

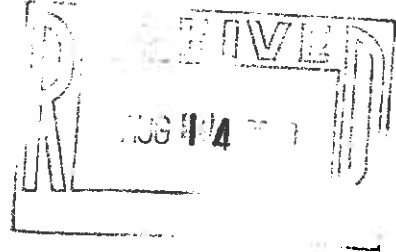


FRONTIER TECHNICAL ASSOCIATES INC.

~~737515~~ No. 11
446213 #10
Buckman Date
& Report

August 9, 2000

Mr. Robert Wozniak
NYSDEC Region 9
270 Michigan Ave.
Buffalo, N.Y. 14203-2999



Re: Closure of Underground Storage Tank
Ekonol Facility
Saint-Gobain Performance Plastics

Dear Mr. Wozniak:

Enclosed is a copy of a report entitled "Tank Closure Report for Underground Storage Tank at the Ekonol Facility, Saint-Gobain Performance Plastics". The report documents the closure to the tank and the associated sampling of the surrounding soils.

If you have any questions please do not hesitate to call Mr. Ed Canning at Saint-Gobain Performance Plastics at (518)642-2200.

Sincerely,

David M. Harty, P.E., DEE
Vice President

cc w/ encl: Ed Canning- Saint-Gobain
Joe Hensel - Saint-Gobain
Werner Sicvol- BP America



FRONTIER TECHNICAL ASSOCIATES INC.

**TANK CLOSURE REPORT
FOR
UNDERGROUND STORAGE TANK
AT
EKONOL FACILITY
SAINT-GOBAIN PERFORMANCE PLASTICS**

**July 18, 2000
ET-778-03.**

Prepared for:

**Mr. Ed Canning
Saint-Gobain Performance Plastics
1 Sealants Park
Granville, N.Y. 12832**

Prepared by:

**Frontier Technical Associates, Inc.
8675 Sheridan Drive
Buffalo, N.Y. 14221**



FRONTIER TECHNICAL ASSOCIATES INC.

TANK CLOSURE REPORT FOR UNDERGROUND STORAGE TANK AT EKONOL FACILITY SAINT-GOBAIN PERFORMANCE PLASTICS

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**TANK CLOSURE REPORT
FOR
UNDERGROUND STORAGE TANK
AT
EKONOL FACILITY
SAINT-GOBAIN PERFORMANCE PLASTICS**

INTRODUCTION

This Closure Report summarizes the actions taken to close the underground storage tank at the Saint-Gobain Performance Plastics Ekonol Facility in Niagara Falls, N.Y. The location of the facility is shown on Figure 1. The approximate location of the underground tank is shown on Figure 2. This report summarizes the following actions taken to close the tank:

- Removal of the contents of the tank
- Removal of the concrete tank.
- Removal of the water in the excavation
- Removal of the contaminated soil
- Sampling of the tank walls
- Sampling of the soils that remain in place at the limits of the excavation

BACKGROUND

The underground tank at the Saint-Gobain Performance Plastics (formerly Norton Performance Plastics) Ekonol facility received waste washed in from the floor drain in the process and storage area of the Ekonol plant (Building W-4). The underground tank is thought to have been installed prior to 1977 and has been in used since that time. The tank was reinforced concrete with 9.5" thick walls. The overall interior dimensions of the tank were 18' 1/2" long, 6' wide and 9' - 7 1/2" deep. At capacity, assuming no freeboard, the maximum tank volume possible was 7,794 gallons. There were no visible coatings on the tank.

CLOSURE PLAN

Frontier Technical Associates, Inc. prepared a closure plan for Saint-Gobain Performance Plastics (formerly Norton Performance Plastics) for the closure of the tank. The Closure Plan was entitled "Draft Closure Plan for Underground Spill Collection and Secondary Containment at Norton Performance Plastics Corp., Ekonol Plant" was submitted to the NYSDEC for review on May 25, 1999. The scope of the Closure Plan included the following:

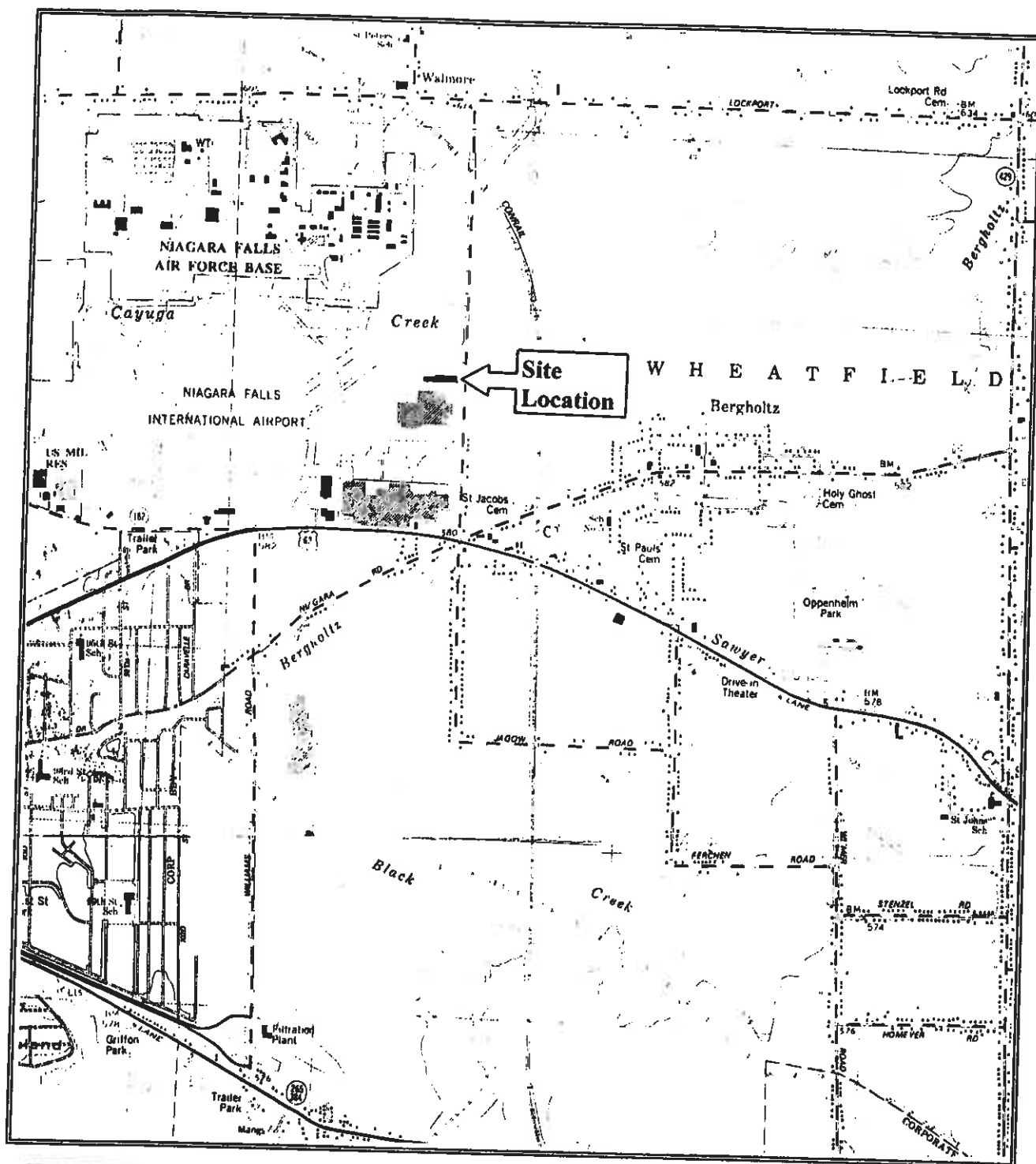


Figure 1. Site Location Map	
Scale - 1:25,000	Source - USGS Tonawanda West Quadrangle

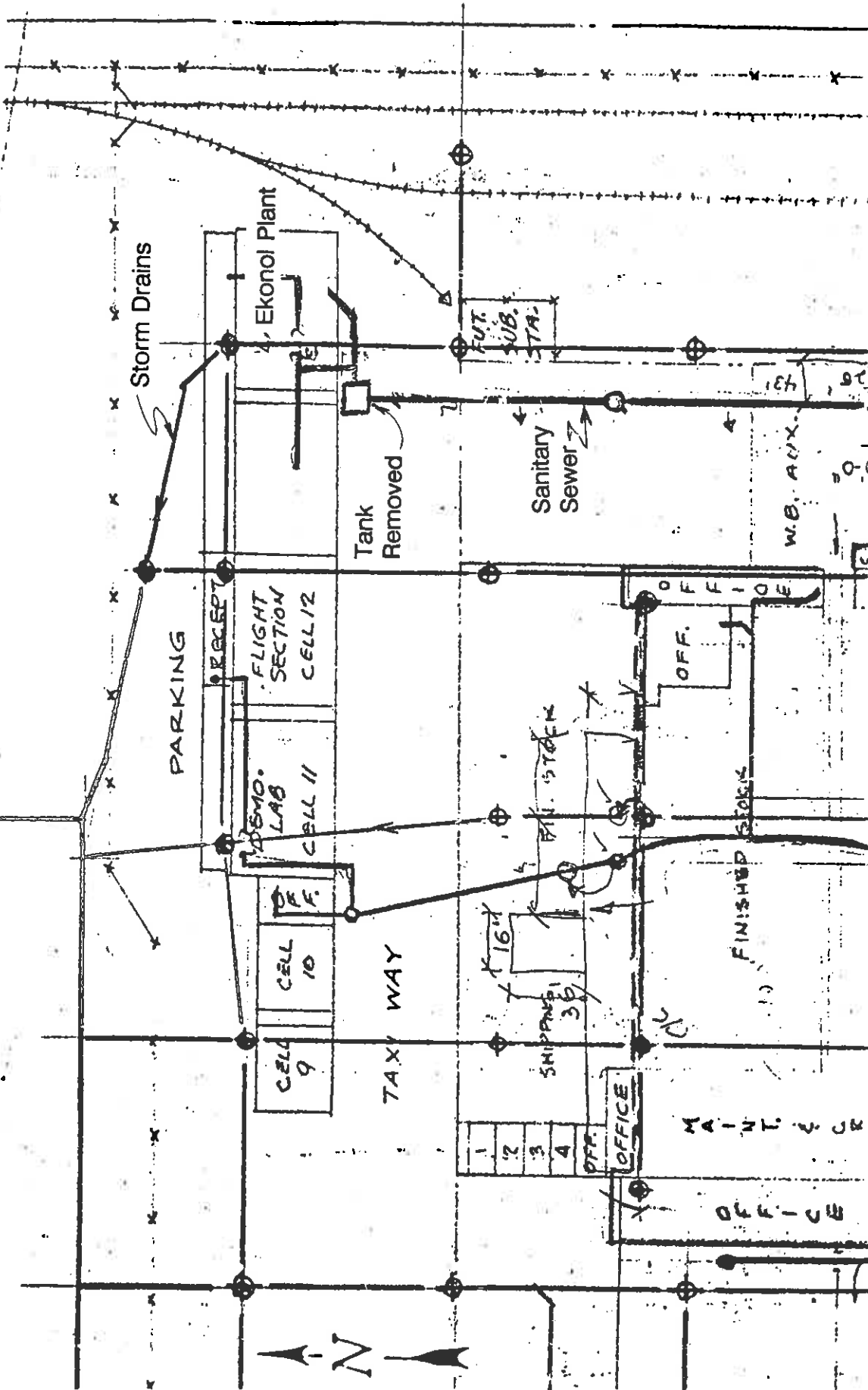


FIGURE 2

HISTORICAL DRAWING OF TANK LOCATION AND PLUMBING
 EKONOL FACILITY

ET-778

April 18, 1977

- Removal of the water and disposal as a hazardous waste.
- Cleaning of the walls and bottom of tank to remove residue.
- Removal/destruction of the concrete tank and proper disposal of the concrete and piping.
- Sampling and analysis of the concrete, soil and groundwater to determine contamination levels.
- Excavation and off-site disposal of contaminated soil.
- Backfilling of the excavation and re-establishment of concrete pad.
- Assessing the need and type of further action
- Preparation of this Closure Report.

Based on the conditions found, the scope was expanded to include the removal of the underground pipe and contaminated soil from the tank to the process reactor. This pipe was approximately 66 feet long and was buried approximately 3.5 feet below grade. This pipe had been abandoned previously however, residue and soil contamination was present and removed.

