The electronic version of this file/report should have the file name:

Type of document.Spill Number.Year-Month.File *Year-Year* or Report name.pdf

letter.________________.________-______.File spillfile ___.pdf

report.hw915014 . 1988 - 07 -01 . CLOSURE PLAN .pdf
FOR SURFACE IMPOUNDMENTS

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

non-releasable - put .nf.pdf
Example: letter.sp9875693.1998-01.Filespillfile.nf.pdf

The electronic version of this file/report should have the file name:

Type of document.Spill Number.Year-Month.File *Year-Year* or Report name.pdf

letter.______________._______-_____.File spillfile ___.pdf

report.hw915014 . 1994 - 03-01 . SUPPORTING DOCUMENTS .pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

non-releasable - put .nf.pdf
Example: letter.sp9875693.1998-01.Filespillfile.nf.pdf

The electronic version of this file/report should have the file name:

Type of document.Spill Number.Year-Month.File *Year-Year* or Report name.pdf

letter._______________._______-_____.File spillfile ____.pdf

report.hw915014 . 1994 - 03 .01. PRELIMINARY SITE ASSESSMENT .pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

non-releasable - put .nf.pdf
Example: letter.sp9875693.1998-01.Filespillfile.nf.pdf

The electronic version of this file/report should have the file name:

Type of document.Spill Number.Year-Month.File *Year-Year* or Report name.pdf

letter._______________._______-_____.File spillfile ____.pdf

report.hw915014 . 1986 - 01-01. PHASE I INVESTIGATION.pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

non-releasable - put .nf.pdf
Example: letter.sp9875693.1998-01.Filespillfile.nf.pdf

915014

Entered

ecology and environment, inc.

International Specialists in the Environment

118115

CE-3900 D1869

CLOSURE PLAN FOR SURFACE IMPOUNDMENTS CHEMICAL LEAMAN TANK LINES FACILITY TONAWANDA, NEW YORK

July 1988

Prepared for:

CHEMICAL LEAMAN TANK LINES
120 Pickering Way
Exton, Pennsylvania 19341-0200

ecology and environment, inc.
BUFFALO CORPORATE CENTER
368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

recycled paper

TABLE OF CONTENTS

Table of Contents (Cont.)

LIST OF TABLES

LIST OF ILLUSTRATIONS

1. INTRODUCTION

This plan identifies the steps required to close the surface water impoundments and associated piping at the Chemical Leaman Tank Lines, Inc. (CLTL) facility in Tonawanda, New York, in accordance with the requirements of 6 NYCRR, subpart 373(2.7). Three retired wastewater lagoons are located on the CLTL property. These lagoons received wastewater and rinsate from tanker truck cleaning operations between 1963 and 1987. Analytical data for the lagoon sediment and the extent of any local groundwater contamination are based on CLTL facility monitoring data collected from 1978 to 1987, and United States Environmental Protection Agency (EPA) Region II site investigation data, conducted in May 1987. The CLTL Tonawanda facility is identified by the New York State Department of Environmental Conservation (NYSDEC) as State Site No. 915014.

This plan focuses solely on the closure of the existing wastewater pond system. As part of this closure, all sludges and solids in the lagoons will be excavated and disposed of in accordance with applicable state and federal regulations. The lagoons will be filled with low permeability soils and returned to original grade. Any piping or containment systems will be removed or abandoned in place.

CLTL will initiate closure of the lagoons as soon as this plan is approved by NYSDEC. Prompt removal of sludges and proper closure of the lagoons will eliminate a potential source of groundwater contamination; enhance the ability to determine the extent of subsurface contamination, if any; and increase the efficacy of groundwater treatment, if it is needed and required.

Closure of these surface impoundments will be followed by a post-closure monitoring program to determine the need for further work and possible remedial action. Post-closure monitoring will include installation of a new upgradient well, as recommended in the NYSDEC Phase I Report (Environmental Science [ES] 1986).

At completion of closure, the closure will be properly certified by an independent New York State-registered engineer.

2. SITE DESCRIPTION AND HISTORY

2.1 LOCATION

The CLTL facility is located at 470 Fillmore Avenue, City of Tonawanda, Erie County, New York. The site is bordered by Fillmore Avenue to the north, Route 425 to the west, Ellicott Creek to the south, and Wales Avenue to the east (see Figure 2-1). The areal extent of the facility is approximately 7 1/2 acres.

