33295

FEDERAL ON-SCENE COORDINATOR'S REPORT

DRAKE CHEMICAL NPL SITE #3
LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA

CERCLA REMOVAL/REMEDIAL ACTION
AUGUST 9, 1988 through NOVEMBER 1990

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III, PHILADELPHIA, PENNSYLVANIA

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FACTS SHEET

REGION III
CERCLA REMOVAL/REMEDIAL ACTION

Project #208
FACTS SHEET

SITE:	Drake Chemical NPL Site #3
SIZE:	Approximately 8 acres
LOCATION:	Lock Haven, Clinton County, Pennsylvania
APPROVAL DATE:	August 8, 1988
PROJECT DATES:	August 8, 1988 through November 1990
DESCRIPTION:	The Drake Chemical Site (NPL #31) was a chemical manufacturing facility that operated from 1961 until August 1981, producing the herbicide trichlorophenylacetic acid (FENAC) and a variety of intermediate chemicals used in dyes, pharmaceuticals, cosmetics and pesticides. The site consisted of two lined lagoons containing treatment liquids and sludges from cyanation and amination processes, 30 chemical tanks and reactors, 200 drums containing unknown chemicals, and six pressurized gas cylinders containing hydrogen fluoride (HF). The drums were leaking and not separated by compatibility group and the HF cylinders were rusting, with the valves in danger of failing. Soil contamination was known to exist at the site and there was a threat to human health via direct contact.
HAZARDOUS MATERIALS:	Concentrated acids, cyanide salts, FENAC, and assorted organic chemicals.
QUANTITIES REMOVED:	19,450 gallons hazardous liquid; 220,000 gallons lagoon liquid and sludge; 60 cubic yards tank solids; 8 55-gallon drums cyanide solids; 288 overpacked drums; 8 cylinders; 10,000 lbs. product material; and 6518 tons of debris.
OSC:	Edward M. Powell
REMOVAL CONTRACTOR:	O.H. Materials, Inc., Findlay, OH
DISPOSAL LOCATIONS:	CyanoKEM, Detroit, MI; ThermalKEM, Greer, SC; CECOS, Bristol, CT; Envirosafe, Belleville, MI; Groce Labs, Greer, SC; Wayne Disposal, Belleville, MI; Adams Center Landfill, Ft. Wayne, IN
PROJECT CEILING:	$4,580,460
PROJECT COST:	$3,009,789 (Estimated)
COMMENTS:	Following emergency actions in 1982 and again in 1986, the EPA Remedial Program performed an RI/FS and designed a 3-phased cleanup documented in the Record of Decision (ROD). This project was a joint Removal/Remedial action to complete Phase II of the ROD, including demolishing buildings, decommissioning lagoons and disposing of surface drums, tanks and debris. Remedial then assumed the lead (date) to final site cleanup and removal from the NPL.

Edward M. Powell, OSC

FOREWORD

FOREWORD

This report is submitted in accordance with procedures outlined in Section 300.165 of the National Oil and Hazardous Substances Contingency Plan (NCP), 1990. The primary objective of the Plan is to provide a coordinated federal response capability at the scene of an unplanned or sudden discharge of oil or hazardous substance that poses an imminent and substantial threat to the public health and/or the environment. In addition, the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), promote a coordinated federal, state and local response to mitigate situations at hazardous waste sites that pose a potential threat to the public health. Conditions at the Drake Chemical NPL Site presented a significant risk of harm providing a legal basis for federal response activities. The provisions of the NCP were implemented by the U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

Special thanks are extended to those participants in this federal removal/remedial activity. The effectiveness of the project was a direct result of the dedication and professionalism of all participating agencies, groups and individuals.

Edward M. Powell
On-Scene Coordinator
U.S. EPA, Region III
Philadelphia, PA

SECTION I

INTRODUCTION

I. INTRODUCTION

A. Initial Situation

The Drake Chemical Site is on the National Priorities List (Site #31) and was addressed by the U.S. EPA Emergency Response Section in 1982 and 1986 and by the U.S. EPA Remedial Section drums in 1982 and 1988/89. Drake Chemical, Inc. was a chemical manufacturing facility that operated from 1961 until August 1981 and produced the herbicide trichlorophenylacetic acid (trade name FENAC) and a variety of intermediate chemicals used in dyes, pharmeceuticals, cosmetics, and pesticides. A Remedial investigation report indicated that the following compounds also existed at Drake:

- Chlorobenzene,
- toluene,
- methylene chloride,
- benzo(a)anthracene,
- acetone,
- benzoic acid,
- benzene,
- trichloroethylene,
- 1,3-dichlorobenzene,
- chloroform,
- ethyl benzene,
- bis(2-ethylhexyl)phtalate.

Typical chemical processes used by Drake were cyanation, amination, sulfonation, and chlorination. The waste streams produced during these processes were either treated in surface impoundments (lime slurry, carbon filtration) or drummed and stored on site.

The facility consisted of five buildings; two process buildings, one oven building, one warehouse, and one wastewater treatment building. A total of 93 process tanks and reactors were located on the site. Of these, 48 were located outside or adjacent to the buildings, while 45 were enclosed within the buildings.

Large areas of the site were used as treatment lagoons that were filled with process wastes, sludges, drums, demolition, and facility debris. Two lined lagoons were located behind the wastewater treatment building which were used to store process wastes prior to treatment. The total volume of these lagoons was estimated to be 200,000 gallons. Toward the rear of the property was a surface pond which apparently was fed by groundwater. There was no designated outlet from this pond; however, the contents appeared to leach through the lagoon and into a small tributary to Bald Eagle Creek through an inactive railroad line located along the border of the site.

The "Remedial Investigation Report" (RI) submitted by NUS Corporation in April of 1985 recommended separating the cleanup into four phases, based on hazard risk assessment to the local population. This was approved as a Record of Decision (ROD) in 1986.

Phase I was intended to eliminate direct contact with the leachate stream and was completed in 1986. (See OSC report for Project #142 on file at EPA Region III, Philadelphia, PA).

The objectives of Phase II were based on the RI and the "Feasibility Study of Alternatives--Phase II Building and Contaminated Structures" submitted by NUS Corporation in March of 1986. Recommendations by the Pennsylvania Department of Environmental Resources (PA DER) and staff summaries and recommendations were also taken into consideration.

The ROD described the selected remedy for Phase II as draining and removing two lined wastewater treatment lagoons and treating the drained liquid and sludge in an off-site, RCRA-permitted treatment facility; analyzing and disposing (if needed) of the decontaminated fluid in a RCRA-permitted facility; and incinerating chemicals stored in the warehouse in an off-site, RCRA-permitted facility.

Phase II also consisted of the removal of all tanks, buildings, and debris. All metal structures that could be salvaged as scrap were to be decontaminated. Any material not decontaminated would be transported to and disposed of in a RCRA-permitted landfill. Any liquids removed were to go to a RCRA-permitted treatment facility. Phase II activities were completed by the EPA Eastern Removal Section under Removal Project #208 and are described in this report.

Phase III, which remains to be addressed as a Remedial Section lead, will required the installation of monitoring wells to treat existing groundwater problems.

B. Location of the Site

The Drake Chemical Site was an 8-acre facility located in the southern portion of Lock Haven in Clinton County, Pennsylvania. At the time of this project, the population was approximately 15,000. The facility was bordered by a shopping center, the American Color and Chemical Company, and a large apartment complex inhabited primarily by senior citizens. Elementary schools, several churches, and a state college were located within one mile of the site. The site was located in the hundred-year floodplain and drained into Bald Eagle Creek, located less than 1/2 mile south of the site.

C. Efforts to Obtain Cleanup by Potential Responsible Party

After the failure of Drake to comply with a Consent Order and Agreement issued by PA DER in 1979, On January 5, 1982, PA DER ordered the company to clean up the site. The owners of Drake Chemicals, Inc. did not comply. The owners of the company are now deceased and no individual or private company had since taken over the property.

SECTION II

ROSTER OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS

II. ROSTER OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS

A. Names and Addresses

NAMES AND ADDRESSES	CONTACT	BRIEF DESCRIPTION OF DUTIES
U.S. EPA - Region III Eastern Response and Preparedness Section 841 Chestnut Building Philadelphia, PA 19107 (215) 597-9800	E. Martin Powell George English, OSC Joan Henry, FAS	Federal On-Scene Coordinator; responsible for overall success of the project. Assist OSC on site and from office. Assist OSC on site and with cost tracking.
U.S. EPA - Region III Office of Regional Counsel 841 Chestnut Building Philadelphia, PA 19107 (215) 597-9800		Provided OSC with legal advice.
U.S. EPA - Region III Office of Public Affairs 841 Chestnut Building Philadelphia, PA 19107 (215) 598-9800	Hal Yates	Assisted OSC with resident and media concerns; attended public meetings.
U.S. EPA - Region III Remedial Section 841 Chestnut Street Philadelphia, PA 19107 (215) 597-9800	Roy Schrock, RPM	Coordinated site activities relating to ROD with OSC.
Pennsylvania U.S. Congressional District #23 315 Allen Street State College, PA 16801 (900) 740-3030	Hon. William F. Clinger Rebecca Mills	Member of Congress District Office Manager

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ROSTER OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS (continued)

A. Names and Addresses (continued)

NAMES AND ADDRESSES	CONTACT	BRIEF DESCRIPTION OF DUTIES
Commonwealth of Pennsylvania Dept. of Environmental Resources 200 Pine Street Williamsport, PA 17701 (717) 327-3636	George Polansky, Solid Waste Specialist Dennis Wolfe, Hazardous Waste Coordinator	Coordinated state's participation in the project.
Commonwealth of Pennsylvania Dept. of Environmental Resources Bureau of Waste Management Division of Emergency and Remedial Response 7th Floor, Fulton Building P.O. Box 2063 Harrisburg, PA 17120 (717) 783-2300	Donald Becker, Chief, Remedial Response Section	Coordinated state's participation in the project.
South Carolina Dept. of Health and Environmental Control 2600 Bull Street Columbia, SC 29201 (803) 734-5200	Alex Daves	Assisted with coordination of disposal of solid wastes.
Clinton County Communications and Management Agency Susqueview, Creek Drive Lock Haven, PA 17745 (717) 893-4090	Brenda Wooding, Director	Helped with contingency planning and communicating public concerns.
Clinton County Planning Commission 171 Susquehanna Avenue Lock Haven, PA 17745 (717) 893-4090	James Yoktheimer, Director	Coordinated local efforts and participation in the project.

A. Names and Addresses (continued)

NAMES AND ADDRESSES	CONTACT	BRIEF DESCRIPTION OF DUTIES
Office of the Sheriff Clinton County Courthouse Third Floor Lock Haven, PA 17745 (717) 893-4090	Keith Eichenlaub, Sheriff Robert Santone, Chief Deputy Sheriff	Assisted with contingency planning and local communications.
Lock Haven Police Department 20 E. Church Street Lock Haven, PA 17745 (717) 893-5911	Chief Sander	Assisted with road access control and contingency planning.
Roy F. WESTON, Inc. 53 Haddonfield Road, Suite 306 Cherry Hill, NJ 08002 (609) 482-0222	John Fellinger Christine Wagner	Provided on-site photographic and site activities documentation, contractor monitoring, site safety and technical assistance.
O.H. Materials, Inc. P.O. Box 551 Findlay, OH 45839-0551 (800) 537-9540	John Bourret, Response Manager	ERCS prime contractor; provided on-site contract administration and coordinated subcontractors.
C.V. Specialty Gas, Inc. 4 Hampton Place Nutley, NJ 07710 (201) 661-0669	Carmelo Vasi	Identified contents and manufacturers of compressed gas cylinders.
ThermalKEM, Inc. 454 S. Anderson Road Greer, SC 29730 (803) 329-9690	Ron Snyder, Field Service Supervisor David Jones, Project Manager	Incineration facility for drums.
Groce Labs, Inc. 340 Robinson Road Greer, SC 29651 (803) 877-1048		Disposal facility for ammonia cylinders.