NYSDEC APPROVAL OF CLOSURE PLAN

The NYSDEC approved the Closure Plan for Underground Spill Collection and Secondary Containment Tank at the Norton Performance Plastics Corp., Ekonol Facility on June 10, 1999. A copy of the NYSDEC approval letter is presented in the Appendix. A letter was sent to the NYSDEC on July 19, 1999 to advise the NYSDEC of the closure schedule (See Appendix).

PROJECT TEAM

The Project Team for this project was as follows:

Engineering/Inspection/Sampling:
Frontier Technical Associates, Inc.
8675 Sheridan Drive
Buffalo, N.Y. 4221

The sampling activities were under the direction of a licensed Professional Engineer.

Tank Cleaning:

Marcor, Inc.
52 Marway Circle
Rochester NY 14624

Tank and Soil Removal:

Green Environmental Specialists, Inc.
8335 Quarry Road
Niagara Falls, N.Y. 14304

Waste Management and Disposal:

Tonawanda Environmental Corp.
1138 Military Road
Buffalo, N.Y. 14217

Analytical Testing:

Columbia Analytical Services
1 Mustard Street
Rochester, N.Y. 14609

The laboratory is certified as an ASP CLP laboratory under the NYSDOH ELAP Program.

SAMPLING

Every attempt to obtain representative samples was made for each sampling location. Pit wall stability issues and OSHA confined space requirements resulted in the use of the backhoe to assist in obtaining samples from the walls and bottom of the excavation.

WATER QUALITY

Based on past water quality testing of the water in the tank, the following chemicals have been detected:

SUMMARY OF CHEMICALS DETECTED IN TANK WASTEWATER		
Parameter	Concentration (mg/l)	
	Minimum Concentration	Max. Concentration
1,1,1-Trichloroethane	2.5	17
Trichloroethene	Not Detected	26
Tetrachloroethene	Not Detected	4.6
Carbon Tetrachloride	Not Detected	0.15
Trans 1,2-Dichloroethene	Not Detected	0.77
1,1-Dichloroethane	Not Detected	2.8
Bis(2-ethylhexyl) phthalate	Not Detected	0.21
Chrysene	Not Detected	0.051
Aniline	Not Detected	0.28
Phenol	Not Detected	12.8
2,4-Dinitrophenol	Not Detected	0.012
Lead	Not Detected	0.012
Zinc	Not Detected	0.11

WATER COLLECTION AND DISPOSAL

Water encountered during the removal process was collected, pumped into a vacuum truck and transported off-site for proper disposal. The water collected and disposed of included the following sources:

- Water in the tank
- Cleaning fluids
- Water trapped in granular backfill around the tank
- Water that entered the excavation from sanitary sewer line broken during the excavation (line was repaired).
- Groundwater infiltration.
- Rainfall and runoff.

For purposes of disposal, all water was considered a hazardous waste and disposed of off-site. Based on the hazardous waste manifests, 9,857 gallons of contaminated water were removed and disposed of during the remediation process (August 2 to October 22, 1999).

CONCRETE TANK TESTING

The tank was emptied and pressure washed in August 1999 as required by the Closure Plan. After the tank was washed, samples of the concrete were obtained and analyzed. The samples were analyzed for the TCLP volatiles and semi-volatiles, and the concrete was determined to be a hazardous waste based on the concentration of trichloroethene in the concrete. The detectable TCLP volatile and semi-volatile compounds are summarized below:

Detectable TCLP Volatile and Semi-Volatiles in Concrete Samples from Underground Storage Tank at the Ekonol Facility		
Parameter	Wall Sample	Floor Sample
Tetrachloroethene	6.2 mg/l	<0.1
Trichloroethene	58.0 mg/l	0.62
No TCLP semi-volatile compounds detected. 1,1,1-TCA is not a TCLP parameter.		

The concrete was assumed to be a hazardous waste and managed and disposed of as a hazardous waste. Based on the hazardous waste manifests, 108 tons of contaminated concrete was managed and disposed of as hazardous waste during the remediation process (Copies of the hazardous waste manifests are presented in the Appendix).

PIPES

Two pipes entered the tank and one exited the tank. One inlet pipe was from the process area floor trench and the second pipe was a drain line that had been capped inside the plant (prior to Norton ownership) and was from the area beneath the process. Both inlet pipes were partially to completely filled with solids. Both pipes were removed back to the building foundation and the pipes were disposed of with the contaminated concrete. The portions of pipe beneath the building foundation were sealed with concrete and a mechanical plug. The backfill (stone) around these pipes was also removed and disposed of as hazardous waste. There was visual evidence (black stones) that there was some leakage from these pipes into the surrounding backfill. The granular backfill was excavated and placed on the soil pile for disposal.

The outlet pipe was connected to the sanitary sewer. This sanitary sewer line also included the

discharge from the restroom. The granular backfill around the sanitary sewer line contributed to the inflow of water into the excavated pit.

TANK REMOVAL ISSUES

During the removal of the tank, there were several issues that were factored into the actions taken and amount of soil and contaminated water removed. These issues were as follows:

- The tank was next to the structural foundation for the building and there were some pre-existing cracks in the wall.
- The soils surrounding the tank were of low permeability red-brown clay.
- There was clay (approximately 1.3' feet) between the bottom of the tank and the top of the bedrock.
- The stone backfill material around the tank was saturated with water which flowed into the tank when the walls were broken. The clay in contact with the saturated backfill was wet and spongy, however as excavated proceeded further into the side soils, the clay became firm and dry.
- There was no significant groundwater flow into the excavation during the active site work. However, after a weekend there was approximately 1.7' of water in the excavation on Monday morning (some rain, some sewer flow (direct and indirect (sewer bedding))).
- Bedrock was encountered at 12.67 feet below grade.

SOIL EXCAVATION

The materials removed from the excavation consisted of the concrete walls and floor, the granular stone backfill around the tank and the plywood sheeting that was left in place from the installation of the tank. After these materials were removed, the soils (primarily clay) were removed from around the tank until firm dry soils were encountered. The soil beneath the tank was a saturated clay and had a positive field test for phenol.

Because the clay beneath the tank was saturated and was positive for phenol, the clay between the bottom of the tank and the top of bedrock was removed. The sample obtained was from the soil that was in direct contact with the bedrock.