2.2 FACILITY OPERATIONS

Chemical Leaman Tank Lines, Inc., is a common carrier transporting bulk chemical products by tank truck. The Tonawanda facility serves as a tractor trailer maintenance shop and as an internal/external tank truck cleaning facility. Following product delivery, empty tanks are returned to the facility and residual product is removed and drummed. The tanks are cleaned in an appropriate manner and the tanks are then returned to service. Wastewater enters the onsite treatment system.

2.2.1 Waste Handling Operations

From 1963 to 1978, wastewater (rinse water, dilute chemical residues, and expended steam condensate) from the tank cleaning operations was discharged to the three surface impoundments for treatment (aeration and settling) followed by discharge to the Tonawanda Wastewater Treatment Plant via the sanitary sewer system. These practices were modified in 1978 as part of an agreement with NYSDEC, and the accumulated solids in impoundments 1 and 2 were dewatered and 3,200 tons of sludge were excavated and removed for offsite disposal. Following excavation, wastewaters containing heavy metals or priority pollutants were collected separately in two 1,000-gallon storage tanks. Since 1978, discharges to

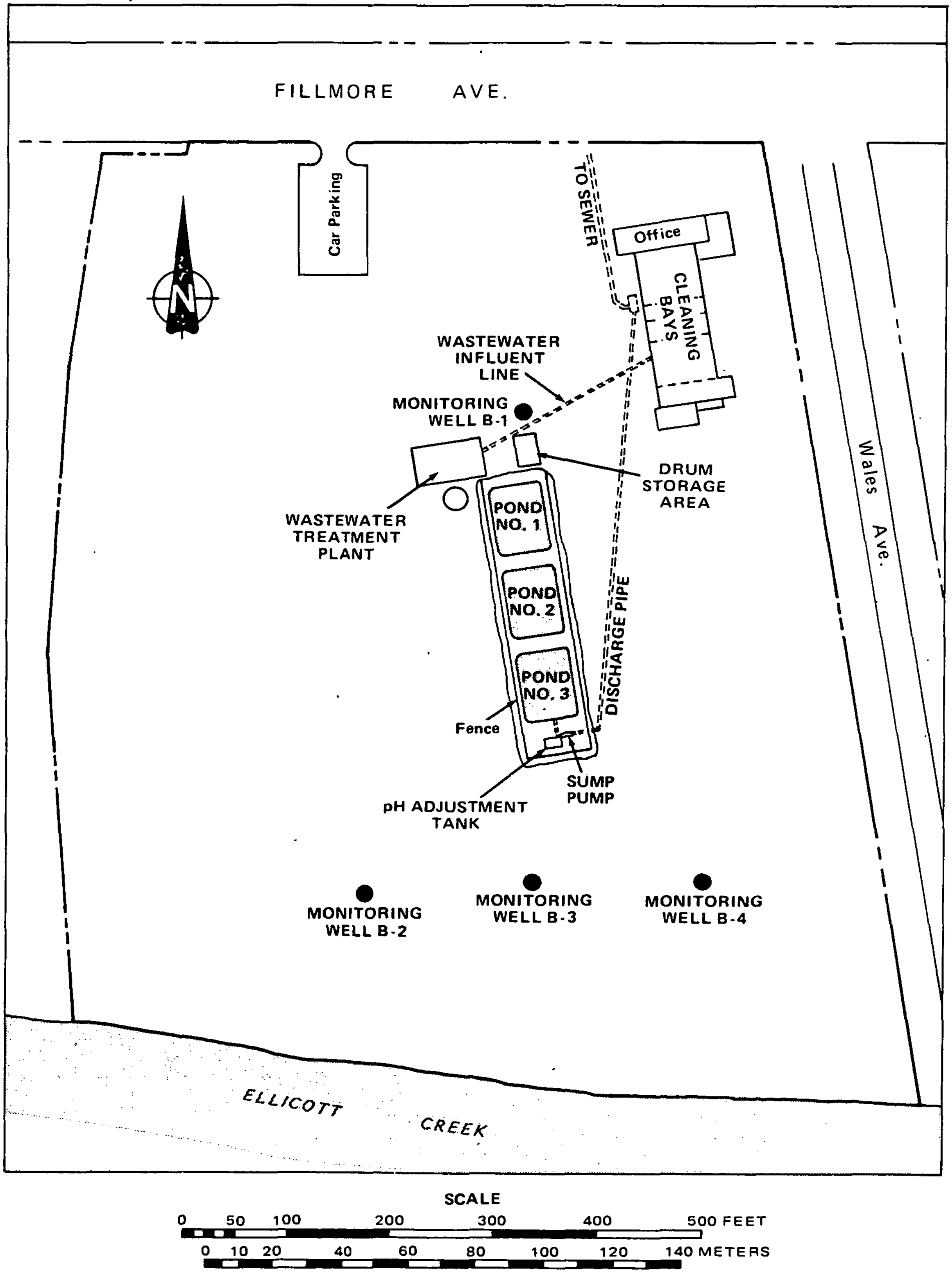

Figure 2–1 SITE MAP WITH MONITORING WELL LOCATIONS

the surface impoundments have been limited to nonpriority pollutant wastewaters. This practice continued until July 1987 when a new treatment system was installed. The impoundments no longer receive wastewater from any tank cleaning operations. All inputs to the lagoons, other than natural precipitation, have ceased.

2.3 SITE HYDROGEOLOGY

