials landfilled on this site includes refractory brick, iron tailings, foundry sands and coal cinders. It is doubtful that any of these wastes pose an environmental threat. Preliminary sampling of soils in landfill areas is suggested to determine whether a $42,980 Phase II investigation is warranted.

The only analytical data available concerning this site pertains to an on-site well located upgradient of the landfilled material. Samples taken from this well in 1978 and 1979 were tested for heavy metals. Results of these tests did not provide any positive indications of contamination. Being upgradient of the fill material, this well may not provide a true indication of the overall groundwater quality.

In 1982, this site was coded F by the Interagency Task Force indicating that no in-place toxics are present in dangerous amounts and that no further action would be required. All existing available site information supports this position. Suspected hazardous levels of phenolic binders in foundry sands deposited on-site seems to be the contactor's only reason for suggesting extensive Phase II work.

Sampling and testing of fill material to determine the actual levels of contaminants associated with foundry operations would provide a better indication of whether remedial work is necessary. It is recommended that 4-5 composite samples from the fill area be collected. These samples should be tested for total phenols and any other listed hazardous waste of concern. In addition, an EP Toxicity test should be run for heavy metals of conern and PAH's which would be associated with coal cinders. If test results turn out to be negative, the site should be dropped from the state registry.

Thomas R. Hersey
THOMAS R. HERSEY
Assistant Env. Quality Engineer

TR:jk

B-11

Correspondence between Exolon and NYSDEC Concerning Lagoon De-Watering and Closeout, June 1988 - January 1989.

EXOLON-ESK

EXOLON-ESK COMPANY

1000 EAST NIAGARA STREET
P.O. BOX 590
TONAWANDA, NEW YORK 14151-0590

AREA 716 693-4550
TOLL FREE 1-800 962-1100
TELEX 91-217

June 1, 1988

N.Y.S. Dept. of Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202-1073

Attention: Robert Mitrey

Gentlemen:

It is our intentions of backfilling the settling pond used for settling out Silicon Carbide before being discharged into the Erie Canal. So we are asking that you permit us to do so after we have complied with your instructions, if any, on closing out a surface impoundment facility.

Following is a history on the settling pond noting any chemicals that were introduced during its use:

1. Physical characteristics: 85 ft. x 105 ft. pond with a 156,360 gal. capacity. Ground protected by a plastic liner preventing settlements to enter the ground. Average flow was 157,000 gals. per 24 hours. Detention time for particulate settling time was 24 hours, which is an application rate of 17.6 gals./ft.^{2}/day.

2. Initially the Silicon Carbide was washed with a caustic soda which required PH control. This was controlled by dripping weak hydrochloric acid into the stream at a point very close to the process. The caustic soda treatment was discontinued in 1975 and only water was used as a washing agent. Therefore, the acid treatment ceased.

3. To enhance coagulation of the fine particles of Silicon Carbide, two chemicals were used in combination. The first was Nalcolyte 603 which was mixed at a ratio of 1 to 4 with the second chemical Nalcolyte 7744A Polyelecrolyte. An agitator was used to mix the chemicals in the water. Thus the fine silicon carbide settled out in the pond preventing it to enter the Erie Canal. The settlement in the pond was reclaimed twice per year for sale after being dried.

4. A Neptune chemical proportioner feed unit was used to control the amount of chemicals added to the water. Feed rate was 0.86 gals./hr.

5. As is required by our S.P.D.E.S. permit, we took weekly samples of the discharge and reported the results on a monthly basis to the State.

6. Use of the pond was discontinued in July, 1986. The process was changed to a dry system and no washing was involved.

If allowed to, this pond when backfilled, will be used as a parking area for employees. It will also eliminate a source of mcsquito breeding. Your timely reply will be appreciated. Thank you for your time.

Regards,

EXOLON-ESK COMPANY

Ronald J. Szatkowski

Ronald J. Szatkowski
Mgr. Engineering Services

RJS/cmh

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

GPS
AJS
JES

Thomas C. Jorling
Commissioner

November 15, 1988

Mr. Ronald Szatkowski
Exolon - ESK
P.O. Box 590
Tonawanda, NY 14150

Dear Mr. Szatkowski:

The purpose of this letter is to summarize our meeting held at your facility on Monday, October 31, 1988, concerning closure of your silicon carbide settling pond. Since the sampling analysis indicated that the silicon carbide sludge is non hazardous, the remaining silicon carbide sludge, plastic liner and subsoil would be eligible for sanitary landfill disposal. Since this material meets the definition of an industrial waste, disposal of such would have to be to a permitted disposal facility and would not be allowed to be covered at your site.

At our meeting you stated you would dispose of the waste material at Modern Landfill. Landfilling regulations disallow the receipt of waste containing any free liquids and must meet a solids content of greater than 20% solids. Due to the excessive wet weather since the pond was dewatered to remove the sludge, you will have to dewater the pond again. The writer consulted Mr. Angelo Sarkees of our Water Section and he stated that the pond could be dewatered through your discharge that is permitted under your SPDES permit. You would be required to monitor the discharge for your SPDES permit analysis of flow, temperature, ph, total suspended solids and COD.

Should you have any additional questions concerning this matter, please contact the writer at 716-847-4585. By copy of this letter to Mr. Kevin Hintz of this office, the writer hopes to expedite the waste product approval to the landfill so the work could be completed this construction season.

Very truly yours,

Robert C. Wozniak
Solid Waste Specialist II

RCW:jd
cc: Mr. Robert Mitrey
Mr. Kevin Hintz
Mr. Angelo Sarkees
Mr. Donald Brooks

mailed RCW

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

Thomas C. Jorling
Commissioner

December 5, 1988

Mr. Donald Brooks
Modern Landfill, Inc.
P.O. Box 209
Model City, NY 14107

Dear Mr. Brooks:

Exolon-Esk Company
M88-874

The Department has received and reviewed your application requesting permission to accept for disposal the waste generated by the closure of the lined settling pond at the above subject facility. Based on the data provided, the waste is acceptable for disposal on a one time basis at your facility.