After all visible contamination was removed, samples from the four walls of the excavation

were obtained approximately three feet up from the top of the bedrock. These samples were analyzed for the Target Compound List (TCL) volatile and semi-volatile compounds, and the results are summarized below:

SUMMARY OF TANK REMOVAL SOIL DATA EKONOL FACILITY					
Parameter	Soil Concentration (mg/kg)				
	North Wall	East Wall	South Wall	West Wall	Floor
cis-1,2-Dichloroethene	0.034	36.0	<8.3	5.9	2.9
Trichloroethene	1.2	190	190	1.3	<0.8
Tetrachloroethene	<0.032	8.4	21	<0.79	<0.8
1,1,1-TCA	<0.032	<8	<8.3	<0.79	<0.8
Vinyl Chloride	<0.032	<8	<8.3	<0.79	<0.8
Phenol	<0.85	3.5	<0.89	<0.84	12
Bis(2-ethylhexyl)phthalate	0.51	1.3	0.70	0.94	0.94

Based on the levels of contamination found, additional soil excavation was performed on October 22, 1999. The soils at the edge of the excavation transitioned quickly from loose clay to a firm red-brown clay. Therefore approximately 1.5 feet of additional soil were removed from the east, west and south bank walls. No further excavation to the north was possible without undermining the exposed foundation and jeopardizing the structural integrity of the building. The excavation was taken back to firm clay soil, however as that data below indicates, the concentrations of some of the parameters appear to increase with depth into this soil. This red brown soil had an interesting characteristic in that there were gray layers in the soil that may have a higher permeability and may explain the increase concentration with depth. The results of the second round of supplemental soil sampling are presented below:

SUMMARY OF SOIL DATA AT FINAL EXCAVATION LIMITS - EKONOL FACILITY					
Parameter	Soil Concentration (mg/kg)				
	North Wall	East Wall	South Wall	West Wall	Floor
cis-1,2-Dichloroethene	0.034*	100	67.0	14.0	2.9*
Carbon Tetrachloride	<0.032*	8.2	<8.3	<0.75	<0.8*
Trichloroethene	1.2*	120	200	<0.75	<0.8*
Tetrachloroethene	<0.032*	21	6.2	<0.75	<0.8*
1,1,1-TCA	<0.032*	<5.2	<3.3	<0.75	<0.8*
Vinyl Chloride	<0.032*	<5.2	<3.3	<0.75	<0.8*
Phenol	<0.85*	4.5	10.0	<0.84*	12*
Bis(2-ethylhexyl)phthalate	0.51*	<0.41	<0.43	0.94*	0.94*

* Data from first round of excavation

Given the exposed foundation wall and the cave-ins that occurred overnight on October 21, 1999 along the north wall, it was decided that the excavation would be immediately backfilled in order to prevent the failure of the foundation and subsequent damage to the building.

The size of the excavation at completion was 29 feet long (east to west), 16 feet wide (north to south) and 12.7 feet deep. This results in 180 cubic yards of material removed from the area around the tank. Additional material was also removed from the pipe trenches.

All soil removed from the excavation of the tank was assumed to be hazardous waste. The soil was stockpiled on site (covered and lined piles on concrete pavement) prior to removal. Based on the hazardous waste manifests, 14 loads of soil were removed and disposed of, totaling 290.55 tons. Copies of the hazardous waste manifests are presented in the Appendix.

BACKFILL

Since the extent of the contamination was being determined and the excavation needed to be backfilled, two actions were taken to facilitate any further remediation required. The first action was to place three interconnected perforated pipes along the bottom of the pit with a riser pipe to the surface. This pipe will allow collection, testing and removal of the accumulated groundwater. The excavation was backfilled with No. 2 DOT Stone to provide a permeable zone. Approximately 3.5' above the groundwater collection pipe, a second perforated pipe was placed in the No. 2 DOT stone. This pipe

was placed to collect any soil vapors and to provide a means to remediate any residual contamination using soil vapor extraction. A sketch of the backfill and potential remedial piping is attached. Run-of-Crusher material was used to bring the excavation to grade. The excavation was capped with a concrete pad and graded to the elevation of the surrounding concrete pad.

BEDROCK

The bedrock beneath the site is the Lockport Dolomite. As seen in the bottom of the excavation, it was massive with only one small fractured block in the northwest corner of the pit. There was also a diagonal fracture running from the northwest to southeast across the northeast corner of the excavation. As expected, the bedrock was hard and could not be excavated by the backhoe. No samples of the bedrock were obtained for analysis.

PROJECT PHOTOGRAPHS

Photographs taken during the remediation process are presented in the Appendix of this report.

The photographs taken show the following:

- Tank Before Removal
- Interior of Tank During Cleaning
- Tank Bottom After Cleaning
- Tank Removal Process
- Pit After Tank Removal
- Excavated Soil Pile
- Groundwater Collection Pipes and Backfill

TANK REPLACEMENT

The underground tank was replaced with an aboveground fiberglass tank with secondary containment and spill collection. The tank is located in the northwest corner of the facility and collects any water or chemical spills in the plant and holds the liquids for proper disposal. The tank has independent secondary containment and meets the NYSDEC's requirements for spill collection.

SUMMARY

The concrete tank and its associated piping have been removed along with the backfilled materials around the pipe and tank. Residual contamination as noted in this report remains in the surrounding low permeability red brown clay. The excavation has been backfilled to grade to prevent

failure of the building foundation.

PENDING FUTURE ACTION

BP America as the former owner, and their consultant are preparing a Work Plan to evaluate potential contamination remaining in the surrounding soils. It is expected that the NYSDEC will review this Work Plan prior to its implementation.

Appendix

NYSDEC Approval Letter
Letter to NYSDEC on Tank Removal Schedule
Photographs of Tank Removal
Hazardous Waste Manifests
Laboratory Reports

New York State Department of Environmental Conservation

Division of Solid and Hazardous Materials, Region 9

270 Michigan Avenue, Buffalo, New York, 14203-2999

Phone: (716) 851-7220 • FAX: (716) 851-7226

Website: www.state.ny.us



John P. Cahill
Commissioner

June 10, 1999

David M. Harty, P.E., DEE
Frontier Technical Associates, Inc.
8675 Sheridan Drive
Buffalo, New York 14221

Dear Mr. Harty:

The Department is in receipt of your Draft Closure Plan for Underground Spill Collection and Secondary Containment Tank at Norton Performance Plastic Corp., Ekonol Plant. A review of the plan indicates that it meets the specifications of properly closing a hazardous waste storage tank in New York State.