Bedrock beneath the site is expected to be Camillus shale and occurs at approximately 35 feet (USGS 1985). The groundwater in this strata is high in H_2S and specific conductance (ES 1986). A generalized soil column based on USGS boring logs is shown in Table 2-1.

The three lagoons are located near the center of the site. They were originally excavated to a depth of approximately 10 feet, but lagoons 1 and 2 were reexcavated in 1978 and 1979. Based on the depth of excavation, the lagoon floors are expected to be formed of layered fine sands, silts, and clays.

A shallow perched water table exists approximately 8 to 12 feet in depth above the red clay, and appears to slope southerly toward Ellicott Creek. This shallow aquifer may be hydraulically connected with the creek.

2.4 SUMMARY OF SIGNIFICANT ANALYTICAL RESULTS

Following treatment in the lagoons, wastewater was discharged to the city sewer system. In 1978 lagoon effluent was analyzed and found to contain high total organic carbon (TOC) (825 mg/L) and total halogenated organics (150 µg/L). Based on these data, CLTL modified the wastewater handling system and excavated sludges from impoundments 1 and 2.

Samples from the lagoons were collected on November 1980 and July 1982 by CLTL and analyzed for EP Toxicity (EP Tox) parameters (see Table 2-2). EP Tox values were below the concentrations sufficient to classify the sludges as RCRA wastes. Additional samples collected by Ecology an Environment, Inc. (E & E) in 1987 also demonstrated that the lagoon sludges were not characteristic RCRA wastes (see Table 2-2). However, detailed analysis of these lagoon sludges by EPA contractors in May 1987 indicated that low levels of some "inherently wastelike" pollutants

Table 2-1

GENERALIZED SOIL COLUMN

Soil Type	Depth (ft.)
Mixed fill, topsoil	0-7
Layered fine sands, silts, and clays	7-20
Red clay	20-34
Fine sand	34-35
Top of bedrock	35

Source: USGS 1985.