A. Names and Addresses (continued)

NAMES AND ADDRESSES	CONTACT	BRIEF DESCRIPTION OF DUTIES
James P. Webb Road Construction P.O. Box 907 Lock Haven, PA 17745 (717) 748-6724	James P. Webb, President/General Manager	Restored site access road.
Wayne Disposal 1349 Huron Street Ypsilanti, MI 48197 (313) 485-6460		Disposal facility for base neutral solids.
Chemical Waste Management, Inc. Adams Center Landfill 4636 Adams Center Road Ft. Wayne, IN 46806 (219) 447-5585		Disposal facility for solid and metal debris.
CECOS 51 Broderick Road Bristol, CT 06010 (203) 585-8917		Disposal facility for contaminated lagoon liquid and sludge.
CyanoKEM 12381 Schaeffer Highway Detroit, MI 48227 (313) 933-1850		Disposal facility for contaminated lagoon liquid and sludge.
Envirosafe Services, Inc. P.O. Box 833 Valley Forge, PA 19482 (215) 962-0800		Disposal facility for sulfide solids.

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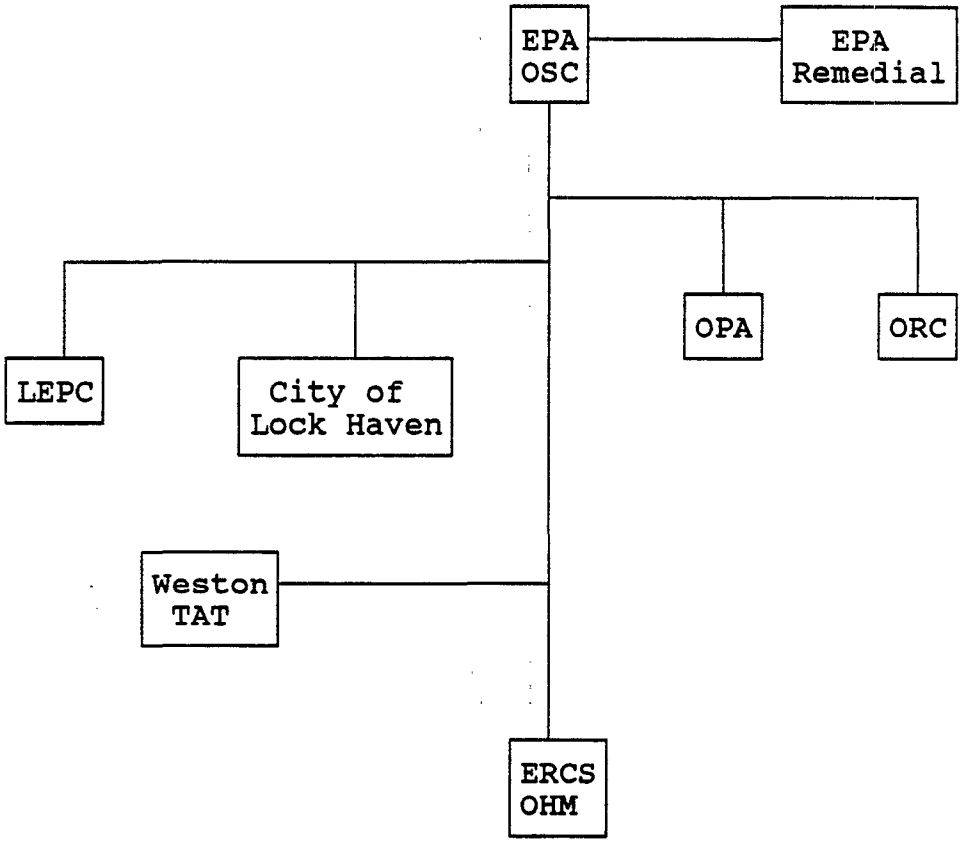
ROSTER OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS (continued)

B. Organization of the Response



C. Glossary of Abbreviations

CCEM	Clinton County Emergency Management
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COB	Close of business
DPO	EPA Deputy Project Officer (TAT Contract)
EPA	U.S. Environmental Protection Agency
ERCS	Emergency Response Cleanup Services
ERD	EPA Emergency Response Division, Washington, DC
FAS	EPA Field Administrative Specialist
HF	Hydrogen fluoride
LEL	Lower Explosive Limit
LEPC	Local Emergency Preparedness Commission
MSDS	Material Safety Data Sheets
NCP	National Oil and Hazardous Substances Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OHM	O.H. Materials, Inc.
OPA	EPA Office of Public Affairs
ORC	EPA Office of Regional Counsel
OSC	EPA On-Scene Coordinator
PA DER	Pennsylvania Department of Environmental Resources
POTW	Public Owned Treatment Works
PRP	Potential Responsible Party
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
R-PA	Republican - Pennsylvania
ROD	Record of Decision
RPM	EPA Remedial Project Manager
RM	ERCS Response Manager
SARA	Superfund Amendments and Reauthorization Act of 1986
TAT	Roy F. Weston, Inc., Technical Assistance Team
TATL	Technical Assistance Team Leader

SECTION III

NARRATIVE OF EVENTS

III. NARRATIVE OF EVENTS

At the time of this removal action , the Drake Chemical Site was on the National Priorities List (NPL) and had been addressed by EPA since 1982. Phase I of the project, which addressed the leachate stream, was completed in April 1985.

On August 9, 1988, Phase II operations of the Drake Chemical NPL Site cleanup began under the direction of U.S. EPA Region III Emergency Response Section in conjunction with the EPA Remedial Program. This project was directed by OSC Edward Martin Powell.

During the first few weeks of the project, OSC Powell contacted local authorities and supervisors of stores and facilities in the immediate vicinity to inform them of the scope of work and to develop emergency contingency plans. The ERCS contractor, O.H. Materials, set up the command post area and an access control road. Assessments were performed to develop a sampling plan and estimate quantities of materials to be removed.

By the end of August 1988, all drums had been staged and sampled. Sampling of all exterior tanks had also been completed. The warehouse and oven buildings (building #3 and #5, respectively) had been demolished and the resulting debris was sent for disposal.

The effluent treatment building (building #4) was demolished during the beginning of September. During this time, tank contents were removed and bulked into chambers. The empty tanks were cut with shears and partner saws and the metal segments were staged for disposal. Within six weeks of the project start date, all tanks had been emptied and the contents were bulked according to compatibility into six waste streams; three chambers containing liquids and three containing solids. In addition, six sumps containing 850 gallons of liquid were bulked with the tank liquids.

The materials found in the two process buildings were the next wastes to be addressed. Approximately 10,000 pounds of palleted product, in addition to eight compressed gas cylinders, were found inside these buildings. These materials were removed and staged for disposal. Process lines attached to these buildings were inspected for product content, drained and tagged according to their contents.

During the first week in October, the first process building (building #1) was demolished. The second process building (building #2) was disassembled the following week. Special precautions were necessary during the demolition of these buildings as hazardous materials remained in the attached process lines and entire tanks were enclosed inside the building. The Lock Haven Fire Department was on scene during these operations to provide a

water spray system to suppress any emitting vapors. A 100-foot crane was used to carefully detach specified sections of the buildings.

Removal of lagoon liquids and sludge began on October 9, 1988, with approximately 200,000 gallons of lagoon liquids and sludge being transported to either CyanoKEM in Detroit, Michigan, or CECOS in Bristol, Connecticut.

Specialty gas consultant, Carmelo Vasi, visited the site on October 19, 1988 to assess the unidentified compressed gas cylinders that had been discovered on site. He submitted a report to OSC Powell identifying the contents and manufacturers of these cylinders, who were then contacted and accepted cylinders identified as theirs.

On November 18, 1988, 296 drums were transported to ThermalKEM in Greer, South Carolina for incineration. These drums were separated into eleven waste streams and incinerated according to compatibility. The remaining empty drums were crushed on site and disposed of with other metal debris.

One of the most time-consuming operations was the staging and loading of debris. A total of 6518 tons of building and metal debris was transported to Adams Center Landfill in Ft. Wayne, Indiana, for disposal.

Transportation of all hazardous materials off site for disposal was completed by the original project end date, December 15, 1988.

Included in the scope of work was an agreement to repair the access road to the site. A local subcontractor was hired by OHM to perform this task, who completed the operation in the spring of 1989.

By November of 1990, OSC Powell had received all signed certificates of disposal from the disposal facility, thereby closing the project.

This completes Phase II of the Drake Chemical NPL Site cleanup. The cooperation of agencies and individuals and the planned organization of operations resulted in a successful project completion which was on time and under budget.

SECTION IV

RESOURCES COMMITTED

IV. RESOURCES COMMITTED

A. Funding Documentation

On July 13, 1988, the Region III Regional Administrator approved a $2-Million Exemption for the phases described in Section I, Introduction, to be addressed as the Drake Chemical NPL Site #3. On August 4, 1988, EPA Headquarters concurred, thereby authorizing CERCLA funds for a total project ceiling of $4,580,460.

C. Estimated Total Cost Summary

1. Extramural	
ERCS	$ 2,741,662
TAT	143,028
Extramural Subtotal	$ 2,884,690
2. Intramural	
EPA Direct	$ 51,376
EPA Indirect	$ 73,723
Intramural Subtotal	$ 125,099
TOTAL ESTIMATED PROJECT COST	$ 3,009,789

SECTION V

EFFECTIVENESS OF THE REMOVAL

V. EFFECTIVENESS OF THE REMOVAL

A. Activities of Various Agencies

1. Potential Responsible Parties

No cleanup activity was performed by the potential responsible party, Drake Chemicals, Inc. The former owners are now deceased and the property was abandoned. As a result of this action, the site was secured and the responsibility of the U.S. EPA.

2. Federal Agencies and Special Forces

The Drake Chemical Site, at this time, is on the National Priorities List (NPL Site #31). Due to the complex nature of the site, the Remedial Program took a three-phase approach to its cleanup.

On February 26, 1982, the Removal Program received funding to proceed with CERCLA removal activities. In conjunction with PA DER, EPA conducted emergency removal activities which included:

- Removing or stabilizing the contents of over 60 storage vessels and reactors;
- removing and disposing of over 2000 drums;
- installation of security fence to restrict access;
- conducting an extent-of-contamination study.

The cleanup was completed on April 21, 1982, during which time the EPA Environmental Response Team (ERT) performed an extent-of-contamination study in March 1982. The study focused on the area around the leachate stream.

In August, 1982, EPA initiated Remedial Action Studies at the site. Phase I of the Remedial Investigation Report was completed in April 1985. The Phase II Feasibility Study Report was completed in March 1986.

In June 1986, the EPA Emergency Response Section responded to a sulfuric acid (oleum) leak at the Drake Chemical facility. The leaking acid was neutralized with soda ash, and the leaking pipe was removed, neutralized and sent for disposal. ERT assisted during these operations.

On August 9, 1988, EPA Region III Removal Program began Phase II operations. The actions performed during this phase of the project included:

- Removing and disposing of all tanks, drums, buildings and debris;
- draining and removing two wastewater lagoons containing an estimated 200,000 gallons of contaminated lagoon liquid and sludge;
- Disposing of all chemicals stored in buildings on site.

Activities of Various Agencies (continued)

2. Federal Agencies and Special Forces (continued)
All the aforementioned activities were completed by December 15, 1988, the original completion date set, and within the original project budget.

The Federal On-Scene Coordinator in charge of this phase of the project was Edward Martin Powell, who remained on scene to direct activities throughout the entire length of the cleanup. Activities performed by the OSC were as follows:

- Prepared and submitted $2-million exemption/funding request;
- coordinated with EPA Remedial and Enforcement Programs;
- coordinated with PA DER and other state agencies;
- coordinated with local emergency management agencies;
- coordinated with OPA to address public concerns;
- monitored and directed contractor activities;
- organized tasks to be performed;
- monitored personnel, equipment and disposal costs;
- set up procedures for command post and site operations;
- maintained safety of all on-site personnel and the surrounding community.