A copy of the approved application is enclosed. If you have any questions, please contact this office.

Very truly yours,

Kevin R. Hintz, P.E.
Senior Sanitary Engineer

KRH:jd
Enc.
cc: Mr. Robert Wozniak

47-19-7 (10/85)—Text 12

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE • BUREAU OF HAZARDOUS WASTE OPERATIONS
50 WOLF ROAD, ALBANY, NEW YORK 12233-001

APPLICATION FOR TREATMENT OR DISPOSAL OF AN INDUSTRIAL WASTE STREAM

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY		
SITE NO. 32N30	APPLICATION NO. 1188-874	DATE RECEIVED
DEPARTMENT ACTION ☒ Approved ☐ Disapproved		DATE 12-5-88

one time only

1. NAME OF PROJECT/FACILITY	2. COUNTY	3. SITE NUMBER
Modern Landfill Inc.	Niagara	32N30
4. NAME OF OWNER	**5. ADDRESS (Street, City, State, Zip Code)**	**6. TELEPHONE NO.**
Modern Landfill Inc.	PO Box 209 Model City NY 14107	716/754-8226
7. NAME OF OPERATOR	**8. ADDRESS (Street, City, State, Zip Code)**	**9. TELEPHONE NO.**
Donald F. Brooks	PO BOX 209 Model City NY 14107	716/754-8226

10. METHOD OF TREATMENT OR DISPOSAL
Sanitary Landfill - D90

11. COMPANY GENERATING WASTE	12. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code)	
Exolon-ESK Company	1000 East Niagara St. Tonawanda, NY 14150	
13. REPRESENTATIVE OF WASTE GENERATOR	**14. MAILING ADDRESS OF REPRESENTATIVE**	**15. TELEPHONE NO.**
Ronald J. Szatkowski	1000 East Niagara St. Tonawanda, NY 14150	716-693-4550

16. DESCRIPTION OF PROCESS PRODUCING WASTE
Washing with water to clean silicon carbide. Solids in water settled out in pond by agglomerating the particles.

17. EXPECTED ANNUAL WASTE PRODUCTION	18. WASTE HAULED IN
90 Tons/~~Year~~ _____ Gallons/Year	☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Dump Truck

19. WASTE COMPOSITION	19b Physical State	19c pH Range
19a. Average Percent Solids 74	☐ Liquid ☐ Slurry ☐ Sludge ☒ Solid ☐ Contained Gas	N/A to _____

19d COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check one) Wt.%	PPM
1) Silicon Carbide			64	☒	☐
2) Earth & Plastic Liner			10	☒	☐
3) Moisture			26	☒	☐
4)				☐	☐

20. IS AN ANALYSIS OF WASTE ATTACHED?	21. WAS AN EP TOXICITY TEST CONDUCTED ON THE WASTE?	22. MATERIAL IS:
☒ Yes ☐ No	☒ Yes ☐ No If "Yes", attach results	☐ Hazardous ☒ Non-Hazardous

23. DETAIL ALL HAZARD AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions

None

24. WHERE WAS MATERIAL DISPOSED OF PREVIOUSLY?
First time.

25. NAME OF WASTE TRANSPORTER	26. ADDRESS (Street, City, State, Zip Code)	27. NYSDEC PERMIT No	28. TELEPHONE NO
Modern Disposal	PO Box 209 Model City, NY	9A-073	754-8226

29. 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

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR	DATE
X: Ronald J. Szatkowski MGR PLT. ENGN. & SERVICES	11/4/88
b. SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY	DATE

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

Thomas C. Jorling
Commissioner

January 4, 1989

Mr. Ronald Szathowski
Exolon - ESK
P.O. Box 590
Tonawanda, NY 14150

Dear Mr. Szathowski:

The writer inspected the cleaned out silicon carbide settling pond on Friday, December 30, 1988 to verify proper closure. Mr. Donald Brooks of Modern Landfill notified the writer that the clean out work was completed on December 29, 1988, at which time Modern needed to excavate an approximate 70 additional tons of liner, sludge and contaminated soil to get down to virgin soil. The writer requested Mr. Brooks to send in the scaled total so that the 47-19-7 form could be amended accordingly.

Should you have any questions on this matter, feel free to contact the writer at 716-847-4585.

Very truly yours,

Robert C. Wozniak
Solid Waste Speicalist II

RCW:jd
cc: Mr. Robert Mitrey
Mr. Kevin Hintz
Mr. Donald Brooks

B-12

Analytical Data of Lagoon Sludge, October 14, 1988.

1/9801

RECRA ENVIRONMENTAL, INC.

Chemical Waste Analysis, Prevention and Control

October 14, 1988

Mr. Ron Szatkowski
Exolon-ESK
P.O. Box 590
Tonawanda, NY 14150

Re: Analytical Results

Dear Mr. Szatkowski:

Please find enclosed results concerning the analyses of the sample recently collected by Recra Environmental, Inc. on your behalf.

Pertinent Information: Quote #:	Q88-532
Matrix:	Sludge
Sample Received:	9/14/88
Sample Date:	9/14/88

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 691-2600.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Arun K. Bhattacharya, Ph.D.
Senior Vice President/
Laboratory Director

KEK/AKB/jsm
Enclosure-Field Report

I.D. #88-1463
#8C1445

ANALYTICAL RESULTS

Prepared For

Exolon-ESK
P.O. Box 590
Tonawanda, New York 14150

Prepared By

Recra Environmental, Inc.
10 Hazelwood Drive, Suite 106
Amherst, New York 14150

METHODOLOGIES

Methods used for the EP Toxicity Test procedure as well as the analysis of the resulting extract are presented in U.S. Environmental Protection Agency publication, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". July 1982, SW-846, Second Edition.