Table 2-2

EP TOXICITY AND CHARACTERISTIC WASTE DATA FOR LAGOON SLUDGES, CLTL SITE†

Chemical Constituent	Maximum Contaminant Regulatory Limit††	11-21-80*	7-27-82**	Sludge Composite Pits 1, 2, 3 8-17-87***
EP Tox Arsenic	5.0	0.031	<0.001	<0.5
EP Tox Barium	100.0	<0.5	0.390	<5.0
EP Tox Cadmium	1.0	<0.05	0.004	<0.1
EP Tox Chromium	5.0	<0.250	0.038	<0.5
EP Tox Lead	5.0	<0.360	0.063	<0.5
EP Tox Mercury	0.2	<0.0005	<0.002	<0.0008
EP Tox Selenium	1.0	<0.013	<0.001	<0.5
EP Tox Silver	5.0	<0.05	<0.001	<0.5
EP Tox Endrin	0.02	--	<0.00002	--
EP Tox Lindane	0.4	--	<0.00001	--
EP Tox Methoxyclor	10.0	--	<0.00002	--
EP Tox Toxaphene	0.5	--	<0.0005	--
EP Tox 2,4,D	10.0	--	<0.0001	--
EP Tox 2,4,5-TP (Silvex)	1.0	--	<0.0001	--
Color	--	--	Dark gray	--
Moisture Content	--	--	40%	--
Specific Gravity	--	--	1.4 g/ml	--
Flash Point	--	--	>140°F	>140°F
Cyanides	--	--	<1.5 ppm	<1.0 ppm
Sulfides	--	--	18.4 ppm	1,000 ppm
pH	--	--	11.7	10.3

† = in mg/L unless otherwise noted.
†† = Maximum contaminant concentration for EP Toxicity (40 CFR, 261.24).
* = Advanced Environmental Systems, Inc.
** = ARO Corporation
*** = Ecology and Environment, Inc.
-- = Not determined

Source: Adapted from ES 1986.

(49 CFR 261.2, Appendix VIII), including chlorinated organics, aromatic compounds, and metals, were present in these sludges (see Table 2-3).

Groundwater samples were collected in the downgradient wells in July 1981 by USGS and analyzed for organic contaminants. Phenol was detected at 38 µg/L (USGS 1985). Groundwater samples were collected by CLTL starting in 1981, and these data are summarized in Table 2-4. With the exception of phenol, iron, lead, and manganese, all chemical constituents were below the maximum concentration limits for New York State Class GA waters.

Groundwater was sampled in all four existing wells in May 1987 by EPA contractors. These samples were analyzed for volatile organics, base-neutral extractable organics, pesticides, PCBs, and metals. Phenol (0.023 ppm) and benzene (0.70 ppm) were found in downgradient well B-3, and 1,4-dichlorobenzene (0.010 ppm) and trans 1,2-dichloroethene (0.280 ppm) were found in upgradient well B-1. Zinc, manganese, lead, and iron were detected above MCLs for Class GA waters in various wells. These data are summarized in Table 2-4.

The presence of contaminants in well B-1 has been noted previously (ES 1986). As groundwater flow in this area is not well understood, CLTL will install a new upgradient monitoring well following the lagoon closure to better ascertain the hydraulic gradient and to determine the correlation between lagoon contaminants and groundwater monitoring data.

Table 2-3

EPA ANALYTICAL DATA, MAY 1987, CLTL SITE
FROM PRIORITY POLLUTANT ANALYSIS

Chemical Constituent	Lagoon 1 Sediment (mg/kg)	Lagoon 2 Sediment (mg/kg)	Lagoon 3 Sediment (mg/kg)	Wastewater Discharge (mg/L)
Chlorinated Organic Compounds				
Methylene chloride	<0.005	**	0.05	0.082
1,1,1-trichloroethane	0.018	0.97	0.130	0.130
t-1,2-dichloroethene	0.040	<0.5	<0.005	<0.05
Aroclor 1248	<0.4	32	<0.080	<2.5
1,1-dichloroethane	<0.005	<0.5	0.031	<0.05
Trichloroethene	<0.005	<0.5	<0.005	0.083
Aromatic Compounds				
Toluene	0.014	0.990	0.085	0.040*
Ethylbenzene	0.018	0.32	0.027	<0.05
Total xylene	<0.005	1	0.075	<0.05
Napthalene	<5.8	210	<6.2	1.0
2-methylnapthalene	<5.8	1,300	49	3.2
Benzoic acid	96	<960	<96	0.180*
Alkylbenzene	21	--	--	--
Phenol	<20	<200	<20	2.9
Miscellaneous Organic Compounds				
Styrene	0.037	<2.1	26	<0.50
di-n-octylphthalate	<20	200	67	0.32*
2-butanone	0.017	--	98	<0.10
4-methyl-2-pentanone	<20	1	0.011	<0.10
di-n-butylphthalate	<1.4	23	47	0.120*
bis(2-ethylhexyl)phthalate	<14	<2,900	<780	2.2
Metals				
Arsenic	0.012*	0.0047*	0.0004*	<0.005
Barium	0.074	0.147	0.076	0.314
Cadmium	--	--	--	0.0075
Chromium	0.051*	0.024*	0.070*	0.381
Lead	--	--	--	0.370
Mercury	--	--	--	<0.0002
Selenium	<0.0005	0.0009*	0.0009*	--
Silver	0.0027	<0.0023	<0.0031	<0.01
Zinc	0.283	0.481*	1.16*	2.7
Iron	15.2	2.73	5.84	14.2