At times during the project, OSC Powell was assisted by OSC George English. Personnel from the EPA Office of Public Affairs and Office of Regional Counsel also assisted OSC Powell in their respective areas of expertise.

The management of this project as directed by the OSC was both time and cost efficient. Coordination among agencies involved and planned organization of site activities allowed for operations to be conducted beyond the scope of work, primarily the demolition of the two process buildings.

3. State and Local Agencies
On April 4, 1979, a Consent Order and Agreement was executed between Drake Chemical, Inc. and the Pennsylvania Department of Environmental Resources (PA DER). On September 7, 1979, Drake was notified by PA DER that they were found in violation of this Order. On January 5, 1982, a second Order was issued against Drake Chemical by PA DER and the company was again cited for non-compliance. Drake Chemical filed for bankruptcy (Chapter 7) in 1982, and was therefore unable to fund necessary cleanup activities.

The continued participation of PA DER personnel during this removal action proved to be instrumental toward the overall success of the project. PA DER provided timely, expert advice in the following areas:

- Obtaining background information on Drake Chemical, the compounds produced, and the materials stored at the facility;
- assisting the OSC in response coordination;
- coordinating efforts with other Pennsylvania state, county and local agencies;
- Providing public information support on and off site.

Local resources contributed to making this project a success. Both the City of Lock Haven and the Clinton County Emergency Management Agency assisted the OSC to:

- Coordinate a community relations plan and an emergency contingency plan;
- set up public meetings and provide the OSC with feedback;
- provide emergency medical and fire support;
- provide assistance during mobilization, including installation of utilities;
- provide contacts for obtaining equipment and supplies locally.

The support, cooperation and expertise of these agencies and individuals were a signifi-cant contribution to smooth operations and a timely, successful completion of this project.

4. Contractors

The Roy F. Weston Technical Assistance Team (TAT) provided technical and logistical support, especially concerning the handling of the hazardous materials found on site. TAT also provided both written and video documentation of events. In addition, TAT was available to assist the OSC in coordinating site operations.

Due to the variety of hazards presented at the Drake Chemical facility, the OSC chose O.H. Materials, Inc., of Findlay, Ohio, as the prime contractor under the Emergency Response Cleanup Services (ERCS) mechanism, based on their documented expertise in dealing with hazardous materials cleanups of this magnitude. John Bourret served as the Response Manager for this project. As the prime contractor, OHM performed all site cleanup operations as directed by the OSC. Some of the tasks performed included:

- Setting up decontamination area;
- providing supplies for site activities;
- sampling tanks, drums and lagoon contents;
- bulking hazardous materials according to compatibility;
- arranging for disposal of hazardous materials;
- demolishing buildings and lagoons;
- staging debris and cutting tanks for disposal.

A. Activities of Various Agencies (continued)

4. Contractors (continued)

Specialty gas consultant Carmelo Vasi assisted the OSC by identifying the contents and manufacturers of compressed gas cylinders found on site. His expertise was most valuable, which resulted in the reclaiming of many cylinders by their manufacturer.

The efforts of these organizations and the personnel they provided also contributed to the timely and successful completion of this project.

B. Analytical Synopsis

All containers found at the site, including drums, tanks, lagoons, sumps, etc., were sampled for content and compatibility. Due to the prohibitive amount of analytical information, hard copies are not included as part of this report. Further information and copies of complete analytical results can be obtained from the site file upon request to U.S. EPA Region III at the address and phone number provided in Section II, ROSTER OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS, of this report.

C. Disposal Methods and Quantities Removed

1. Tanks

A total of 93 tanks were originally found, of which 48 were located outside or adjacent to the buildings on site, while the remaining 45 were enclosed within the buildings themselves. Samples of all tanks were taken and analyzed for compatibility. The liquid contents were bulked into three waste streams and disposed of as follows:

WASTE STREAM	AMOUNT	DISPOSAL FACILITY
Base neutral liquids	7600 gallons	CyanoKEM, Detroit, MI
Oxidizing acid liquids	5000 gallons	CyanoKEM, Detroit, MI
Oxidizing liquids	6000 gallons	CECOS, Bristol, CT

Tank solids were also bulked according to compatibility and disposed of as follows:

WASTE STREAM	AMOUNT	DISPOSAL FACILITY
Base neutral solids	40 cubic yards	Wayne Disposal
Sulfide solids	20 cubic yards	EnviroSafe
Cyanide solids	8 55-gallon drums	ThermalKEM

The empty tanks were rinsed and cut with shears, torches and partner saws on site. The resultant metal debris was sent for disposal along with building debris.

C. Disposal Methods and Quantities Removed (continued)

2. Sumps

Six sumps were located on the Drake Chemical site. Samples of liquids in the sumps were taken and analyzed for disposal. Results indicated that these contaminants could be categorized in the same waste streams as the tank liquids. Approximately 850 gallons of sump liquids were drained, bulked and disposed of with the tank liquids.

3. Drums

A total of approximately 360 drums were addressed at the site. Drums containing product were sampled, overpacked and staged in a remote area of the site. Empty drums were crushed on site and disposed of with other debris. The drum contents were categorized into the following waste streams and transported to ThermalKEM in South Carolina for incineration.

WASTE STREAM	NUMBER OF DRUMS
Acid solids	142
Oxidizing acid solids	22
Halogenated organic liquids	10
Flammable solids	22
Cyanide solids	1
Oxidizing solids	9
Base neutral solids	47
Organic solids	14
Sulfide solids	20
Flammable liquid	1
TOTAL	288

4. Buildings

Five buildings were originally located at the site; two process buildings, a warehouse, an effluent treatment building, and one oven building. Each building was demolished separately and debris was staged as operations progressed. Demolition of the two process building was not included in the original scope of work; however, in the opinion of the OSC, it was necessary to demolish them based on the threat posed by the chemicals contained in the process lines and vessels located in the structurally unsafe buildings.

A total of 6518 tons of building/metal debris was transported off site to Adams Center Landfill in Ft. Wayne, Indiana for disposal.

5. Lagoons

Two lined lagoons were removed during this phase. Initial measurements indicated that approximately 200,000 gallons of contaminated liquid and sludge were contained in these lagoons. Samples of both lagoon liquid and sludge were taken and sent for disposal

C. Disposal Methods and Quantities Removed (continued)

5. Lagoons (continued)

analysis. Results indicated that the same contaminants, primarily cyanide, of similar degree were present in both lagoons.

Approximately 175,000 gallons of lagoon liquids were pumped and transported to two wastewater treatment facilities for disposal. The two facilities that accepted this waste were CyanoKEM of Detroit, Michigan and CECOS of Bristol, Connecticut.

Approximately 45,000 gallons of lagoon sludge was withdrawn using a heavy-duty pump

and transported to CyanoKEM for wastewater treatment, for a total of 220,000 gallons of lagoon liquid and sludge having been removed from the site.

6. Compressed Gas Cylinders

Eight cylinders were discovered during removal operations. The contents were identified by a cylinder expert and their manufacturers were contacted. Those cylinders determined to be empty that were not reclaimed by their manufacturer were crushed on site. Those others still containing gases were returned as follows:

CYLINDER ID #	CONTENTS	FACILITY
1	Empty	crushed/Adams Center Landfill
2	Nitrogen	Philip Wolf & Sons
3	Nitrogen	Philip Wolf & Sons
4	Ammonia	Groce Labs
5	Ammonia	Groce Labs
6	Empty	crushed/Adams Center Landfill
7	Empty	Matheson Gas
8	Sulfur dioxide	Air Products & Chemicals

7. Product

Approximately 10,000 lbs. of product materials was found bagged and staged on pallets in building #2. Most of this material proved useful in facilitating site operations. Below is a list of this material and how it was put to use:

CONTENTS	AMOUNT	USE
Sodium sulfate	3500 lbs.	Donated to Woolrich, Inc.
Benzoic acid	600 lbs.	Used to control algae growth in site holding pools
Calcium chloride	900 lbs.	Used as salt to melt ice on site
Potassium chloride	2400 lbs.	Used as salt to melt ice on site
Sodium nitrate	2000 lbs.	Used to neutralize cyanide on site
Celite 545 (food chemical)	400 lbs.	Non-usable; disposed at Adams Center Landfill

SECTION VI

CHRONOLOGY OF EVENTS

VI. CHRONOLOGY OF EVENTS

This section presents a brief summary of events as they occurred during the Drake Chemical NPL Site #3 removal action. The intent is to provide the reader with an overview of site activities, complemented by other sections and appendices herein.

July 13, 1988 - Wednesday
Two-million dollar exemption/funding request was approved at the Regional level and was sent to EPA ERD for concurrence.

August 5, 1988 - Friday
EPA ERD approved the two-million dollar exemption for a project ceiling of $4,580,460.

August 9, 1988 - Tuesday
OSC Powell received final approval of funds for the Drake Chemical #3 NPL Site Removal/Remedial joint cleanup. The allocated Superfund monies addressed only Phase II of the ROD generated by the EPA Remedial Section. The final phase would remain to be addressed as a Remedial Section lead. OSC Powell arranged for ERCS and TAT to mobilize to the site on 8/10/88.

August 10, 1988 - Wednesday
OSC Powell was on scene to coordinate the mobilization of TAT and ERCS personnel with heavy equipment. The ERCS RM was directed by the OSC to begin site preparation, including set up of command post area and decontamination/reduction zone on 8/11/88.

August 11, 1988 - Thursday
ERCS personnel cleared command post area located at the northeast end of the site on an easement adjacent to the Drake property for laying of stone to set up office trailers.

OSC Powell met with Lock Haven Police Chief Sander and Director of Public Works Ardner to discuss site utilities, site access and existence of underground utilities. The Hope Hose Company was contacted to discuss fire protection and emergency procedures for the site.

The County Sheriff and his Chief Deputy accompanied OSC Powell to meet with Mrs. Fisher, taxpayer for easement area selected for office trailer placement, and discuss the use of the property. Mrs. Fisher stated that her brother, who was in the Marshal Islands, owned the property and she could not release it without his consent. OSC Powell planned to pursue the matter through ORC.

August 12, 1988 - Friday
OSC Powell, OSC English and TAT met with Clinton County Emergency Management (CCEM) representatives Jim Yotheimer and Dennis Caprio to discuss the local contingency plan. To ensure coordination, OSC Powell planned to contact the county periodically to provide them with updates of site activities.

ERCS continued staging and setting up command post and making site preparation.

PA DER Dennis Wolfe and George Polanski were on scene and were updated on actions to date by OSC English.

August 13, 1988 - Saturday
ERCS continued site mobilization and setup. Emergency decontamination showers were installed in command post area at strategic points throughout the site.

While stone was being laid for command post, a dump truck began to pull out prior to lowering its bed and struck and dislodged an overhead electrical line. It snapped at the transformer and immediately de-energized it. The electric company was able to respond and repair the line in two hours.

August 14, 1988 - Sunday
OSC Powell directed the ERCS chemist and TAT to sample the east and west lagoons, both liquid and sludge to be analyzed for disposal in order to generate a waste profile as soon as possible.

A planning meeting was held with OSC Powell, ERCS RM, ERCS foreman, and TAT to discuss direction and scope of upcoming site tasks because site preparation was nearing completion. These meetings were to be held daily to ensure site coordination.

August 15, 1988 - Monday
OSC Powell visited the managers of the stores in the nearby shopping plaza to update them on the scope of work and to obtain emergency contacts and phone numbers.

CCEM Caprio provided EPA with a copy of the County Contingency Plan.

A CONRAIL train engine passing on the tracks adjacent to the site ignited a small brush fire in the immediate vicinity. This minor emergency illustrated the necessity of having the command post area east of the railroad tracks where better access roads were available.