COMMENTS

Comments pertain to data on one or all pages of this report.

The values reported as "less than" (<) indicate the working detection limit for the particular sample and/or parameter.

EP TOXICITY TEST EXTRACT - ORGANICS

PARAMETER (Units of Measure = mg/l)	EXTRACTION DATE	ANALYSIS DATE	EPA MAX. CONC.	SAMPLE IDENTIFICATION (DATE) S-1 (9/14/88)
Endrin	9/26/88	10/6/88	0.02	<0.0001
Lindane	9/26/88	10/6/88	0.4	<0.00005
Methoxychlor	9/26/88	10/6/88	10.0	<0.0001
Toxaphene	9/26/88	10/6/88	0.5	<0.005
2,4-D	9/30/88	10/10/88	10.0	<0.001
2,4,5-TP	9/30/88	10/10/88	1.0	<0.001

EP TOXICITY TEST EXTRACT - METALS

PARAMETER (Units of Measure = mg/l)	ANALYSIS DATE	EPA MAX. CONC.	SAMPLE IDENTIFICATION (DATE) S-1 (9/14/88)
Total Arsenic	9/29/88	5.0	<0.005
Total Barium	10/1/88	100.0	0.27
Total Cadmium	9/28/88	1.0	<0.005
Total Chromium	9/28/88	5.0	<0.02
Total Lead	9/28/88	5.0	<0.04
Total Mercury	10/1/88	0.2	<0.0002
Total Selenium	10/3/88	1.0	<0.005
Total Silver	9/30/88	5.0	<0.005

X Standard Addition
___ Non-Standard Addition

QUALITY CONTROL INFORMATION - ACCURACY
EP TOXICITY TEST EXTRACT - METALS

SAMPLE IDENTIFICATION S-1

PARAMETER	µg OF SPIKE	% RECOVERY
Total Arsenic	25	88
	50	80
Total Barium	2,500	100
	5,000	108
Total Cadmium	250	100
	500	103
Total Chromium	250	97
	500	98
Total Lead	2,500	98
	5,000	101
Total Mercury	0.2	97
	0.4	96
Total Selenium	25	95
	50	93
Total Silver	250	92
	500	96

1/9641.0

RECRA ENVIRONMENTAL, INC.

Chemical Waste Analysis, Prevention and Control

FIELD REPORT

POND-SLUDGE SAMPLING
EXOLON-ESK
TONAWANDA, NEW YORK

September 14, 1988

Prepared for:

Exolon-ESK
P.O. Box 590
Tonawanda, New York 14150

Attention: Mr. Ronald Szatkowski

Prepared by:

Recra Environmental, Inc.
Audubon Business Centre
10 Hazelwood Drive, Suite 106
Amherst, New York 14150

#8C1445

Reviewed by: Lloyd J. M—K

Date: 10-13-88

1.0 INTRODUCTION

This field report describes the collection of one (1) sludge sample from a pond at the Exolon-ESK facility in Tonawanda, New York. This sampling collection took place on September 14, 1988 and was performed by Recra Environmental, Inc. personnel Lloyd J. Marciniak. Exolon-ESK representative, Mr. Ronald Szatkowski, directed Mr. Marciniak to the pond area and remained to observe sampling.