* = Estimated value. Concentration below specified limit.
** = Methylene chloride found in method blank for Lagoon 2 sediment.
-- = No detection limit specified.

Source: EPA 1987.

Table 2-4

GROUNDWATER MONITORING DATA FOR SELECTED PARAMETERS, CLTL SITE*

Chemical Constituent	Class GA Water Std. in NYS	Well B-1 (Upgradient)	Well B-2	Well B-3	Well B-4
September 1982**					
Phenol	0.001	0.020	0.032	0.025	0.019
TOC	--	28	72	80	41
Iron	0.3	5.1	5.9	73	50
Lead	0.025	<0.005	<0.005	0.005	0.007
Manganese	0.3	1.3	0.10	0.91	0.91
May 1982**					
Phenol	0.001	0.027	0.039	0.025	0.020
TOC	--	32	79	72	19
Iron	0.3	5.6	10.0	9.5	300
Lead	0.025	0.06	0.13	<0.03	0.05
Manganese	0.3	1.2	0.22	0.65	1.5
March 1982**					
Phenol	0.001	0.018	0.014	0.044	0.012
TOC	--	40	46	54	16
Iron	0.3	2.5	5.6	9.9	48
Lead	0.025	<0.03	<0.03	0.03	0.04
Manganese	0.3	2.0	0.09	0.63	13
December 1981**					
Phenol	0.001	0.016	0.020	0.050	<0.01
TOC	--	42	74	51	14
Iron	0.3	73	28	34	0.4
Lead	0.025	<0.03	<0.03	<0.03	<0.03
Manganese	0.3	1.0	0.99	0.87	0.49
May 1987***					
Phenol	0.001	<0.01	<0.01	0.023	<0.01
Iron	0.3	69.4	34.3	201.0	44.5
Lead	0.025	0.08	0.026	0.20	0.038
Manganese	0.3	2.59	0.472	4.08	1.460
Zinc	0.5	0.339	0.089	7.41	0.160
Chromium	0.05	0.044	0.013	0.059	0.027
Benzene	BDL	<0.1	<0.420	0.570	<0.500
1,4-dichlorobenzene	--	<0.01	<0.01	<0.01	0.010
trans 1,2-dichloroethene	--	0.280	<0.420	<0.500	<0.500

* = All analytical results are expressed in mg/L unless otherwise indicated.
** = Chemical Leaman Tank Lines 1985.
*** = EPA 1987.
BDL = Below detection limit.
-- = No regulatory standard.

Source: CLTL 1985; EPA 1987.

3. CLOSURE PERFORMANCE STANDARDS

This closure plan is designed to ensure that sediments from the three waste impoundments at the CLTL facility will be excavated, transported, and disposed of in accordance with all applicable and relevant state and federal regulations, and that the impoundments will be closed in such a manner as to minimize or eliminate any threats to human health or the environment. The closure performance standards discussed below are based on applicable regulations, field sampling, and analytical data, and on the chemodynamics of the lagoon contaminants. These procedures do not address any potential groundwater contamination. A post-closure monitoring program will be instituted to evaluate any residual groundwater contaminants.

3.1 LAGOON EXCAVATION

The waste sediments in the impoundments will be completely excavated. The initial determination of the completeness of contaminant removal will be based on visual inspection of the lagoon during excavation. Following sludge/sediment removal, an additional 6 inches of soil will be removed from the lagoon bottoms and side walls to help ensure complete contaminant removal. No data are available on the vertical contaminant concentration profiles; however, based on the types of chemicals found in these sludges, the highest concentrations should be in the highly organic sludges or sorbed in the bottom clays. Post-excavation sampling will be performed to ensure complete removal.