August 16, 1988 - Tuesday
ERCS worked on access control road that would allow trucks to enter the site near the command post area and depart through the decon area. To prepare the decon area, ERCS inspected and cleaned existing decon pad and built forms for a truck scale. ERCS prepared drum overpacks for drum staging operation.

The power lines and boxes on site were examined and approved by a licensed inspector from the Commonwealth Inspection Service.

August 17, 1988 - Wednesday
Area inside main gate, hereafter referred to as north gate, was prepared as the decon area. ERCS moved Drake office trailer located there to make room for the decon pad, decon pools and the truck scale. Frame for the truck scale was laid, decon pools erected.

TAT measured waste lagoons and determined each lagoon contained approximately 100,000 gallons of liquid waste, confirming ROD data which was rechecked since the lagoons showed signs of excessive evaporation. OSC Powell would use this information and disposal analysis to investigate disposal options.

August 18, 1988 - Thursday
Building #5 was demolished and debris was staged for removal. ERCS continued work on decon area by pouring concrete for the decon pad and preparing the drum staging area.

While staging debris, ERCS discovered four compressed gas cylinders apparently containing hydrogen fluoride (HF). Local emergency center was notified.

August 19, 1988 - Friday
TAT and ERCS chemists presented sampling plan to OSC for bulking and disposal options. Decision was made to sample all tanks/drums for compatibility and make bulking decision based on waste stream size and hazard class.

TAT examined suspected HF cylinders and identified them as lecture bottles produced by Matheson who will

be contacted regarding the removal of these cylinders on the next business day.
Command post was notified of a visit by Congressman Klinger (R-PA) scheduled for 4:00 p.m. 8/25/88.

Two additional ERCS recovery technicians were mobilized to ensure safety during drum staging operations.

Two PA DER representatives were on scene to photodocument site conditions.

August 20, 1988 - Saturday
Drum overpacking and staging operations continued until overpack supplies were exhausted. Tank sampling crews completed all exterior tanks; samples were sent for compatibility analysis.

Buildings #1 and #2 were reexamined to determine feasibility of tank sampling/removal. OSC Powell directed site personnel to maintain safe distances from these buildings due to their dilapidated condition.

August 21, 1988 - Sunday
Electrical personnel were the only contractors on site; all electrical connections were finished and passed inspection.

August 22, 1988 - Monday
Top cover of landfill removed and staged for disposal; excavation approached bottom cover. Drainage was established in landfill because heavy rains were expected.

Tanks reachable from buildings #1 and #2 exteriors were sampled and sent for compatibility analysis.

City water officials on scene to locate water mains on site. Valves were raised, marked and staked for future reference.

OSC contacted cylinder PRP Matheson to obtain additional information on the state of the HF cylinders. PRP experts were not available, but scheduled date for return call.

OSC Powell informed by Lock Haven Mayor that Senator Heinz (R-PA) would also be in the vicinity on 8/25/88, but was not planning to visit the site at that time.

August 23, 1988 - Tuesday
Drum overpacking resumed and was completed in building #3 area. Landfill area excavation continued and soil staging continued to expose the bottom liner. Installation of east access control road gate began.

Final contact was made with Matheson Gas Products to facilitate pickup of HF cylinders.

August 24, 1988 - Wednesday
Staging for disposal of debris and empty tanks continued. Sampling of the overpacked drums was initiated. All samples were sent for compatibility analysis.

Building #2 shifted dislodging a 1/2-inch line that fumed for 30 minutes. An entry was made, but no readings were detected using monitoring equipment or Ph paper. The line was located in the same sector as the Oleum (sulfuric acid) tank and the white fumes resembled those created when concentrated acid reacts with moist air. No additional actions with the line expected.

Groundwater monitoring well #8 was temporarily decommissioned. The well head was cut flush to road level and welded shut. It was surveyed and covered with road gravel to protect it from heavy truck traffic during debris removal operations. The well would be restored at the end of the project.

August 25, 1988 - Thursday

Congressman Clinger was on scene to view site conditions.

Metal debris was cut into manageable sections for transportation. Trial runs with the loading crew and scale were performed. First three loads of debris were transported off site.

Monitoring of fuming 1/2-inch line continued; no additional leakage was detected.

August 26, 1988 - Friday
Empty tanks and debris shredded for shipment to Adams Center Landfill. Five loads of debris were transported; total 8 loads/104 tons. Difficulties experienced during loading of trucks due to nature of material (i.e., concrete slabs, twisted I-beams). However, tonnage per truck increased per load. Staged drums were sampled; all samples sent for compatibility analysis.

August 27, 1988 - Saturday
Ten loads of debris departed for adams center landfill; total 18 loads/286 tons. Empty tanks and debris shredded for shipment to Adams. Landfill excavation resumed; liner being staged with site debris for disposal. Staged drums sampled; all samples sent for compatibility analysis. Waste profile report/analytical of lagoons received; results showed low levels of contamination.

August 28, 1988 - Sunday
Sampling of staged drums continued; 29 sampled today for a total of 189. Landfill excavation continued. Liner was staged and disposed of along with site debris. Demolition of building #3 was completed.

August 29, 1988 - Monday
Eighteen loads of debris departed for Adams Center Landfill; 36 loads to date totaling 600 tons.

OSC Powell spoke with Rich Ardner, Director of Public Works. Mr. Ardner arranged for the superintendent of the local POTW to be on site to discuss possible treatment of lagoon liquid at municipal sewer system.

August 30, 1988 - Tuesday
Twelve loads of debris departed for Adams; 48 loads to date totaling 806 tons. Sampling of staged drums completed; compatibility analysis would be performed by Wastex Industries, Inc. OSC Powell met with superintendent of local POTW and provided him with analytical results and samples for his review in considering possibility of treating lagoon liquids and sludge.

August 31, 1988 - Wednesday
OSC Powell was advised by Josie Matsinger at EPA Philadelphia office that all funds approved for this site had been obligated.

Kim Wilkinson of the Lock Haven Express newspaper contacted OSC Powell to arrange a press briefing with photos. Briefing was tentatively scheduled for the afternoon of 9/6/88.

Fourteen loads departed for Adams; 62 loads to date totaling 989 tons. Building #3 foundation demolition completed; debris staged for removal. Demolition of Drake office commenced. Bulking scheme was finalized. OSC Powell directed ERCS to begin test bulking 9/1/99. The steel I-beams were segregated from other debris and staged for cutting and shearing.

September 1, 1988 - Thursday
ERCS continued to stage demolition debris for disposal and dismantled the truck that was on site. Contaminated landfill excavation 75% completed.

OSC Powell inspected buildings #1 and #2 for structural integrity and assessed condition of interior tanks.

September 2, 1988 - Friday
Work crew demobilized for the Labor Day holiday weekend.

September 6, 1988 - Tuesday
EPA, TAT and ERCS remobilized to continue demolition and bulking activities.

September 7, 1988 - Wednesday
OSC Powell met with the Mayor, members of City Council and the Director of Public Works to discuss site operations and progress to date.

A public meeting was held at Lock Haven University for OSC Powell and RPM Schrock to discuss the status of Phase II operations and the preferred alternative for Phase III of the ROD.

Lock Haven treatment plant official advised OSC Powell that the plant would not be able to accept the lagoon contents for disposal due to the presence of heavy metals in the sludge.

Landfill excavation for removal of the contaminated synthetic liner completed; liner was staged for removal.

September 8, 1988 - Thursday
Contents of all tanks in building #4 were removed utilizing a vacuum truck and materials were transferred into bulking chambers. Building #4 was then demolished with heavy equipment. Excavated landfill area was graded to ensure proper drainage and prevent pooling of water. Waste profile reports characterizing lagoon liquids and sludge were sent to three facilities for disposal bids.

Four PA DER representatives were on scene to observe and photograph site activities and progress to date. OSC Powell escorted them on a site tour.

September 9, 1988 - Friday
Fifteen loads of debris removed. A database for tracking manifests was set up by OSC Powell and TAT.

September 10, 1988 - Saturday
Five more loads of debris (94 tons) removed for disposal. Cyanide liquids drawn from tanks were bulked into chambers and compatibility analysis for all staged drums was completed.

September 11, 1988 - Monday
Debris was staged for scheduled removal the next business day. This preparation ensured a maximum number of truckloads of debris would be removed each day.

Tank bulking operations continued. Chamber containing cyanide liquids was secured with visqueen to prevent any release of hazardous vapors.

September 12, 1988 - Tuesday
Ten more loads of debris removed for disposal; total to date 92 loads/1606 tons. Samples of tank liquids were taken from bulking chambers for waste disposal analysis. Tank trucks arrived on site to transport bulked liquids. One truck was refused by the RM due to its poor condition.

September 14, 1988 - Wednesday
Continued removal debris was the major task; 13 more loads totaling 105 loads/1857 tons to date.

September 15, 1988 - Thursday
Removal of demolished building debris completed; total of 111 loads/1981 tons of debris removed and transported to Adams Center Landfill in Ft. Wayne, Indiana.

Shearing of empty tanks commenced. Product recovered from building #3 was covered and staged with overpacked drums. Plans were made to contact manufacturers for possible recovery.

September 16, 1988 - Friday
Outside tanks #21 and #22 were sampled for compatibility analysis. Empty tanks were removed to staging areas for cutting and shearing. Associated debris was staged for disposal. Sumps containing oxidizing liquids were pumped out for bulking and were then backfilled.

Chief of PA DER Remedial Response Section (Walter Graham) recommended to OSC Powell that the scope of this project be expanded to include all tasks under Phase II of the ROD.

September 17, 1988 - Saturday
Cutting and shearing of empty tanks continued and resultant pieces were staged for removal. Lower explosive limit (LEL) readings were taken and carbon dioxide was utilized to purge tanks as additional safety measures.

September 19, 1988 - Monday
TAT completed investigation and procurement of material safety data sheets (MSDS) for all known chemicals on site.

September 20, 1988 - Tuesday
Staging of demolition debris for disposal and bulking of solid and liquid waste streams continued.

September 21, 1988 - Wednesday
Oxidizing solids and sludges were bulked, then solidified for disposal. Liquid waste streams were bulked in compatibility chambers and solid waste streams were bulked in rolloffs.

Compressed gas cylinders found in buildings #1 and #2 were staged and inspected for type and manufacturer. The HF cylinders were overpacked separately in lime.

September 22, 1988 - Thursday
Hazleton Oil Salvage Company on scene to pump oil from tanks #4 and #6. Approximately 2000 gallons were salvaged. Fuel oil tanks were subsequently staged and sheared for disposal. Waste streams from drums and bulking chambers were sampled for disposal analysis.

September 23, 1988 - Friday
Cutting and shearing of empty tanks continued. All halogenated liquids were pumped from tanks, transferred into drums and staged for disposal.

OSC Powell and TAT member Lieberman accompanied PA DER representatives to examine leachate stream outfall addressed during Phase I ROD operations for potential Phase II action. OSC informed PA DER that he would discuss possible remediation of leachate outfall with RPM Schrock.

Matheson representatives were unable to remove HF cylinders as scheduled; would be rescheduled.

September 24, 1988 - Saturday
Demolition debris and cut tanks were staged for disposal. All oxidizing liquids transferred from bulking chamber into a tanker until disposal approvals were received.

September 26, 1988 - Monday
TAT and ERCS utilized manlift to samples tanks outside buildings #1 and #2. An additional compressed gas cylinder was observed; would be secured and staged. Bulking chambers were decontaminated in

preparation for demobilization.

September 27, 1988 - Tuesday
Demolition debris and cut tanks continued to be staged for disposal. OSC Powell departed to the Regional office to attend required monthly Program and Safety Meetings.

September 28, 1988 - Wednesday
Lock Haven Director of Public Works Ardner on scene to deliver copies of letters requested by OSC Powell. Mr. Ardner expressed his desire to combine EPA planned action to repair Myrtle Street with current city contracts.