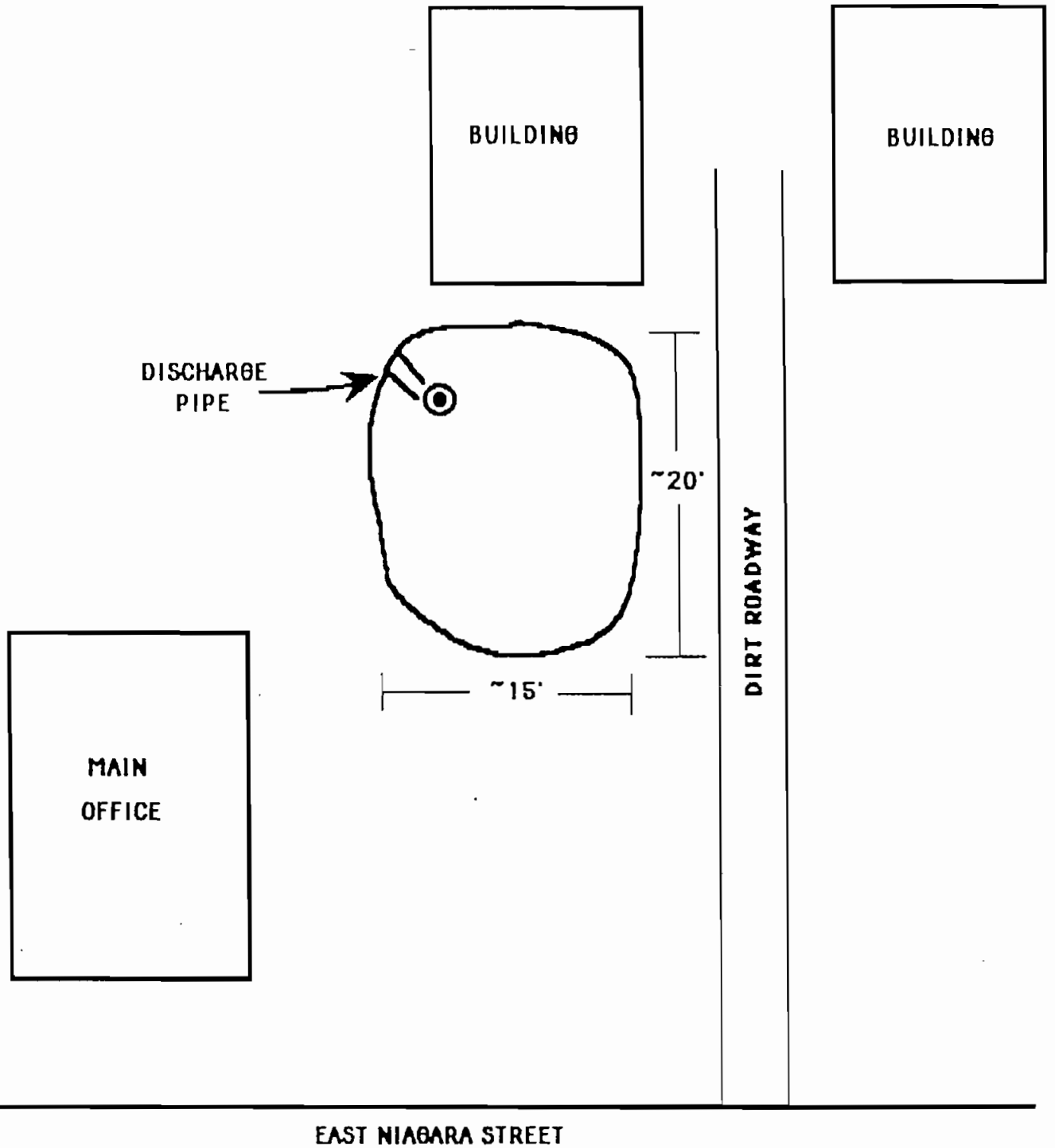
2.0 METHODOLOGY

A grab sample was collected from a settling pond located between buildings four (4) and five (5). The sample point (S-1) was chosen by Recra personnel and was located directly adjacent to a discharge pipe. (See figure 1).

The grab sample was obtained using a pre-cleaned stainless steel hoe. Prior to sampling, algae was scrapped off the surface of the area to be sampled. A silver/gray sludge sample was collected at a depth of approximately 0-6", homogenized in a pre-cleaned pan and then placed into the appropriate pre-cleaned container.

3.0 CHAIN OF CUSTODY

Chain of custody was initiated at the time of sample collection and maintained through delivery to the Recra Environmental, Inc. laboratory located in Tonawanda, New York.



◉ SAMPLE POINT

SCALE: NTS		
	BY	DATE
DWN.	PB	10/4/88
CKD.		
APPVD.		
REV.		

EXOLON-ESK FACILITY
TONAWANDA, NEW YORK

FIGURE 1
SAMPLE POINTS

PROJECT NO. 8C1145

A | DRG # PB 00012

85

RECRA ENVIRONMENTAL, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO	SITE NAME
8C1445	EXOLON - ESK

SAMPLERS (SIGNATURE): LJ M - - K

STATION NO	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	32oz glass						REMARKS
(1)	9/14/88			✓	S-1	1	X						sludge

RELINQUISHED BY (SIGNATURE)	DATE TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE TIME	RECEIVED BY (SIGNATURE)
LJ M - - K	9-14-88 14:35	Paul Kahn			
RELINQUISHED BY (SIGNATURE)	DATE TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE TIME	RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE TIME	REMARKS	

Distribution: Original accompanies shipment, copy to coordinator field files

B-13

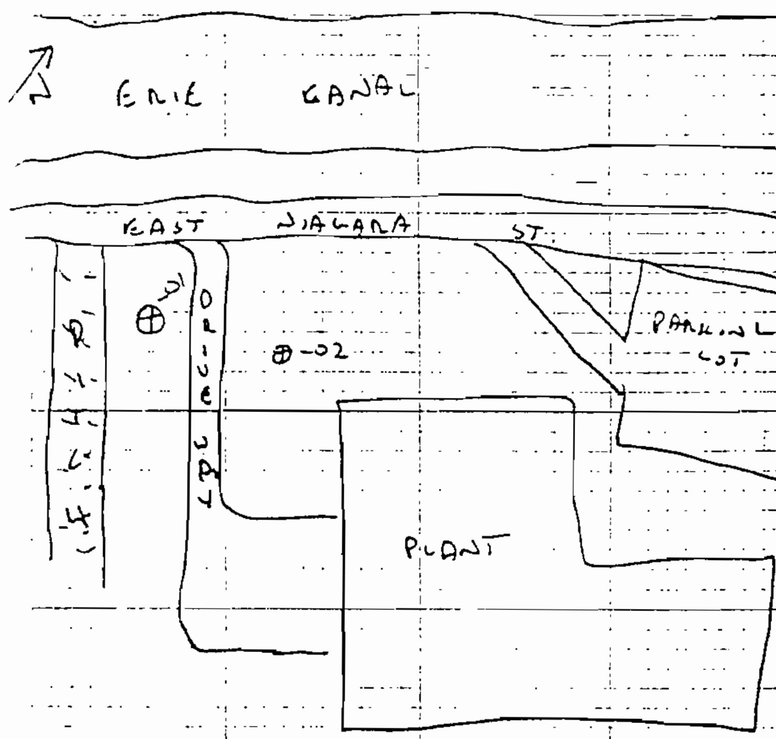
Analytical Data from Two Shallow Subsurface Soil Samples collected October 17, 1989.

WEST SIDE OF REAR DRIVEWAY.