3.2 POST-EXCAVATION SAMPLING

A composite soil sample will be collected from the bottom of each lagoon upon completion of sediment excavation. Each composite soil sample will be analyzed for chemical constituents identified in the sampling plan. Excavation of soils in the lagoons will continue until the cleanup action levels have been achieved.

3.3 DISPOSAL

All excavated materials and sludges from the dewatering process will be containerized and transported in accordance with applicable state and federal regulations and disposed of at an approved waste disposal facility. All wastewater generated during the lagoon closure will be treated on site, prior to release to the sanitary sewer system.

3.4 POST-CLOSURE MONITORING

Post-closure monitoring will conform to the requirements set forth in NYSRR 6, subpart 373(2.6).

4. SURFACE IMPOUNDMENT CLOSURE PROCEDURES

The sludges contained within the surface impoundments do not exhibit any of the characteristics of hazardous waste identified in 40 CFR 261, subpart C or subpart D; however, several components in these sludges are listed in Appendix VIII, and may be considered "inherently wastelike" (40 CFR 261.2). The following sections describe the closure procedures for the CLTL Tonawanda facility surface impoundments. Each lagoon will be independently dewatered, solidified, and excavated. Upon reaching the cleanup action levels, each lagoon will be backfilled and reclaimed. All removal activity will be monitored by a qualified professional engineer to ensure contractor compliance with this closure plan.

4.1 DEWATERING OF SURFACE IMPOUNDMENTS

Impoundment sludges will be dewatered prior to excavation. Water and oil will be pumped from the lagoons into the CLTL onsite pretreatment facility. This treatment consists of oil-water separation, followed by mixing, pH adjustment, and solids separation. Aqueous effluent will be then treated, and passed through a membrane ultrafiltration unit. Sludges from the wastewater treatment plant will be passed through a filter press, and the filtrate will be discharged to the plant pretreatment system. All sludge will be taken to an approved waste disposal facility.

4.2 DEWATERING OF SURFACE IMPOUNDMENT SLUDGES

Following removal of standing water in the surface impoundments, sediments will be passively dewatered by allowing sediments to air dry during optimum periods of solar and wind activity. An impermeable liner will cover the top of the impoundments during inclement weather. Water collected on top of the liner will be pumped to the onsite treatment unit. When the lagoon sludges or sediment are sufficiently dry, they will be solidified.

4.3 SOLIDIFICATION OF SURFACE IMPOUNDMENT SLUDGES

Sludges will be stabilized in situ to minimize material handling. Dewatered sediments will be solidified with Posilime (Mineral By-products, Marietta, Georgia) or an equivalent stabilization agent. Posilime will be added in sufficient quantity to render the lagoon sludges nonflowable. This will be accomplished by distributing the Posilime into the lagoons and blending the mixture with a hydraulic excavator or clamshell bucket. Blending will continue until a homogeneous, stabilized, nonflowable consistency is attained.

4.4 EXCAVATION OF SURFACE IMPOUNDMENT SLUDGES

Solidified sludge will be removed from the impoundments with a hydraulic excavator or clamshell bucket. This equipment will be located along the banks of the impoundments, and sludges will be excavated until all visible contamination is removed. Following this removal, an additional 6 inches of soil will be removed from the bottom and side walls of the impoundment. Excavated material will be placed into 5-mil thick plastic-lined dump trailers which will be staged a reasonable distance from the excavation area for transportation off site.

4.5 TRUCK PREPARATION

The dump trailers will be lined with plastic (5 mil thickness or greater) to prevent contamination of the interior surfaces. Upon filling, the trailer will be decontaminated prior to being moved to a scale to be weighed. If material must be removed or added, the trailer will be returned to the excavation area for weight adjustment. When the trailer is properly loaded, the entire contents will be covered with a tarpaulin in preparation for transport off site.

4.6 VEHICLE DECONTAMINATION

All vehicles entering the excavation area during excavation will be required to be decontaminated prior to exiting the site. Decontamination will occur in the tank cleaning area. Wash water will be discharged to the CLTL pretreatment facility. Vehicles operating on access paths will be rinsed with high pressure water to remove any soil and prevent transport to offsite areas.