Central Penn Gas Company on scene to investigate and locate the gas main to shut it off and seal it.

September 29, 1988 - Thursday
During staging of debris, a pipe with black residue reacted creating a short white cloud (approximately 15 to 20 minutes). The cloud was the result of insulation catching fire. TAT and ERCS immediately responded in level "B" to monitor the situation with Draeger tubes. No significant readings were recorded. The pipe and smoking insulation were covered with dirt to smother the reaction. ERCS continued to stage demolition debris and cut tanks.

September 30, 1988 - Friday
Tank cutting operations continued.

Central Penn Gas Company representative (Tim Conahan) on scene with work crew to sever and seal gas main. TAT member Strange and Central Penn representative Conahan made an entry on north end to shut off and seal the gas main.

October 3, 1988 - Monday
ERCS continued tank cutting, metal staging and bulking tank solids. Process lines in building #1 were assessed and liquids were drained into drums. Palleted product was removed from building #1, drummed and staged. Freon cylinders removed from building #1 and staged.

OSC Powell updated Lock Haven Director of City Works Ardner of site activities.

October 4, 1988 - Tuesday
TAT assessed building #1 interior to check for remaining cylinders, mercury thermometers or any materials that would present a danger threat during building demolition; none were found. Demolition of building #1 began; the east wall and process lines were removed and staged for disposal. Tanks adjacent to buildings #1 and #2 were removed and cut. Drums appearing to contain product (oil) were removed from building #1 and sampled. Samples were sent for disposal analysis.

October 5, 1988 - Wednesday
Demolition of building #1 and tank cutting operations continued. Tanks and process lines were cut when removed from the building. TAT and ERCS inspected two drums inside building #1 containing lab containers. Materials were sorted by compatibility in the building.

Bruce Bryerton of the Lock Haven Fire Department was on site to discuss plans for fire department to be on scene during removal of process lines from building #2 with OSC Powell. The fire department was called upon as a safety precaution.

October 6, 1988 - Thursday
TAT and ERCS removed lab packed materials from building #1 and packed and moved them to a staging area where they were remotely opened and crushed. Building #1 demolition was completed. Cutting operations continued on tanks and lines as they were removed from the building.

October 7, 1988 - Friday
Tank cutting operations proceeded and tanks from building #1 were cut and staged for disposal. Debris from building #1 was segregated and staged. Building #2 acid tanks were pumped by vacuum truck and stored in a tanker until disposal arrangements could be finalized. Approval for lagoon liquid disposal received from CyanoKEM.

October 8, 1988 - Saturday
Lock Haven Fire Department on scene to assist with safety precautions during cutting and removal of process lines above building #2. Two water sprays were set up including a remote deluge system near the decon pad and a pumper operated by fire department personnel outside the hot zone. One process line released a small vapor cloud during line shearing and was immediately suppressed by water spray support system. Remote fogging of the leak continued until the release stopped.

Revised analytical results for drum compatibility were reviewed by TAT and ERCS chemists.

October 9, 1988 - Sunday
Removal of lagoon liquids commenced. Two truckloads totaling approximately 10,000 gallons were transported to CyanoKEM for disposal. Arrangements were made to continue lagoon liquids removal.

TAT prepared proposed waste streams for drummed solids. Tank cutting operations continued.

October 10, 1988 - Monday
Removal of lagoon liquids continued. Three more truckloads (approximately 15,000 gallons) departed; total 25,000 gallons to date. Bulk solids samples were sent for disposal analysis. Heavy equipment arrived on site for removal of process lines above building #2.

OSC Powell and TAT examined compressed gas cylinders for identifying markers.

October 11, 1988 - Tuesday
A 75-ton crane selectively removed steel support structures, process lines and tanks from second story of building #2. Minor vapor clouds released periodically were immediately deluged by water spray. Approximately 50% of the second floor structures were removed.

October 12, 1988 - Wednesday
OSC Powell briefed Lock Haven Director of Public Works Ardner on planned demolition activities. Crane continued selective removal of steel support structures, process lines and tanks from second story of building #2; second floor was 100% demolished. Demolition of first floor began.

October 13, 1988 - Thursday
Tank cutting operations proceeded as tanks from buildings #1 and #2 were cut and staged for removal. Debris from building #2 was segregated and staged.

October 14, 1988 - Friday
Debris staging activities continued. Debris from building #2 continued to be segregated and staged for removal. Tank cutting activities continued.

October 17, 1988 - Monday
Segregation and staging of debris from building #2 continued. Eleven loads of solid debris (approximately 202 tons) transported off site for a total of 121 loads (approximately 2211 tons) transported to Adams Center Landfill, Ft. Wayne, Indiana to date.

October 18, 1988 - Tuesday
Segregation and staging of debris from building #2 continued. Fourteen loads of solid debris (approximately 283 tons) transported off site for a total of 135 loads (approximately 2494 tons) transported to Adams

Center Landfill to date.

October 19, 1988 - Wednesday
Specialty gas consultant, Carmelo Vasi, was on site at 0800 hours to assess the unidentified cylinders. A follow-up report was expected within a week. Matheson Cylinder representative was on site to remove three lecture bottles and one #3 cylinder.
Segregation and staging of debris from building #2 continued. Nine loads of solid debris (approximately 181 tons) transported off site for a total of 144 loads (approximately 2675 tons) transported to Adams Center Landfill to date. One tanker (approximately 5200 gallons) of contaminated lagoon liquid shipped to CyanoKEM, Inc., Detroit, Michigan, for a total of approximately 31,000 gallons shipped off site to date.

October 20, 1988 - Thursday
Segregation and staging of building #3 debris continued. Eleven loads of solid debris (approximately 215 tons) transported off site. Two tankers (approximately 10,600 gallons) of contaminated lagoon liquid shipped to CyanoKEM, while four tankers (approximately 22,000 gallons) of the same liquid were shipped to the CECOS treatment facility in Bristol, Connecticut. WPRs for disposal approval of bulked oxidizing liquids were sent out this date.

Ron Hodes Industries assessed the remaining scrap metals for possible future purchase. EPA personnel (Zia, Kelly and Buntin) were on site with Mr. Primo Marchesi, Plant Manager of the nearby American Color and Chemical Corporation. The group met with the OSC to discuss site operations at both locations.

October 21, 1988 - Friday
Five loads of solid debris (approximately 94 tons) transported. Difficulty was encountered in obtaining trucks for transport. Four tankers (approximately 21,000 gallons) of contaminated lagoon liquid shipped to CECOS. ERCS continued to use cutting torches to dismantle the larger metal sections of debris and to cut up the remaining tanks on site. Monitoring for flammable and/or explosive atmospheres would continue during all torch-related operations.

October 22, 1988 - Saturday
Segregation and staging of debris continued. Six loads (approximately 108 tons) transported to Adams Center Landfill. One tanker (5500 gallons) of contaminated lagoon liquid shipped to CyanoKEM. ERCS continued using cutting torches and partner saws to dismantle the larger metal sections of debris and to cut up remaining tanks on site.

October 23, 1988 - Sunday
ERCS continued using cutting torches and partner saws to dismantle the larger metal sections of debris and to cut up remaining tanks on site. ERCS demobilized at 1530 hours due to unavailability of trucks to load debris and waste.

October 24, 1988 - Monday
Segregation and staging of debris continued. ERCS continued cutting solid debris. Two loads of solid debris (approximately 44 tons) transported to Adams Center Landfill for a total of 165 loads (approximately 3136 tons) to date. Four tankers (approximately 20,600 gallons) of contaminated lagoon/sludge was sent to CECOS for a total of approximately 110,958 gallons shipped off site to date.

OSC Vince Zenone was on site to provide advice and guidance on future SPCC inspections.

October 25, 1988 - Tuesday
Segregation, staging and cutting activities continued. Four loads (approximately 123 tons) of solid debris transported to Adams Center Landfill. Two tankers (approximately 10,000 gallons) of contaminated lagoon/sludge shipped to CECOS.

Gas consultant Vasi submitted a written report for cylinder disposal.

October 26, 1988 - Wednesday
Segregation, staging and cutting activities continued. OSC Powell expressed concern that the unavailability of trucks to transport solid debris off site would hamper and prolong removal operations. Two tankers (approximately 10,000 gallons) of contaminated liquid waste shipped off site.

The grappler being used to handle site debris was rendered inoperable, but would be repaired (billable) due to extraordinary site conditions. Operating the grappler with the hydraulics at a very high setting was necessary because of the weight of debris pieces. This caused damage/warpage to the extent that the grappler jaws no longer would open or close. A new grappler would be mobilized while the old one was demobilized for repair at the ERCS shop.

October 27, 1988 - Thursday
Segregation, staging and cutting activities continued. Three tankers (approximately 15,200 gallons) of contaminated lagoon liquid/sludge was shipped for a total of approximately 156,358 gallons shipped off site to date. Three loads (approximately 56 tons) of solid debris transported for a total of 171 loads (approximately 3192 tons) transported to date.

October 28, 1988 - Friday
Segregation, staging and cutting activities continued. Two tankers (approximately 9500 gallons) of contaminated lagoon liquid/sludge shipped off site. Four loads (approximately 82 tons) of solid debris transported off site.

October 29, 1988 - Saturday
One truck was expected for transporting debris for disposal; however, it broke down en route to the site. As a result, no solid debris was removed this date. Segregation, staging and cutting activities continued.

October 31, 1988 - Monday
Four loads (approximately 78 tons) of solid debris transported off site.

November 1, 1988 - Tuesday
Seven loads (approximately 133 tons) of solid debris transported off site, completing transport for disposal of all RCRA-classified F002 and F005 wastes, for a total of 193 loads (approximately 3570 tons) being sent to Adams Center Landfill, Ft. Wayne, Indiana for disposal.

November 2, 1988 - Wednesday
ERCS continued metal cutting and debris staging operations. Disposal arrangements were finalized with CyanoKEM in Detroit, Michigan for two tank loads of base neutral liquids.

OSC English arrived on site to provide assistance to OSC Powell.

November 3, 1988 - Thursday
Two tank loads of base neutral liquids departed for CyanoKEM for final disposal. Arrangements for disposal of overpacked drums and cylinders were finalized.

November 4, 1988 - Friday
OSC Powell departed the site to serve as duty officer at RRC.

Tank and metal cutting and debris staging operations continued. Two additional torches were purchased to expedite metal cutting operations.

Eugene Mills from the Union of Environmental Engineers, Clearfield County, was on scene to inquire about

the Phase III work plan. The ERCS RM informed him that EPA Remedial Section would be coordinating those actions.

November 5, 1988 - Saturday
Heavy rains hampered tank and metal cutting and debris staging operations. TAT and ERCS sampled solid sulfides, cyanide drums and oxidizing liquids. Although these materials were sampled previously, various disposal facilities requested additional samples. Disposal arrangements for the acid tanker were finalized.

November 7, 1988 - Monday
Acid tanker was transported off site to CyanoKEM, Detroit, Michigan for treatment/disposal. Tank and metal cutting operations continued. Grading of the west lagoon and surrounding area began.

November 8, 1988 - Tuesday
TAT and ERCS inspected an overpacked lab bottle that contained a crystallized, unidentified substance. On the basis of this inspection, the OSC categorized the material as "Poison A" for disposal purposes.

Arrangements were made with MG Industries, Liquid Carbonic and Air Products for cylinder disposal. MG and Liquid Carbonic agreed to remove their cylinders, while Air Products agreed to dispose of their cylinder if it were transported to them.

November 9, 1988 - Wednesday
Cylinder #2 (nitrogen) was removed by MG. Cylinder #3 (nitrogen) was removed by Floruss Welding to Liquid Carbonic.

Tank and metal cutting operations continued. Grading of west lagoon continued.

OPA Ray Germann was on site to obtain an update on site activities and view progress.