Please advise this Department 48 hours prior to commencing this action so that we could arrange to visit the site during the removal operation. Should any unforeseen situation or incident arise during this removal project that is not covered by this plan, the writer should be contacted to be appraised of the situation.

Very truly yours,

Robert C. Wozniak
Environmental Program
Specialist

RCW/tml

cc: Mr. James Strickland
Mr. Stanley Radon
Dr. Eric Hsiue, Norton Performance Plastics
Mr. Edward Canning, Norton Performance Plastics



FRONTIER TECHNICAL ASSOCIATES INC.

July 19, 1999
ET-778

Mr. Robert Wozniak
NYSDEC Region 9
270 Michigan Ave.
Buffalo, N.Y. 14203-2999

Re: Notification of Tank Removal
Norton Performance Plastics Corp.
Ekonol Plant

Dear Mr. Wozniak:

This letter is intended to provide the required notification of the removal of the underground tank at the Norton Performance Plastics Corp. - Ekonol Plant in accordance with the provisions of the Closure Plan (Closure Plan for Underground Spill Collection and Secondary Containment Tank at Norton Performance Plastics Corp, Ekonol Plant). The tank is scheduled to be emptied on or before August 2, 1999 and to be demolished beginning August 3, 1999.

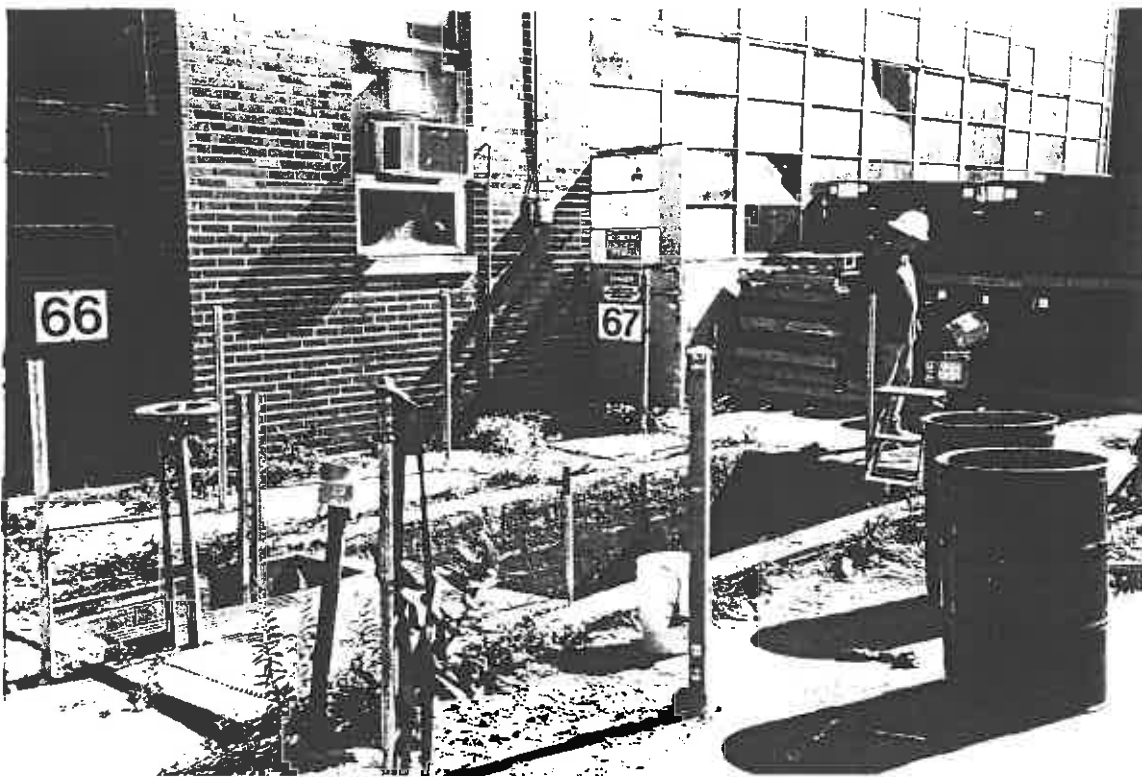
If you have any questions please do not hesitate to call me at (716) 634-2293.

Sincerely,

David M. Harty, P.E., DEE
Vice President

DMH:99-163

cc: Dr. Eric Hsiue - Norton Performance Plastics
Mr. Ed Canning - Norton Performance Plastics