MPLE SH9 8510915 OLS -02 TAKEN APPROXIMATELY 3:15 - 3:45 PM

SAMPLES WERE TAKEN BY SAMPLE TUBE SOIL SAMPLER. SEVERAL TUBES WERE FILLED IN A LOW SPOT 50 FT EAST OF THE DRIVEWAY. REFRACTORY BRICK AND CINDERS WERE ENCOUNTERED AT APPROXIMATELY 24" BELOW THE GROUND SURFACE. SAMPLE -02 WAS COMPLETED USING THIS SOIL.

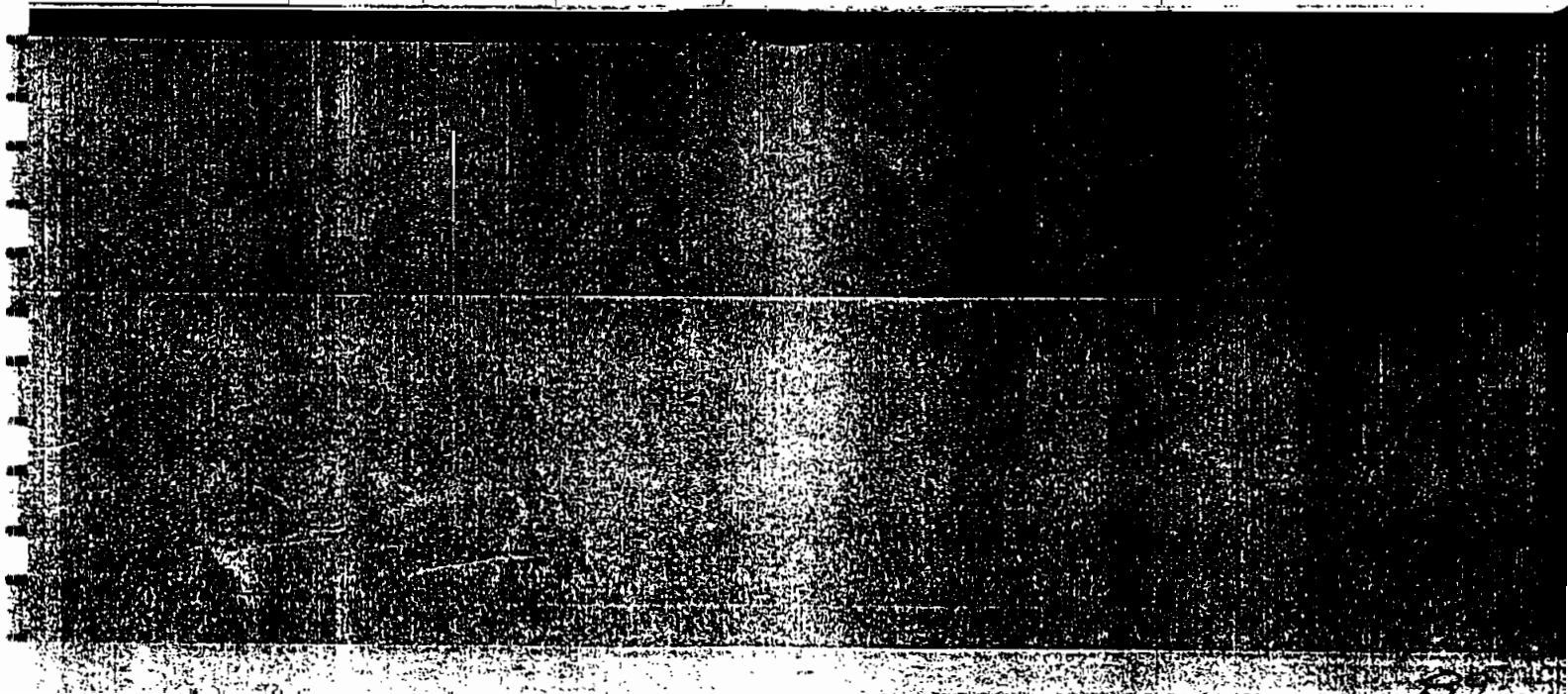
ALL EQUIPMENT WAS DECONNED AND WE LEFT THE SITE AT ABOUT 4:10 PM.



Exolon 915023

Oct, 1989

S1998910 915023



000003

COLLECTED BY: [redacted] Kevin Klein	TELEPHONE NO: 518-457-0747	REGION NO: 9
CONTRACT LAB: T.T [redacted]	COUNTY: Erie	SAMPLING DATE: 11/17/89
SAMPLING POINT: [redacted]	OUTFALL NUMBER	CHECK IF SAMPLING IS PART OF INSPECTION ☐
	SPDES NUMBER	FLOW MGD

CASE NUMBER	SDG NUMBER	SAMPLE NUMBER	CHECK FOR MS/MD	TYPE OF SAMPLE:
SHG	8910	915023-02	☐ This Sample	☐ Grab ☐ Composite ☐ Term _____ hrs

SAMPLE MATRIX:
☐ Air ☒ Soil/Sediment ☐ Groundwater ☐ Surface Water ☐ Wastewater ☐ Other (Specify) _____

CHECK THE BOX PRECEDING THE REQUESTED ANALYSIS

PRIORITY POLLUTANTS (Water Part 136)—SPDES

☐ 1. All (SPDES)—includes 2-6	☐ 2. 13 PP Metals	☐ 3. Volatiles—USEPA 624 (GC/MS)
☐ 4. Acids Base/Neutrals (USEPA 625-GC/MS)	☐ 5. Cyanide	☐ 6. Pesticides/PCB's (USEPA 608-GC)
☐ 7. Halogenated Volatiles (USEPA 601-GC)	☐ 8. Aromatic Volatiles (USEPA 602-GC)	☐ 9. BOD
☐ 10. pH	☐ 11. COD	☐ 12. TSS
☐ 13. Settleable Solids	☐ 14. TKN	☐ 15. Ammonia
☐ 16. Nitrate/Nitrite	☐ 17. Total Phosphrous	☐ 18. Reactive Phosphorus
☐ 19. Oil/Grease	☐ 20. TOC	☐ 21. Total Phenols
☐ 22. Other _____	☐ 59. PCB's at 0.065 ug/L	☐ 60. PCB's congener method