November 10, 1988 - Thursday
Cylinder #6 was examined and was found to be empty and in good condition. Metal and tank cutting operations continued. Grading of west lagoon area continued.

November 11, 1988 - Friday
Tank and metal cutting and west lagoon area grading activities continued. Arrangements for disposal of remaining drums were finalized.

OSC Powell returned to the site and relieved OSC English.

November 12, 1988 - Saturday
Tank and metal cutting and grading of west lagoon area continued.

November 14, 1988 - Monday
Due to a delay in the delivery of breathing air, tank and metal cutting operations were discontinued at 1500 hours.

November 15, 1988 - Tuesday
Tank and metal cutting operations continued. Tank car of oxidizing liquids was transported to CECOS, Bristol, Connecticut, via Nappi Trucking. Three box trailers arrived for transporting drums to disposal and drums were prepared these operations. Demolition of process building foundation began.

November 16, 1988 - Wednesday
Tank and metal cutting operations continued. Demolition of process building foundation continued. Two additional box trailers arrived for drum transport; drums were prepared.

November 17, 1988 - Thursday
Staging of metal and debris continued, as did demolition of process building foundation. Three box trailers were loaded with approximately 180 drums for transport to disposal.

November 18, 1988 - Friday
Staging of metal and debris continued. Final two box trailers were loaded with remaining drums for a total of 270 drums. During inspection of a box trailer, a salvage drum containing two lab packs labeled sodium azide and sodium nitrate were discovered that had been left by Nappi Trucking from another job. OSC Powell contacted Nappi Trucking and advised them of the error, who agreed to retrieve the lab packs. OSC Powell also advised New Jersey Department of the Environment, through whom the lab packs were manifested, and assured them that the situation would be handled properly.

A shipping container that met DOT regulations was obtained for the cylinder containing sodium dioxide. Air Products was contacted to confirm their acceptance when it was shipped to them.

November 19, 1988 - Saturday
Tank and metal cutting operations, staging of debris and metal, and demolition of the process building foundation continued.

November 20, 1988 - Sunday
Staging of debris and metal and demolition of the process building foundation continued. Two box trailers containing hazardous waste solid N.O.S. were manifested and removed via Freehold Cartage for incineration at the ThermalKEM facility, Rock Hill, South Carolina. Disposal arrangements continued for the remaining waste streams.

November 21, 1988 - Monday
Tank and metal cutting, staging of debris and metal, and demolition of the process building foundation continued. Three additional box trailers were sent to ThermalKEM via Nappi Trucking. Nappa also retrieved their salvage drum containing the two lab packs that was erroneously left in their truck. Verbal approval was received from Adams Center Landfill for acceptance of steel and debris from the site.

The sodium dioxide cylinder was shipped to Air Products via Federal Express for disposal.

November 22, 1988 - Tuesday
Tank and metal cutting, staging of debris and metal, and demolition of the process building continued. OSC Powell, TAT and ERCS RM walked through the site to ensure that the site was secure while the site was demobilized for the Thanksgiving holiday.

December 1, 1988 - Thursday
Ten loads (approximately 200 tons) of solid debris (hazardous waste solid N.O.S.) transported to Adams Center Landfill, Ft. Wayne, Indiana. Installation of silt fence around the site perimeter began.

December 2, 1988 - Friday
Ten loads (approximately 197 tons) of solid debris transported to Adams Center Landfill.

December 3, 1988 - Saturday
Eight loads (approximately 160 tons) of solid debris transported to Adams Center Landfill.

December 4, 1988 - Sunday
Ten loads (approximately 200 tons) of solid debris transported to Adams Center Landfill; two tankers (approximately 10,000 gallons) of lagoon sludge shipped to CyanoKEM, Detroit Michigan.

December 5, 1988, Monday

Twelve loads (approximately 220 tons) of solid debris transported to Adams Center Landfill; two tankers (approximately 10,000 gallons) of lagoon sludge shipped to CyanoKEM.

December 6, 1988 - Tuesday
Seventeen loads (approximately 280 tons) solid debris transported to Adams Center Landfill; three tankers (approximately 15,000 gallons) of lagoon sludge shipped to CyanoKEM.

December 7, 1988 - Wednesday
Thirteen loads (approximately 262 tons) solid debris transported to Adams Center Landfill. Final two tankers of lagoon sludge (approximately 10,000 gallons) shipped to CyanoKEM, for a total of approximately 45,000 gallons (approximate total of 220,000 gallons lagoon liquid and sludge).

December 8, 1988 - Thursday
Sixteen loads (approximately 315 tons) solid debris transported to Adams Center Landfill. Installation of the silt fence, designed to control off-site migration of contamination until the Remedial Phase began, was completed. The liner from the west lagoon was removed, cut and staged for disposal.

December 9, 1988 - Friday
Removal of lagoon liner was completed.

December 10, 1988 - Saturday
OSC Powell was informed by ERCS RM that the lagoon sludge had frozen upon arrival at CyanoKEM. OSC instructed RM to send personnel to the disposal facility to transfer the sludge from the transport truck.

December 11, 1988 - Sunday
Off-site transport of non-hazardous site debris to Adams Center Landfill began.

December 12, 1988 - Monday
Sub-zero temperatures froze ground and hampered grading operations. Decontamination of heavy equipment was postponed due to the treat of cold exposure to personnel.

OSC Powell submitted a DOT exemption to the Bureau of Motor Carrier Safety regarding the transport of a 13-gallon acid lab pack suspected to be crystallized oleum acid. Arrangements were finalized for the lab pack to be accepted at Grace Labs, Greer, South Carolina, for disposal.

December 13, 1988 - Tuesday
Decontamination of heavy equipment began in preparation for demobilization.

OSC Powell and ERCS RM and foreman viewed the culvert addressed in Phase I of the project that leached into Bald Eagle Creek. OSC Powell instructed ERCS to build a protective grate over the opening.

December 14, 1988 - Wednesday
TAT compiled a list of wastes removed during Phase II and the disposal facilities to which they were transferred. This summary was submitted by OSC Powell to OPA and the Lock Haven Express newspaper.

The rolloff containing approximately 20 tons of solid sulfides was transported off site by McCutcheon Enterprises to Envirosafe of Ohio.

December 15, 1988 - Thursday
The suspected oleum acid lab pack and two remaining ammonia cylinders were transported off site by ETSC to Grace Labs.

Jim Runkle of the Lock Haven Express was on scene to interview OSC Powell. Three PA DER representatives were on scene to view project completion.

December 16, 1988 - Friday

OSC Powell was notified by ThermalKEM that the incinerator experienced a pressure surge due to an adverse reaction that released the pressure safety doors and caused a minor fuel leak. A follow-up investigation by ThermalKEM indicated that the material which caused the adverse reaction originated from a drum in a waste stream from the Drake Chemical Site.

Approximately 20 tons of base neutral solids were transported by Jack Gray Transportation, Inc. to Wayne Disposal, Belleville, Michigan for disposal. These wastes had been stored in rolloffs on site, but had to be transferred as the rolloffs were not permitted in the state of Michigan.

December 17, 1988 - Saturday

TAT visited the site to confirm that all arrangements for demobilization were finalized. Remaining ERCS personnel secured the site and the remaining office trailers were demobilized. The 24-hour security guard was also demobilized. All on-site activities were completed this date.

January 6, 1989 - Friday

A meeting was held at EPA Region III to discuss the ThermalKEM incident. Representatives from EPA, TAT, ThermalKEM, and OHM were in attendance. A conclusion was reached that fragments of nitrocellulose were contained in one of the drums that caused the reaction. All parties agreed that more comprehensive sampling protocols would be developed in the future.

June 28, 1990

ERCS subcontractor, James P. Webb Road Construction, repaired the entrance road to the site and restored vegetation.

SECTION VII

PROBLEMS ENCOUNTERED AND RECOMMENDATIONS

VII. PROBLEMS ENCOUNTERED AND RECOMMENDATIONS

A. Removal of Debris

Five buildings were originally located on the Drake Chemical Site property. The demolition of these buildings created a large amount of debris that had to be disposed of under RCRA regulations. The availability of trucks to remove this type of waste from the site was a setback in the progression of operations. Also, many of the trucks used to remove the debris had beds made of aluminum. The dumping of heavy debris, such as building concrete, sometimes caused damage to the beds.

B. Effects of Weather Conditions

Bulking drum contents on site was selected as the most efficient and cost-effective method of addressing these materials. The contents of the drums were transferred into bulking chambers which were stored on site awaiting disposal. For those waste streams more difficult to dispose of, particularly sulfides, this wait was longer than anticipated. Hence, in some cases, the contents of the rolloffs froze during cold periods, making the wastes more difficult to transfer.

For the most part, the project operated smoothly without any major complications. Many factors were in favor of a successful project completion. First, the site was situated in a relatively isolated area. This facilitated access for large vehicles. Second, there were no shock-sensitive or other materials on site that could not be handled in a safe manner. Last, through preplanning with local emergency officials, contingencies were made and practiced, and by communicating information regularly, operations ran smoothly. The OSC recommends that the practice of sharing information with local officials by continued through any removal project. Such coorination will help to facilitate operations as was the case during this removal action.

C. ThermalKEM Drum Reaction Incident

On December 8, 1988, the incinerator at ThermalKEM experienced a large surge in pressure that caused the pressure relief safety door to open. In addition, the sudden pressure release damaged a pressure gauge and regulator on the fuel line, resulting in a fuel oil leak. Less than 20 gallons were released while the line was being repaired. One minor injury occurred when an employee cut his leg while exiting the building.

A follow-up inspection conducted by ThermalKEM indicated that one of the wastes fed into the incinerator at the time of the reaction was from the Drake Chemical Site. A portion of a waste stream of nine drums that were listed as F005 wastes was fed into the incinerator at the time of the reaction. OSC Powell was notified of the incident on December 16, 1990.

C. ThermalKEM Drum Reaction Incident (continued)

After a thorough investigation, a meeting was held between OSC Powell, TAT, representatives of ThermalKEM, and O.H. Materials. An investigation by ThermalKEM revealed that one of the drums in the waste stream contained small chunks of nitrocellulose, an oxidizer. This material caused an oxidizing reaction with the other materials, thereby causing the pressure release.