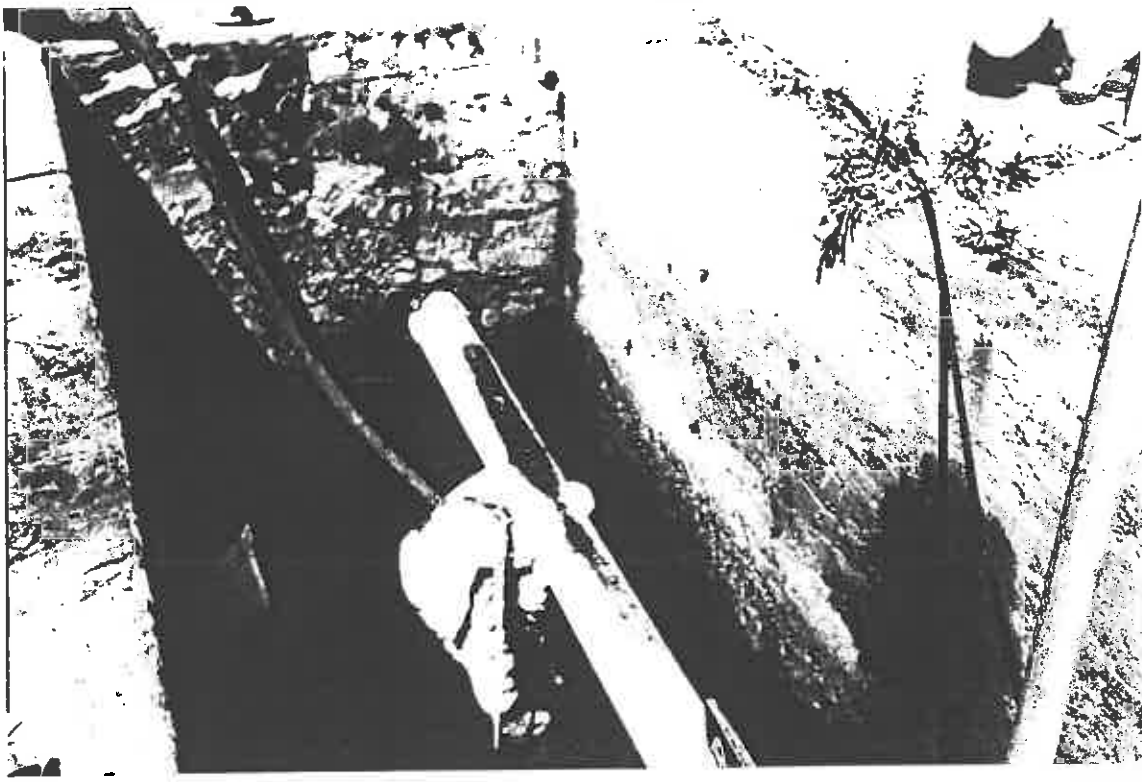
Tank Before Removal



Interior of Tank During Cleaning



**Ekonol Facility
Niagara Falls, New York**



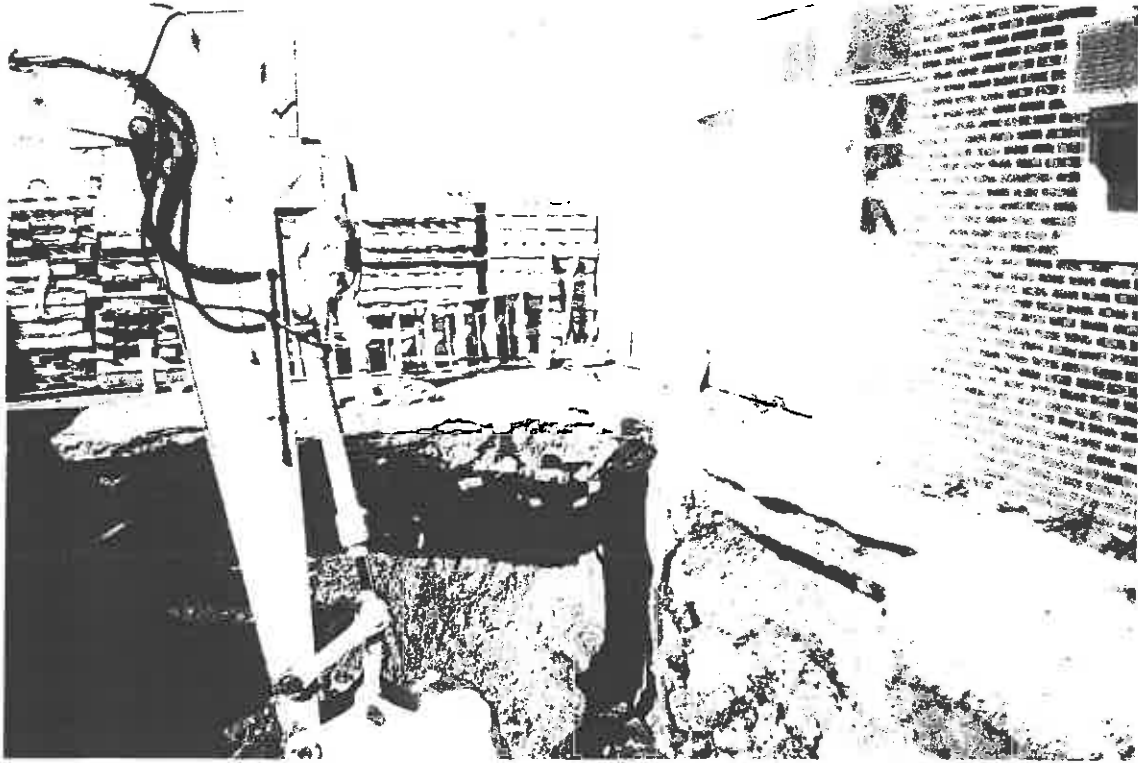
Interior of Tank During Cleaning



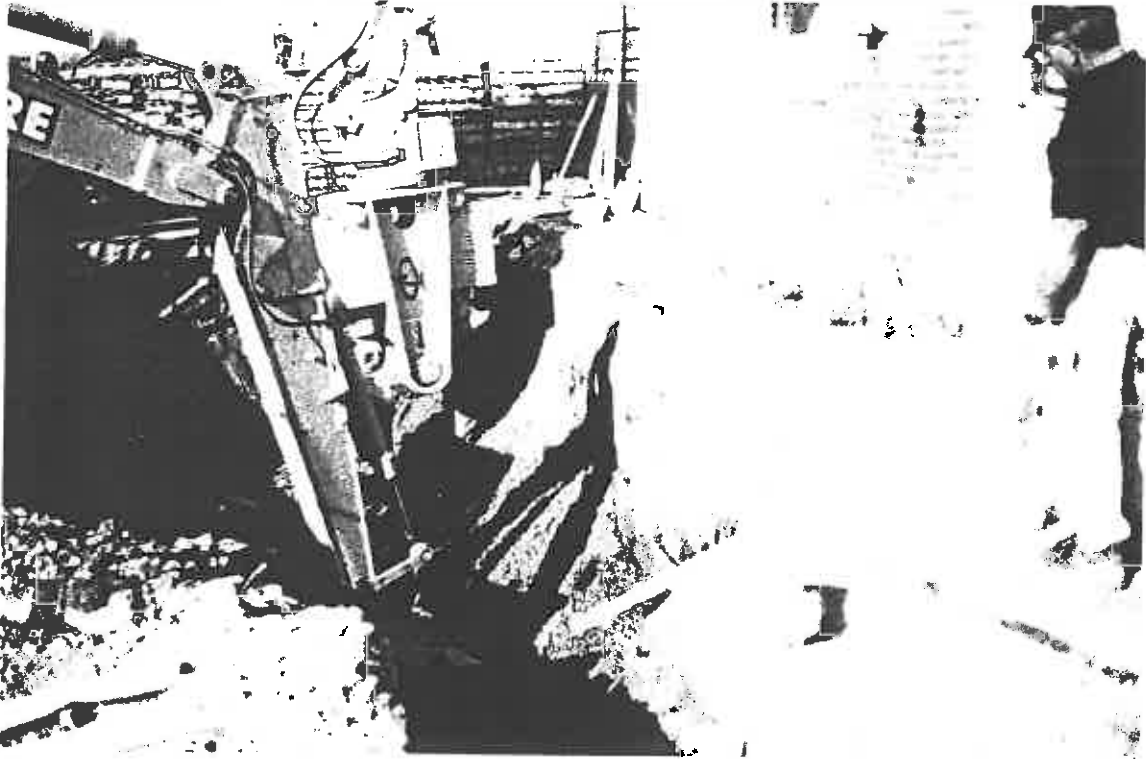