CONTRACT LABORATORY PROTOCOLS

☐ 23. (ALL)—Water—Includes 24-28	☐ 29. (ALL)— Soil/Sediments—Includes 30-34
☐ 24. Base/Neutral/Acid (B/N/A)—Water—GC-MS	☒ 30. B/N/A—Soils/Sediment—GC-MS
☐ 25. Volatile Organic Analysis VOA—Water—GC-MS	☐ 31. VOA—Soils/Sediments—GC-MS
☐ 26. Pesticides/PCB's—Water—GC	☐ 32. Pesticides/PCB's—Soils/Sediment—GC
☐ 27. Metals—Water	☒ 33. Metals—Soil/Sediment
☐ 28. Cyanide—Water	☐ 34. Cyanide—Soils/Sediment
	☐ 35. Other _____

HAZARDOUS WASTES/RCRA ANALYSIS SW-846

☐ 36. EP Toxicity	☐ 37. EP Toxicity (Metals Only)	☐ 38. Ignitability
☐ 39. Corrosivity	☐ 40. VOA—(USEPA 8240)	☐ 41. BNA—(USEPA 8270)
☐ 42. Pesticides/PCB's (USEPA 8080)	☐ 43. TCLP	☐ 44. TCLP (Metals Only)
☐ 45. Reactivity	☐ 46. Dioxin (USEPA 8280)	☐ 47. Appendix IX
☐ 48. Other _____		

MUNICIPAL SLU[redacted]

☐ 49. RSGB-01	☐ 52. RSRB-01	☐ 53. RSRI-01 (EP Toxicity-Metals only + RSRR-01)
☐ 54. RSRO-01	☐ 57. RSRR-02	☐ 58. Other _____

[redacted] applicable)

☐ Lab Personnel are expected to use caution when handling DEC samples, however, please use special precautions when handling this sample since it is believed to contain significant concentrations of hazardous and/or toxic material(s).

Place QA Label Here

000069 A

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

EPA SAMPLE NO.

91502301

Lab Name: IT PITTSBURGH Contract: C002165

Lab Code: ITPA Case No.: SH989 SAS No.: SDG No.: 8910B

Matrix: (soil/water) SOIL Lab Sample ID: 91502301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4071107D

Level: (low/med) LOW Date Received: 10/21/89

% Moisture: not dec. 13 dec. Date Extracted: 10/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	760	U
111-44-4	bis(2-Chloroethyl)Ether	760	U
95-57-8	2-Chlorophenol	760	U
541-73-1	1,3-Dichlorobenzene	760	U
106-46-7	1,4-Dichlorobenzene	760	U
100-51-6	Benzyl Alcohol	760	U
95-50-1	1,2-Dichlorobenzene	760	U
95-48-7	2-Methylphenol	760	U
108-60-1	bis(2-Chloroisopropyl)Ether	760	U
106-44-5	4-Methylphenol	760	U
621-64-7	N-Nitroso-Di-n-Propylamine	760	U
67-72-1	Hexachloroethane	760	U
98-95-3	Nitrobenzene	760	U
78-59-1	Isophorone	760	U
88-75-5	2-Nitrophenol	760	U
105-67-9	2,4-Dimethylphenol	760	U
65-85-0	Benzoic Acid	3700	U
111-91-1	bis(2-Chloroethoxy)Methane	760	U
120-83-2	2,4-Dichlorophenol	760	U
120-82-1	1,2,4-Trichlorobenzene	760	U
91-20-3	Naphthalene	760	U
106-47-8	4-Chloroaniline	760	U
87-68-3	Hexachlorobutadiene	760	U
59-50-7	4-Chloro-3-Methylphenol	760	U
91-57-6	2-Methylnaphthalene	760	U
77-47-4	Hexachlorocyclopentadiene	760	U
88-06-2	2,4,6-Trichlorophenol	760	U
95-95-4	2,4,5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	760	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethyl Phthalate	760	U
208-96-8	Acenaphthylene	760	U
606-20-2	2,6-Dinitrotoluene	760	U

000070 A

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.
EPA SAMPLE NO.
91502301

Lab Name: IT PITTSBURGH Contract: C002165

Lab Code: ITPA Case No.: SH989 SAS No.: _____ SDG No.: 8910B

Matrix: (soil/water) SOIL Lab Sample ID: 91502301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4071107D

Level: (low/med) LOW Date Received: 10/21/89

% Moisture: not dec. 13 dec. ____ Date Extracted: 10/31/89

Extraction: (SepF/Cont/Scnc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	760	U
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	760	U
121-14-2	2,4-Dinitrotoluene	760	U
84-66-2	Diethylphthalate	760	U
7005-72-3	4-Chlorophenyl-phenylether	760	U
86-73-7	Fluorene	760	U
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-Methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	760	U
101-55-3	4-Bromophenyl-phenylether	760	U
118-74-1	Hexachlorobenzene	760	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	380	J
120-12-7	Anthracene	760	U
84-74-2	Di-n-Butylphthalate	88	J
206-44-0	Fluoranthene	580	J
129-00-0	Pyrene	490	J
85-68-7	Butylbenzylphthalate	760	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	270	J
218-01-9	Chrysene	330	J
117-81-7	bis(2-Ethylhexyl)Phthalate	240	J
117-84-0	Di-n-Octyl Phthalate	760	U
205-99-2	Benzo(b)Fluoranthene	220	J
207-08-9	Benzo(k)Fluoranthene	180	J
50-32-8	Benzo(a)Pyrene	220	J
193-39-5	Indeno(1,2,3-cd)Pyrene	160	J
53-70-3	Dibenz(a,h)Anthracene	760	U
191-24-2	Benzo(g,h,i)Perylene	150	J