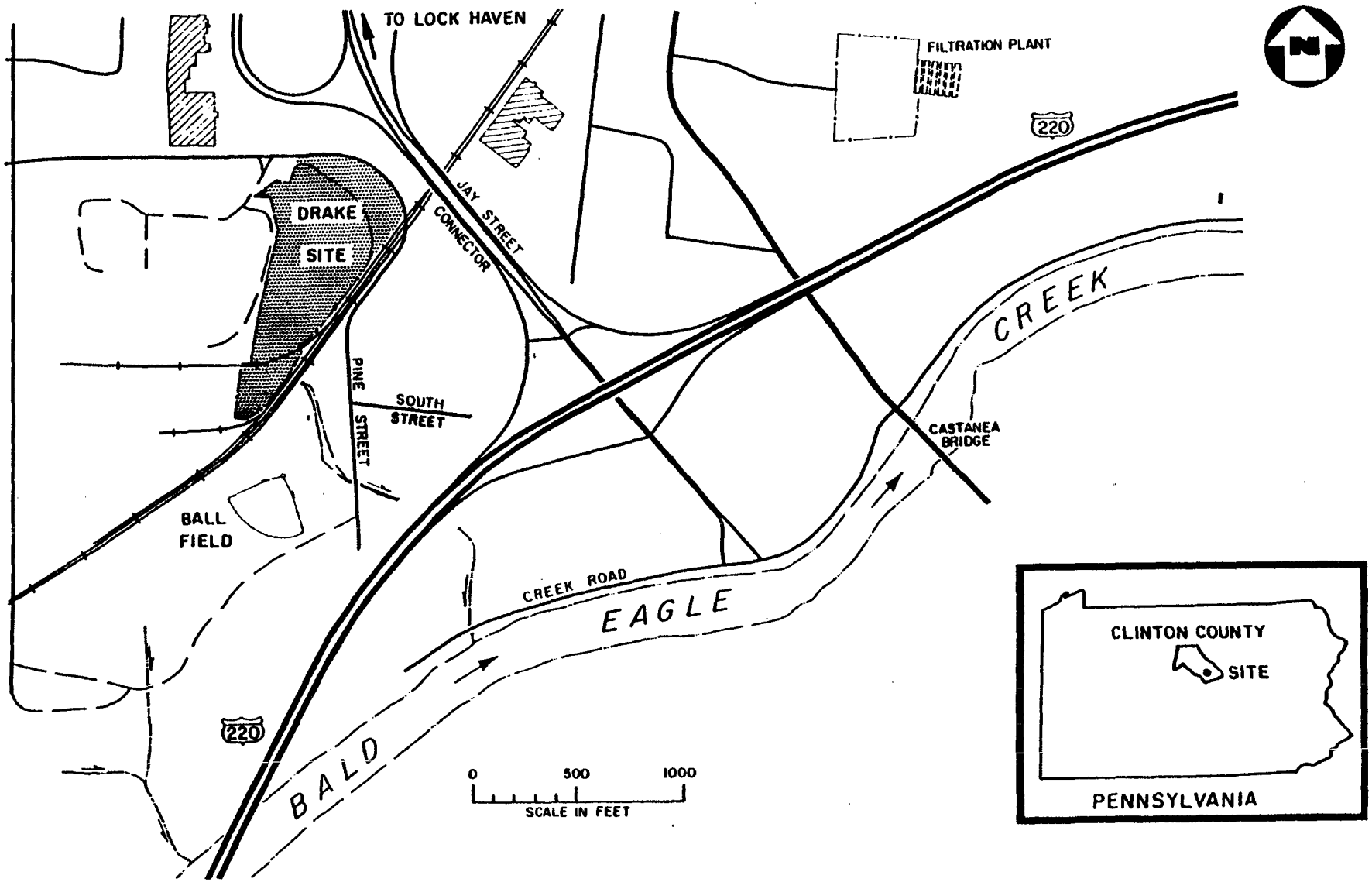
All attendees of the meeting agreed that a representative sample of the drum was submitted. However, as is often the case with solids, thorough mixing is difficult, and apparently, the nitrocellulose fragments were not collected with the sample. It was agreed upon that more thorough sampling protocols should be developed to prevent a recurrence of this type of incident.

SECTION VIII

APPENDICES

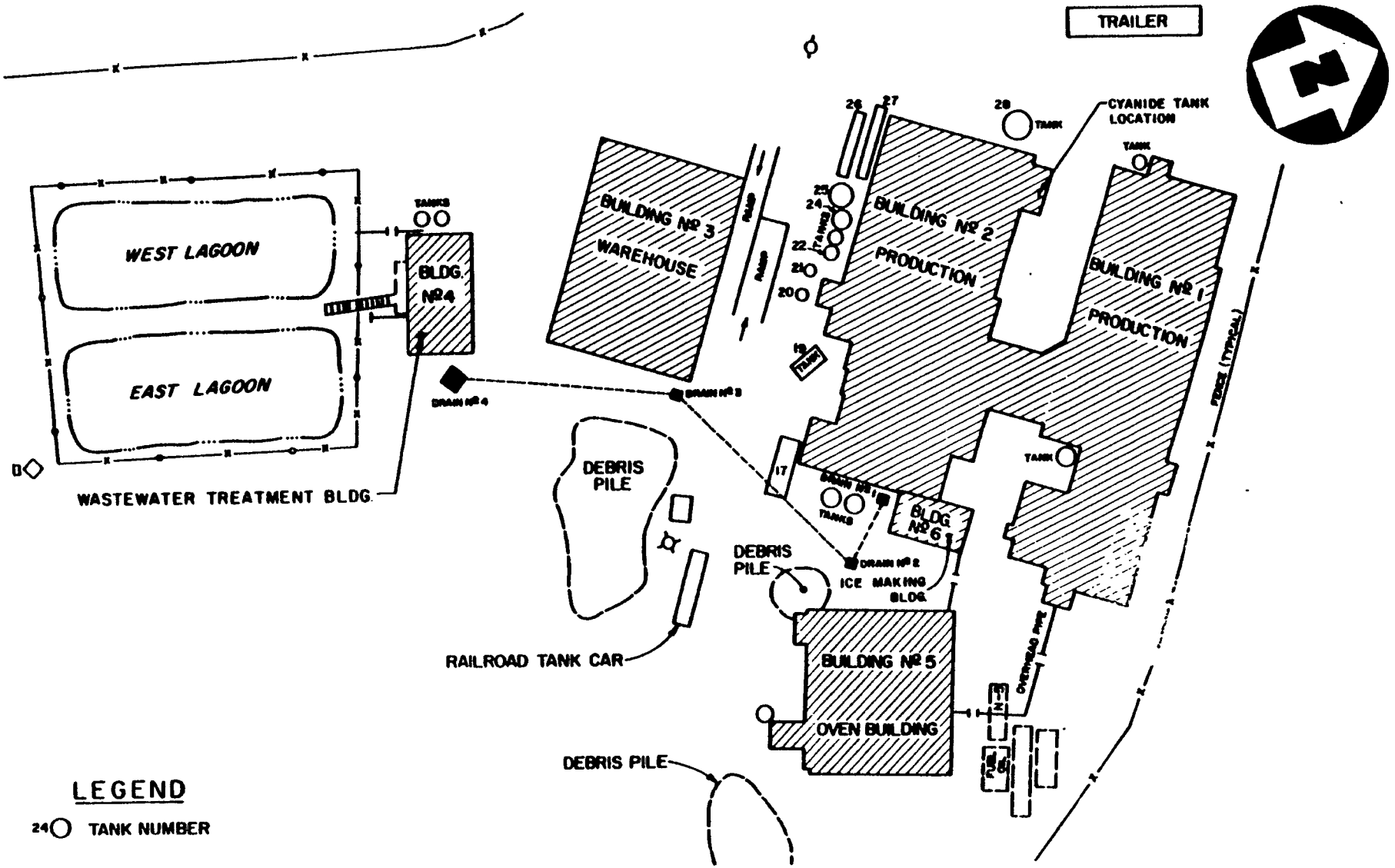
APPENDIX A

LOCATION MAP/SITE SKETCHES



AR400135

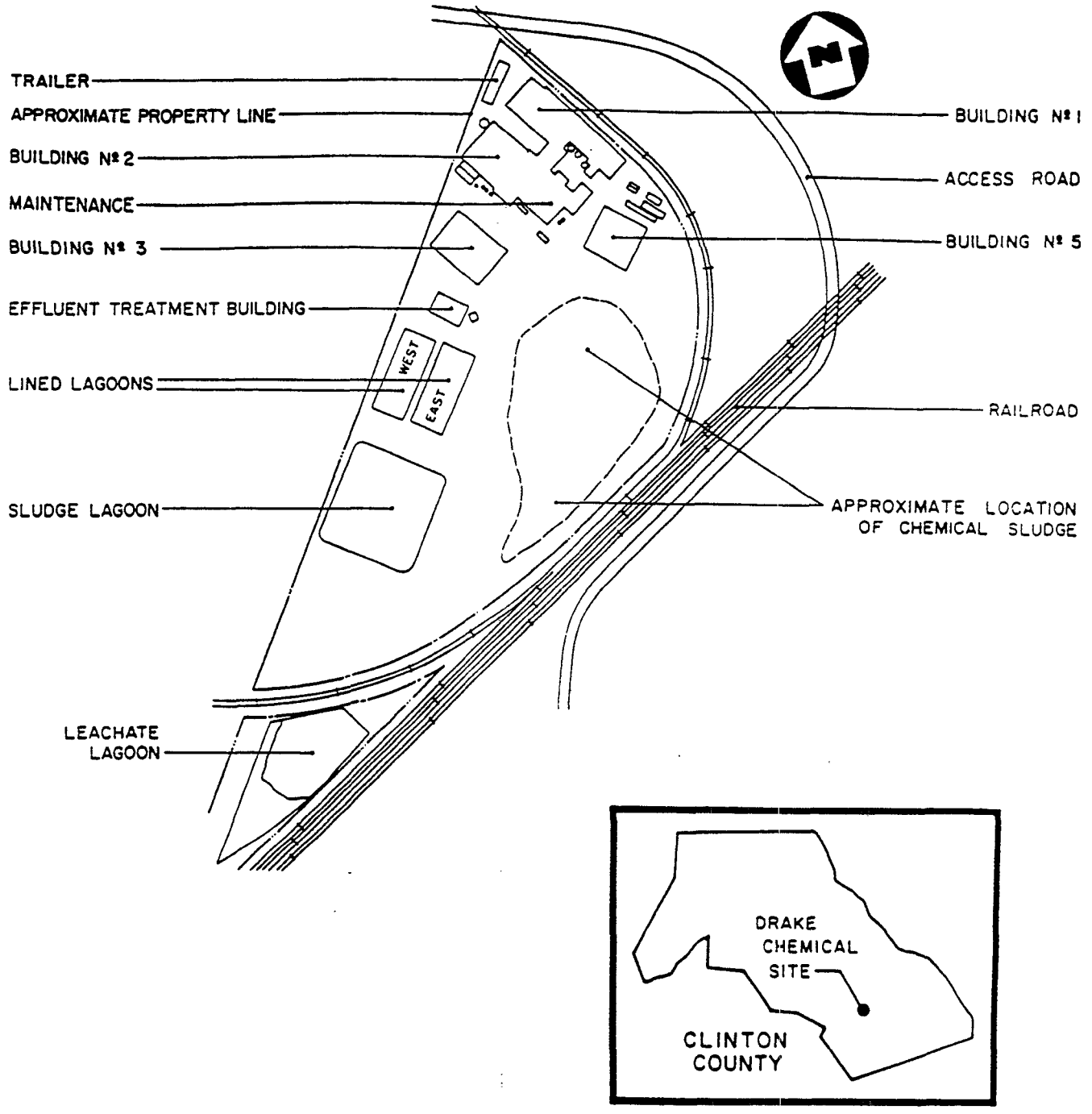
SITE LOCATION MAP
DRAKE CHEMICAL SITE
LOCK HAVEN, PENNSYLVANIA



AR400136

BUILDING LOCATIONS
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

SCALE: 1" = 60'



SITE PLAN
DRAKE CHEMICAL SITE
LOCK HAVEN, PENNSYLVANIA
NOT TO SCALE

APPENDIX B

FUNDING DOCUMENTATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 4 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: $2M Exemption Request for the Drake Chemical Site, Lock Haven, PA--ADDENDUM

FROM: Timothy Fields, Jr., Director
Emergency Response Division

TO: J. Winston Porter
Assistant Administrator

THRU: Henry L. Longest II, Director
Office of Emergency and Remedial Response

Attached is a request from the Region III Regional Administrator for a $2M statutory exemption for the Drake Chemical NPL site. If approved, the total project ceiling will be $4,580,460. The remedial program will be funding this response action, which is to implement phase II of the Record of Decision for this site. The approval is contingent upon completion of a signed Superfund State Contract between Region III and the Commonwealth of Pennsylvania prior to commencing site work.

If you concur, please sign the attached Action Memorandum.

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Request for Removal Action and Exemption from the $2 Million Limit at the Drake Chemical NPL Site, Lock Haven, Clinton County, PA

DATE: JUL 13 1988

FROM: James M. Seif
Regional Administrator (3RA00)

TO: Dr. J. Winston Porter, Assistant Administrator
Solid Waste and Emergency Response (WH-548B)

THRU: Timothy Fields Jr., Director
Emergency Response Division (WH-548B)

I. ISSUE

Immediate response actions are estimated to exceed the $2 million statutory limit and a cleanup cannot be undertaken unless an exemption pursuant to Section 104(c)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Re-authorization Act of 1986 (SARA), is approved. This action meets the Removal Criteria of Section 300.65 of the National Contingency Plan (NCP) and is consistent with CERCLA as amended by SARA. This request will allow for a total project ceiling of $4,580,460. This action will utilize Remedial funds and follow the guidelines of the Phase II Record of Decision (Refer to Appendix A) as issued by the Remedial Program.