Tank Bottom After Cleaning



Ekonol Facility
Niagara Falls, New York



Tank Removal Process



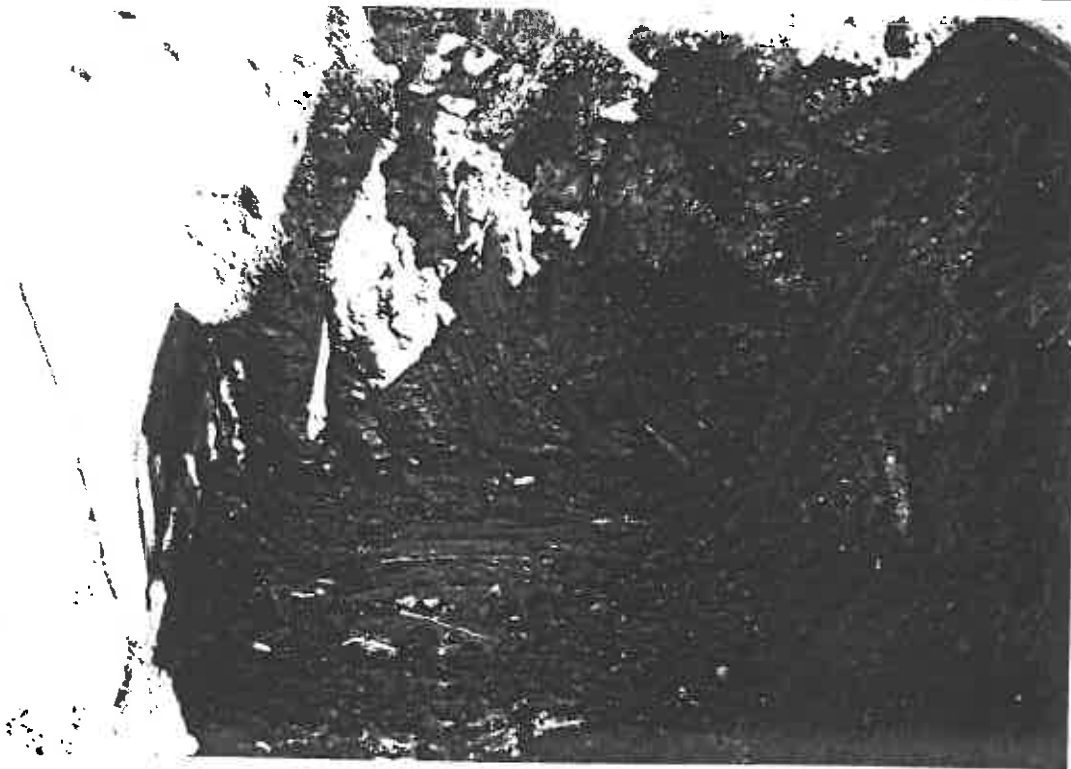
Tank Removal Process



**Ekonomol Facility
Niagara Falls, New York**



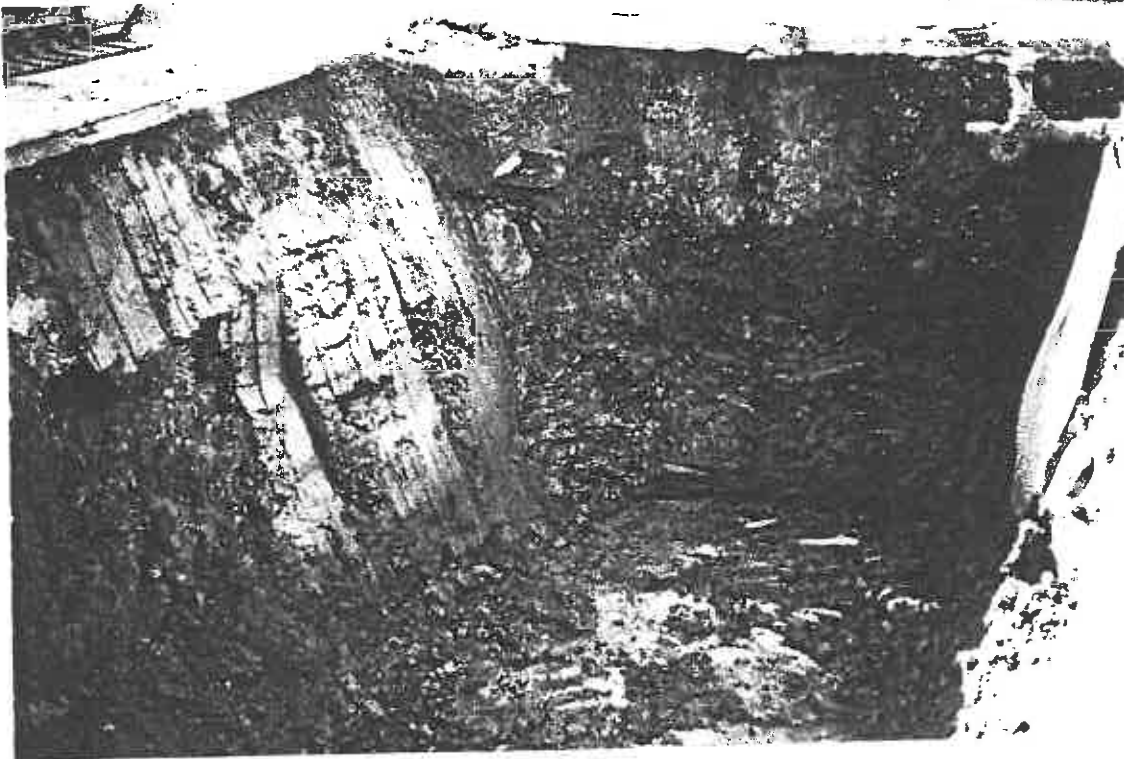
Pit After Tank Removal (Note Bedrock)