The hydraulic excavator or other equipment operating in the impoundment area or contacting impoundment sludges will be washed with acetic acid and rinsed with high pressure water. Wastewater will be collected and treated on site.

4.7 POST-EXCAVATION SAMPLING AND ANALYSIS

The efficacy of contaminated sludge removal will be determined by sampling the lagoon bottoms and side walls, and analyzing the soils for selected chemical constituents. Soils will be collected from 0 to 6 inches in depth using precleaned stainless steel spoons. A sampling grid will be designed for each lagoon to allow a statistically significant number of sampling nodes to be identified and a composite sample from the nodes collected, to adequately characterize the extent of contaminant removal (see sampling plan). Analyses will be performed by a New York State-certified analytical laboratory on an accelerated turnaround basis to expedite backfilling and closure.

Based on the laboratory data, the adequacy of the remedial activity will be determined. In the event that a sample exhibits concentrations of constituents in excess of the action levels, further excavation, sampling, and analysis will occur until a sufficient amount of contaminated material is removed.

When contaminated material is removed to an acceptable level as specified by NYSDEC, final closure procedures will commence.

Between the time of initial excavation and backfilling of the lagoons, an impermeable membrane will cover the excavation area to prevent accumulation of water and minimize recharge to the surficial aquifer. In addition, a small pump will be placed in the excavated impoundment to collect any residual rainwater and/or groundwater recharge. Water which has been in contact with lagoon sediment will be treated in the onsite pretreatment facility.

4.8 SURFACE IMPOUNDMENT RECLAMATION

Backfilling of the excavated impoundments will commence once the cleanup levels are reached. Clean fill will be used to bring the excavation to within 3 feet of grade and the fill compacted. A low permeability clay with a porosity of at least 10^{-7} will be used to bring the excavation to existing grade. The clay will either be certified as being free of contaminants or will be tested for contaminants prior to use as fill material. The clay will be compacted to reduce vertical permeability. A 3-inch layer of topsoil will be placed on top of the clay and graded to create a westerly slope of 2 to 4%. Rye seed and mul will be distributed over the entire surface of the filled impoundments to promote vegetative growth and to prevent topsoil erosion.

4.8.1 Discharge Pipe Abandonment

An approximately 350-foot-long discharge pipe from the southernmost impoundment to the pH adjustment tank will also require closure. The pipe will be cleaned with a high pressure surfactant wash and rinsed to back flush the line. Collected washwater will be pumped to the onsite treatment plant prior to discharge to the sanitary sewer. The line will then be plugged with cement and abandoned in place.

4.8.2 Concrete pH Adjustment Tank Abandonment

The concrete pH adjustment tank will be cleaned in a similar manner, filled with low permeability soil, plugged with cement, and abandoned in place.

5. SAFETY PRECAUTIONS

A site-specific health and safety plan will be developed which will describe all safety precautions. It will also contain procedures to follow in case of an accidental fire or injury to personnel.

Procedures will be taken to ensure against dust contamination during solidification processes.

Prior to leaving the work area, personnel will remove bulk material from boots and gloves. Exposed skin surfaces will be thoroughly washed and rinsed.

6. WASTE DISPOSAL

During the closure of the surface impoundments, the following wastes are expected to be generated:

- Contaminated wastewater from the surface impoundments;
- Contaminated soil and debris;
- Wash water; and
- Protective clothing.

All liquids will be treated in the onsite treatment plant.

All noncontaminated, nonhazardous waste will be shipped to a local sanitary landfill, with leachate collection systems for final disposal.

At the end of the closure operations, no waste generated during closure will be left on site.

7. CLOSURE SCHEDULE

Once this closure plan is approved by NYSDEC, CLTL will initiate the procedures to implement the plan. All closure activities will be completed within 90 days from the date of approval of the closure plan, as shown in Figure 7-1.

This program has been designed to limit the potential for groundwater recharge from the lagoons by preventing the concurrent exposure of excavated lagoon surfaces. Each surface impoundment will be closed individually.