(1) - Cannot be separated from Diphenylamine

000071 A

NYSDEC SAMPLE NO.
~~EPA SAMPLE NO.~~

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

91502301

Lab Name: IT PITTSBURGH Contract: C002165

Lab Code: ITPA Case No.: SH989 SAS No.: _____ SDG No.: 8910B

Matrix: (soil/water) SOIL Lab Sample ID: 91502301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4071107D

Level: (low/med) LOW Date Received: 10/21/89

% Moisture: not dec. 13 dec. ____ Date Extracted: 10/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.07	3700	J
2.		UNKNOWN	4.75	81000	J
3.		UNKNOWN	6.45	1200	J
4.	18641-71-9	3-HEPTANONE, 2,4-DIMETHYL-	8.12	1000	J
5.		UNKNOWN	30.51	690	J
6.		UNKNOWN	30.84	600	J
7.		UNKNOWN	31.27	390	J
8.		UNKNOWN	31.91	230	J
9.		UNKNOWN	32.11	200	J
10.		UNKNOWN	34.62	500	J

1B 000072 A

NYSDEC SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

91502302

Lab Name: IT PITTSBURGH Contract: C002165

Lab Code: ITPA Case No.: SH989 SAS No.: SDG No.: 8910B

Matrix: (soil/water) SOIL Lab Sample ID: 91502302

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4011106D

Level: (low/med) LOW Date Received: 10/21/89

% Moisture: not dec. 28 dec. Date Extracted: 10/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	920	U
111-44-4	bis(2-Chloroethyl)Ether	920	U
95-57-8	2-Chlorophenol	920	U
541-73-1	1,3-Dichlorobenzene	470	J
106-46-7	1,4-Dichlorobenzene	920	U
100-51-6	Benzyl Alcohol	920	U
95-50-1	1,2-Dichlorobenzene	920	U
95-48-7	2-Methylphenol	920	U
108-60-1	bis(2-Chloroisopropyl)Ether	920	U
106-44-5	4-Methylphenol	920	U
621-64-7	N-Nitroso-Di-n-Propylamine	920	U
67-72-1	Hexachloroethane	920	U
98-95-3	Nitrobenzene	920	U
78-59-1	Isophorone	920	U
88-75-5	2-Nitrophenol	920	U
105-67-9	2,4-Dimethylphenol	920	U
65-85-0	Benzoic Acid	4400	U
111-91-1	bis(2-Chloroethoxy)Methane	920	U
120-83-2	2,4-Dichlorophenol	920	U
120-82-1	1,2,4-Trichlorobenzene	920	U
91-20-3	Naphthalene	920	U
106-47-8	4-Chloroaniline	920	U
87-68-3	Hexachlorobutadiene	920	U
59-50-7	4-Chloro-3-Methylphenol	920	U
91-57-6	2-Methylnaphthalene	920	U
77-47-4	Hexachlorocyclopentadiene	920	U
88-06-2	2,4,6-Trichlorophenol	920	U
95-95-4	2,4,5-Trichlorophenol	4400	U
91-58-7	2-Chloronaphthalene	920	U
88-74-4	2-Nitroaniline	4400	U
131-11-3	Dimethyl Phthalate	920	U
208-96-8	Acenaphthylene	920	U
606-20-2	2,6-Dinitrotoluene	920	U

000074 A

NYSDEC SAMPLE NO.

[redacted]

91502302

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: IT PITTSBURGH Contract: C002165

Lab Code: ITPA Case No.: SH989 SAS No.: _____ SDG No.: 8910B

Matrix: (soil/water) SOIL Lab Sample ID: 91502302

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4011106D

Level: (low/med) LOW Date Received: 10/21/89

% Moisture: not dec. 28 dec. ____ Date Extracted: 10/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.07	910	J
2.		UNKNOWN	5.58	70000	J
3.	110-12-3	2-HEXANONE, 5-METHYL-	7.05	690	J
4.		UNKNOWN	8.52	1100	J
5.		UNKNOWN	28.91	760	J
6.		UNKNOWN	30.14	590	J
7.		UNKNOWN	30.49	740	J
8.		UNKNOWN	31.26	850	J

NYSDEC 000136 A

NYSDEC SAMPLE NO.

EPA SAMPLE NO.

1

INORGANIC ANALYSES DATA SHEET

502301

Lab Name: ITAS_PITTSBURGH_____ Contract: C002165___

Lab Code: ITPA__ Case No.: SH989 SAS No.: _____ SDG No.: B910-B

Matrix (soil/water): SOIL_ Lab Sample ID: 915023-01_

Level (low/med): LOW__ Date Received: 10/21/89

% Solids: _86.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3100			P
7440-36-0	Antimony	2.8	U	N	P
7440-38-2	Arsenic	5.5			F
7440-39-3	Barium	27.9	B		P
7440-41-7	Beryllium	0.84	B		P
7440-43-9	Cadmium	0.46	U		P
7440-70-2	Calcium	17400			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	3.7	B		P
7440-50-8	Copper	16.4			P
7439-89-6	Iron	9780		E*	P
7439-92-1	Lead	678		S*	F
7439-95-4	Magnesium	4440			P
7439-96-5	Manganese	290		E	P
7439-97-6	Mercury	0.31		N*	CV
7440-02-0	Nickel	9.3			P
7440-09-7	Potassium	414	B		P
7782-49-2	Selenium	0.45	U	N	F
7440-22-4	Silver	0.46	U	N	P
7440-23-5	Sodium	128	B		P
7440-28-0	Thallium	0.45	U		F
7440-62-2	Vanadium	10.6	B		P
7440-66-6	Zinc	48.9		E	P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ARTIFACTS:__ROOTS,_GRAVEL_____

000137 A

NYSDEC

NYSDEC SAMPLE NO.