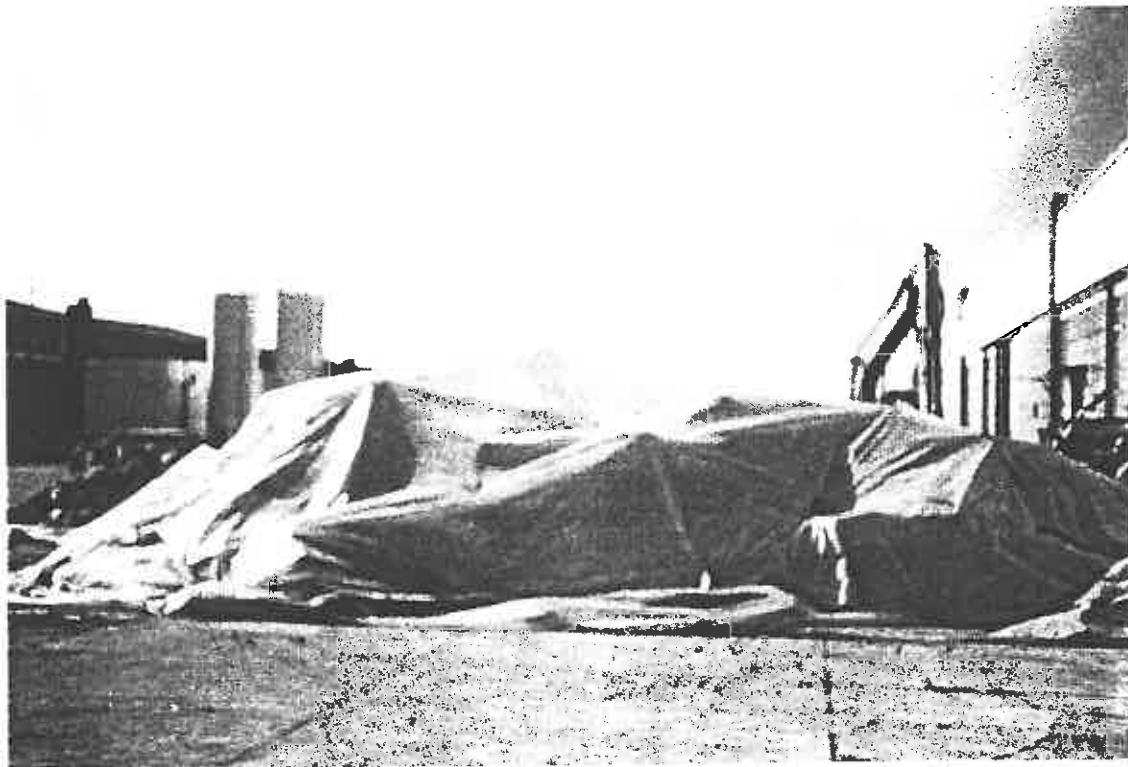
Pit After Tank Removal



Ekono1 Facility
Niagara Falls, New York



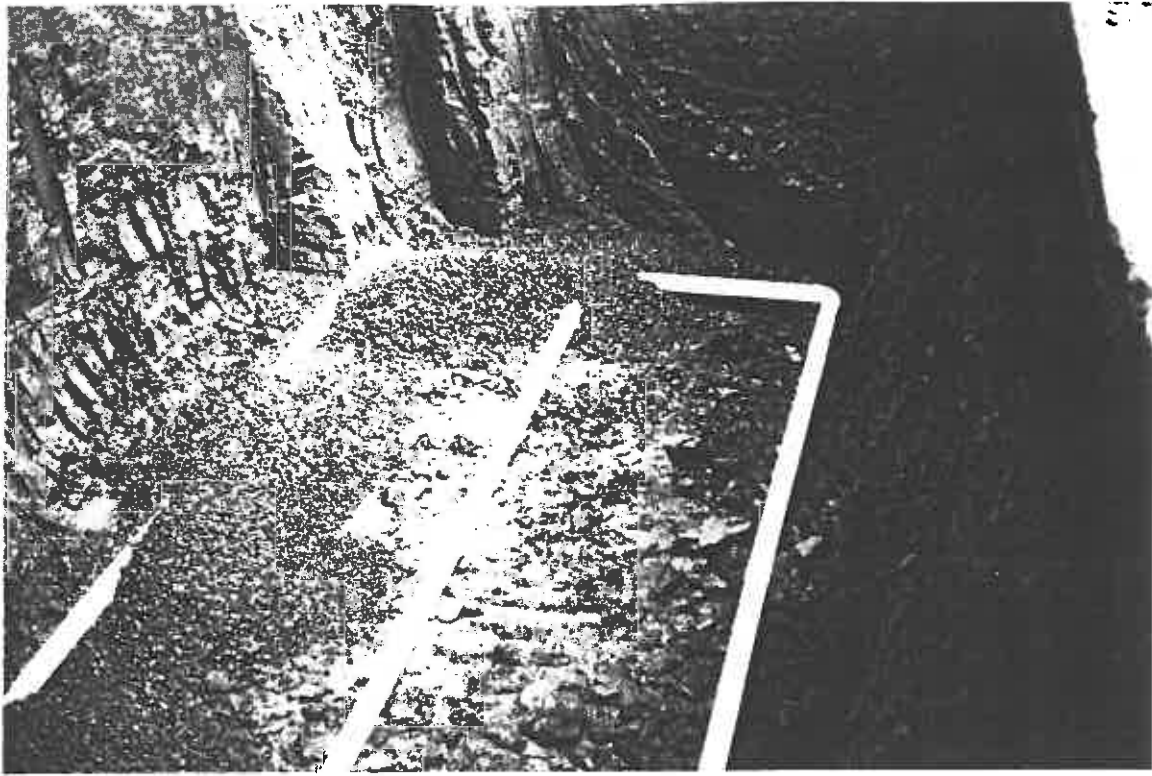
Southwest Corner of Pit (Note Clayey Soil)



Excavated Soil Pile



Ekonol Facility
Niagara Falls, New York



Groundwater Collection Pipes in Pit



Groundwater Collection Pipes in Pit



Ekonomol Facility
Niagara Falls, New York