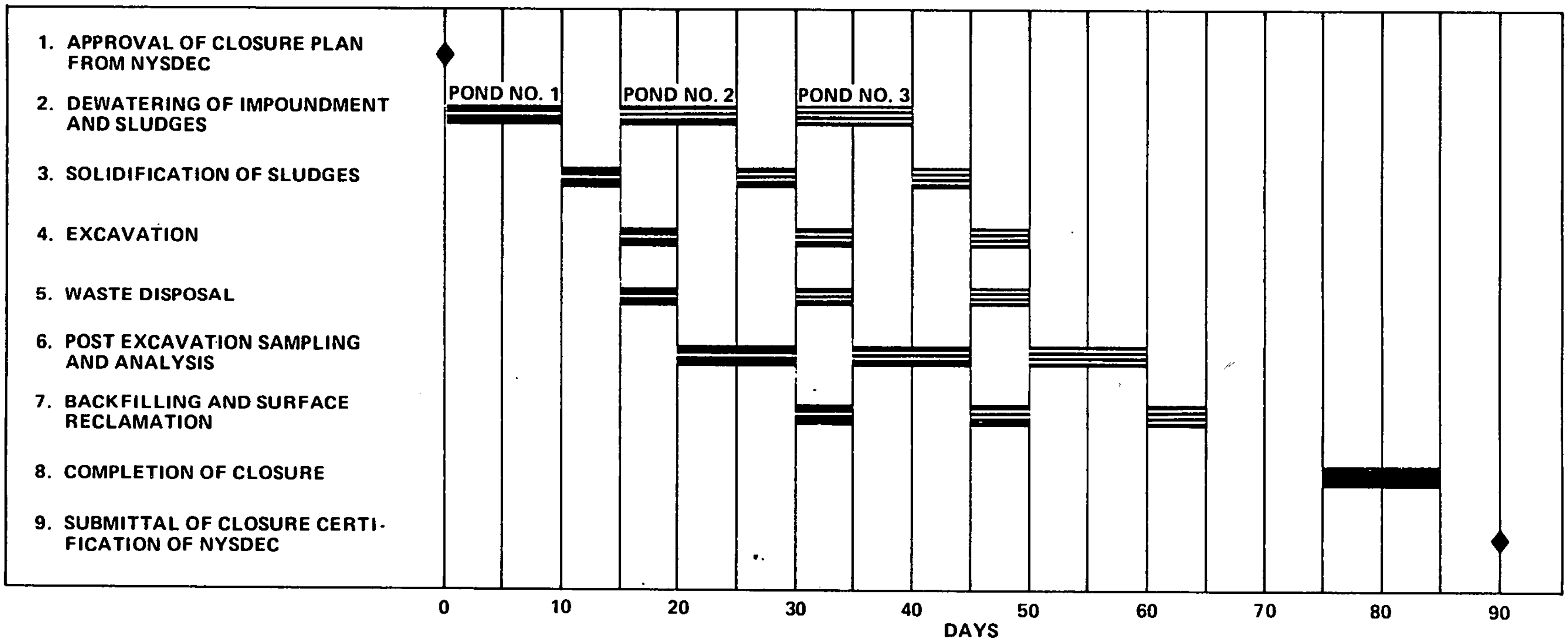

Figure 7–1 ANTICIPATED CLOSURE SCHEDULE

8. CLOSURE CERTIFICATION

Upon completion of the impoundment closure, CLTL will submit to NYSDEC a certification of closure signed by an independent professional engineer registered in New York State. This certification will state that the surface impoundments have been closed in accordance with the specifications set forth in this plan.

9. POST-CLOSURE MONITORING

Post-closure monitoring will be designed to comply with the regulations specified in NYCRR 6, 373(2.6). In addition, following closure of all impoundments a new upgradient monitoring well will be installed as recommended in the Phase 1 report (ES 1986) and each well will be sampled and analyzed for volatile and semivolatile compounds, PCBs, pesticides, and metals.

10. REFERENCES

Engineering Science (ES), 1986, Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I Investigations: Chemical Leaman Tank Lines, New York State No. 915014, Engineering Science, Liverpool, New York.

United States Environmental Protection Agency (EPA), 1987, Results of Site Investigation at Chemical Leaman Tank Lines Site, Tonawanda, New York, EPA Region II, New York, New York.

United States Geological Survey (USGS), 1985, Preliminary Evaluation of Chemical Migration to Groundwater and the Niagara River from Selected Waste Disposal Sites, Final Report.