1

INORGANIC ANALYSES DATA SHEET

502302

Lab Name: ITAS_PITTSBURGH_____ Contract: C002165___

Lab Code: ITPA__ Case No.: SH989 SAS No.: _____ SDG No.: 8910-B

Matrix (soil/water): SOIL_ Lab Sample ID: 915023-02_

Level (low/med): LOW__ Date Received: 10/21/89

% Solids: _71.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	11700			P	
7440-36-0	Antimony	3.3	U	N	P	
7440-38-2	Arsenic	7.0			F	•
7440-39-3	Barium	66.5			P	•
7440-41-7	Beryllium	1.3	B		P	
7440-43-9	Cadmium	0.56	U		P	•
7440-70-2	Calcium	4130			P	
7440-47-3	Chromium	13.0			P	•
7440-48-4	Cobalt	7.3	B		P	
7440-50-8	Copper	22.2			P	•
7439-89-6	Iron	18400		E*	P	•
7439-92-1	Lead	52.9		*	F	
7439-95-4	Magnesium	2250			P	
7439-96-5	Manganese	160		E	P	•
7439-97-6	Mercury	0.22		N*	CV	•
7440-02-0	Nickel	20.6			P	
7440-09-7	Potassium	711	B		P	
7782-49-2	Selenium	0.56	U	N	F	
7440-22-4	Silver	0.56	U	N	P	•
7440-23-5	Sodium	86.0	B		P	
7440-28-0	Thallium	0.56	U		F	
7440-62-2	Vanadium	25.4			P	
7440-66-6	Zinc	90.2		E	P	

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ARTIFACTS:__WOOD_____

_____

_____

_____

B-14

Site Interview Forms

SITE INTERVIEW FORM

SITE: Exolon-ESK PROJECT NUMBER: 00296-01695

DATE: October 22, 1990 TIME: 1605

INTERVIEWER (Dunn/TAMS): George C. Moretti

INTERVIEWEE (OF SITE): Ron Szatkowski

NO. OF YEARS WORKING AT THE SITE:

DATES FROM: 1973 TO: Present

JOB RESPONSIBILITIES AT SITE: Plant Engineer

INTERVIEW:

The following information was exchanged:

- The exact location of the landfill is not known.
- A former employee recalls that part of the landfill may be located under part of the present building.
- Materials that may be present in the landfill include brick, dirt, rotor tails (metal filings) and foundry sands.
- The foundry sands may have contained phenolic binders based on company operations at that time. FOUNDRY SANDS CAME FROM OUTSIDE CONTRACTOR RJS
- Lagoon was closed out in 1988. Drainage ditch used to drain lagoon presently drains only surface water on western portion of site.
- No RCRA wastes are presently generated at the facility.

SIGNATURES:

INTERVIEWEE: Ronald J Szatkowski DATE: 10/25/90

INTERVIEWER: George C Moretti DATE: 10/25/90

SITE INTERVIEW FORM

SITE: EXXON – ESK PROJECT NUMBER: _____

DATE: 10-12-90 TIME: 1020

INTERVIEWER (DUNN/TAMS): GEORGE C. MORETTI

INTERVIEWEE (~~OF SITE~~): TOM WANTUCK

NO. OF YEARS WORKING AT THE SITE: NA

DATES FROM: NA TO: NA

~~JOB~~ RESPONSIBILITIES AT SITE:
NYSDEC REGION 9 DIV OF WATER

INTERVIEW:
THE FOLLOWING ITEMS WERE DISCUSSED

- THE COMPANY PRESENTLY HAS A SPDES ABILITY
- DIV OF WATER WAS NOT DIRECTLY INVOLVED IN THE CLOSEOUT OF LAGOON
- THE CLOSEOUT OF THE LAGOON WAS HANDLED BY THE DIVISION OF SOLID WASTE SINCE LAGOON SLUDGE WAS DETERMINE TO BE NON-HAZARDOUS

SIGNATURES:

INTERVIEWEE: Thomas C. Wantuck DATE: 10/12/90

INTERVIEWER: George Moretti DATE: 10-12-90

SITE INTERVIEW FORM

SITE: EXOLON - ESK PROJECT NUMBER: _____

DATE: 10/18/90 TIME: 0945

INTERVIEWER (DUNN/TAMS): GEORGE C MORETTI

INTERVIEWEE (OF SITE): JOHN HYDEN

NO. OF YEARS WORKING AT THE SITE: N/A

DATES FROM: N/A TO: N/A

~~JOB~~ RESPONSIBILITIES AT SITE: NYS DEC REGION 9 SITE MANAGER

INTERVIEW:

THE FOLLOWING ITEMS WERE DISCUSSED

- JOHN AGREED THAT DELISTING OF THE SITE SHOULD BE DONE ONLY AFTER MORE ANALYTICAL DATA ARE AVAILABLE.
- A RECENT (1989) HAND AUGERING SAMPLE TO A DEPTH OF APPROX 2 FT. DID NOT REVEAL ANY SIGNIFICANT CONTAMINATION.
- NO OTHER ACTION HAVE BEEN TAKEN AT THE SITE SINCE THE NBI PHASE I INVESTIGATION.

SIGNATURES:

INTERVIEWEE: John W. Hyden DATE: October 18, 1990

INTERVIEWER: George C Moretti DATE: October 18, 1990