Statutory Criteria: Section 104 (c)(1)(C) of CERCLA, as amended by SARA, limits Federal emergency response to $2,000,000 and one year in duration unless one of the following criteria are met: (1)(a) continued response actions are immediately required to prevent, limit, or mitigate an emergency, (b) there is an immediate risk to public health, welfare or the environment, and (c) assistance will not otherwise be provided on a timely basis; or (2) continued response actions are otherwise appropriate and consistent with the remedial action to be taken. This exemption request is pursuant to 2 (above) with the specific acknowledgement that the response action at this site will be consistent with the remedy specified by the Drake Chemical NPL Site, Phase II, Record of Decision (ROD).

II. BACKGROUND

A. Site Description - The Drake Chemical Site is on the National Priority List (site #31), and has been addressed by both the Region III Emergency Response Section (1982 and 1986) and the Remedial Section (1982 up to the present). The site is an eight-acre facility located in the southern portion of Lock Haven, Clinton County, Pennsylvania. The population of Lock Haven is approximately 15,000. The facility is bordered by a shopping center, the American Color and Chemical Company, and a large apartment complex which is inhabited primarily by senior citizens. Elementary schools, several churches, and a State college are located within one mile of the site. The site is located in the hundred year floodplain, and drains into the Bald Eagle Creek (less than 1/2 mile south of the site).

B. Site History - Drake Chemical, Inc. was a chemical manufacturing facility which operated from 1961 until August of 1981 and produced the herbicide trichlorophenylacetic acid (trade name FENAC) and a variety of intermediate chemicals used in dyes, pharmaceuticals, cosmetics, and pesticides. Typical chemical processes used by Drake were cyanation, amination, sulfonation and chlorination. The waste streams produced during these processes were either treated in surface impoundments (lime slurry, carbon filtration) or placed in drums and stored onsite. The facility consists of five buildings: two process buildings, one oven building, one warehouse, and one wastewater treatment building.

Inside and adjacent to the process buildings are approximately sixty process tanks and reactors. Ten large tanks used for bulk storage of acids, bases and fuel oil are associated with the other buildings onsite. In past years, large areas of the site were used as treatment lagoons which were filled with process wastes, sludges, drums, and demolition and facility debris. Drums and other debris have been observed in the area of these former lagoons. At one time, lagoons covered five acres of the site. EPIC performed an historical survey of the site with aerial photographs dating back to 1950, which confirmed the existence of the lagoons.

Behind the wastewater treatment building are two lined lagoons which were used to store process wastes prior to treatment. Toward the rear of the property is a surface pond which is apparently fed by groundwater. There was no designated outlet for this pond; however, the contents appear to leach through the lagoon berm into a small tributary to Bald Eagle Creek. Refer to attached Figures 1-7 for diagrams depicting site layout.

C. Hazardous Substances Present - Drake Chemical, Inc. was a small chemical manufacturing facility whose major product was trichlorophenylacetic acid. A summary of the 12/87 sampling results are as follows:

	West Lagoon		East Lagoon	
	H2O (ug/l)	Soil (ug/kg)	H2O (ug/l)	Sludge (ug/kg)
Fenac	12000	8100000	6600	80000000
Benzo(a)Anthracene	670	63000		140000
1,2,-Dichlorobenzene	190	16000	28	42000
1,4,-Dichlorobenzene	390	28000	2	84000
Hexachlorobutadiene	86	8900	2300	100000
1,2,4-Trichlorobenzene	460	46000		930000
Cyanide	20670	34000	3290	226000

Wastewater and organic waste streams resulted from most of the chemical process steps utilized at Drake. These waste streams were stored onsite in drums and lagoons. Two lined lagoons with an estimated volume of 192,000 gallons of wastewater remain onsite. Organic waste streams (containing a mixture of tar-like solvents) which resulted from distillation processes were drummed and stored onsite. Other solids generated during chemical processes were also drummed and stored onsite. The majority of drums were disposed of in the 1982 EPA removal action; however, approximately 500 drums remain onsite.

D. State and Local Roles - On April 4, 1979, a Consent Order and Agreement was executed between Drake Chemical, Inc. and the Pennsylvania Department of Environmental Resources (PADER). On September 7, 1979, Drake was notified by PADER that it was found in violation of this Order. On January 5, 1982, a second Order was issued against Drake Chemical by PADER and the company was again cited for non-compliance. Drake Chemical filed for bankruptcy (Chapter 7) in 1982 and is therefore unable to fund necessary cleanup activities.

The anticipated State and local roles for this removal action are as follows:

* Assisting the OSC in response coordination.
* Coordinating efforts with other Pennsylvania State, county and local agencies.
* Providing public information support on and offsite.

The Commonwealth of Pennsylvania Department of Environmental Resources has agreed to provide 10% of cleanup project costs. Because Phase II addresses removing debris, lagoon and tank materials, maintenance of the site after project completion is not required by the State. Maintenance of the site will be performed by the State after Phase III of the ROD is completed by the Remedial Program.

E. Federal Actions to Date - On February 26, 1982, the Removal Program received funding to proceed with CERCLA removal activities at Drake Chemical Site. An initial assessment revealed the presence of approximately 3,000 drums in deteriorated condition, bulk storage tanks containing acids, bases, and organics were in questionable condition, and there are process reactors containing liquids and sludges. In conjunction with PADER, EPA conducted emergency removal activities which included:

* removal and stabilization of the contents of over 60 storage vessels and reactors.
* removal and disposal of over 2000 drums.
* fencing of facility grounds (to restrict access).
* conducted an extent of contamination study.

The cleanup was completed on April 21, 1982. The Environmental Response Team (ERT) performed an Extent of Contamination (EOC) Study in March, 1982, which focused on the area around the leachate stream.

In August, 1982, EPA initiated Remedial Action studies at the site. Phase I (leachate stream) of the Remedial Investigation Report was completed in April, 1985. The Phase II (buildings and structures) Feasibility Study Report was completed in March, 1986.

In June, 1986, EPA Emergency Response Section responded to a sulphuric acid leak at the Drake Chemical facility. The leaking acid was neutralized with soda ash, and the leaking pipe, approximately 65 ft. in length, was removed, neutralized, and sent for disposal. The Emergency Response Team was onsite for six days.

F. NPL Status - The Drake Chemical Site is on the National Priorities List (NPL) and is designated as site # 31. Due to the complex nature of the site, the Remedial Program has taken a three-phase approach to its cleanup. EPA Region III is proposing that the Removal Program implement the Remedial Program's Phase II Record of Decision (ROD) utilizing the expanded Removal authorities of SARA. The Removal Program will use Remedial funds to implement the Phase II ROD. Phase III of the ROD will be completed by the Remedial Program.

II. EXEMPTION CRITERIA

1. Continued response actions are otherwise appropriate and consistent with the remedial action to be taken [Section 104(c)(1)(C)]. In order to obtain an exemption from the $2 million limit, the OSC must meet the criteria set forth in CERCLA Section 104(c) as amended by SARA. This exemption request is based on the "Consistency Waiver", which allows removal actions to exceed the statutory limits if continued response action is otherwise appropriate and consistent with remedial action to be taken.

The Phase II Record of Decision (ROD) recommends:

a. Drain and remove two lined wastewater treatment lagoons. Treat drained liquid and sludge in an offsite RCRA-permitted treatment facility.

b. Remove all tanks, buildings and debris and dispose of at a RCRA-permitted landfill. Any liquids removed will go to a RCRA-permitted treatment facility.

c. Incineration of chemicals stored in warehouse in an offsite RCRA-permitted incinerator.

d. Analysis and disposal (if needed) of the decontamination fluid in a RCRA-permitted facility.

No operation and maintenance is necessary for this phase of the Drake Superfund Project. This is an interim phase to the ultimate remedy. Phase III will address the remaining contaminated soils, chemicals, sludges, and groundwater contamination.

The removal action taken at this site will be consistent with the Record of Decision.

For the response actions to be appropriate under Section 104(c) of CERCLA, as amended by SARA, the following criteria must be met: a) to mitigate a near-term threat, b) to prevent further migration, and c) to ensure an efficient response.

A. To mitigate a near-term threat.

The Drake Chemical site occupies an approximate area of eight acres, on which 192,000 gallons of lagoon waste and approximately 3,900 cubic yards of building and site debris will be removed according to the ROD. The removal action will eliminate: the offsite migration of hazardous materials, the potential for contaminants to release into surface waters, and the potential for direct contact.

B. To prevent further migration.

The site is located in the Clinton Flood Plain; heavy water drainage across the site could cause the migration of all of the detected chemicals offsite. Phase II of the ROD will address the threat of the contaminated lagoons, buildings, tanks, and drum material migrating offsite and into Bald Eagle Creek. Phase III of the ROD (to be addressed by Remedial) will address the remaining contaminated soils, chemicals, sludges, and groundwater contamination.

C. To ensure an efficient response.

To ensure an efficient and timely response at the Drake Chemical site, the Agency's removal program will implement portions of the Phase II ROD under the authority of the removal program.

2. Consistent With Remedial Action to be taken

All removal actions taken at this site will be consistent with Phase II of the ROD (attached). This proposed action is cost effective and does not interfere with or prohibit further remedial actions to be taken. This action will assist the Remedial program in delisting this site from the NPL. The State of Pennsylvania has agreed with the approved remedy established in the ROD. This remedy includes the removal and disposal of all lagoon, tank and drum waste, along with the removal and disposal of all site debris and the waste handling/generating buildings (Buildings #3, #4, & #5).

The process buildings (Buildings #1 & #2) will be addressed by the Remedial program after this removal action. The State of Pennsylvania has agreed to provide its 10% cost share for the remedial cleanup action prescribed in the Phase II ROD.

III. ENFORCEMENT

Refer to the attached Enforcement Memorandum (Appendix B).

IV. PROPOSED ACTIONS AND COSTS

The proposed actions at the Drake Chemical, Inc. facility are consistent with the Phase II ROD, alternative #1. These actions are:

- Drain and remove two lined wastewater treatment lagoons. Offsite treatment of liquid and sludge in a RCRA-permitted treatment and disposal facility (TSDF).
- Remove all tanks, waste handling buildings, and debris. Material removed, to include liquids, will be transported to an offsite TSDF.
- Incineration of chemicals stored in the warehouse in an offsite TSDF.
- Analysis and disposal (if needed) of the decontamination fluids in a TSDF.

For this removal action, the dismantling and removal of the waste handling buildings, process equipment, tanks, debris, and lined wastewater lagoons will utilize common, well-established methods that involve standard engineering practices.

Building floors, foundations, roofing, walls, steel beams, metal tanks, equipment and other building contents will be dismantled using conventional construction practices. The use of explosives will not be permitted. Shoring and bracing will be provided during the dismantling as needed. Walls will be removed from one story at a time. Masonry walls will be dismantled in small sections. Structural steel will be removed in individual pieces and lowered carefully to the ground. Dust control will be maintained during demolition operations. Walls and other structures will be wet down prior to dismantling. Water used for dust control will be collected where possible.

There are presently two lined wastewater lagoons onsite which Drake used for a short period of time in an effort to pre-treat the facility's effluent before discharge. Estimated volume of the liquid is 192,000 gallons. The lagoons were sampled and analyzed, the sediment was found to be grossly contaminated with a variety of organic compounds. These lagoons will be drained, bulked and disposed of at a RCRA-permitted TSD facility. Lagoon sediment and liner will be removed and transported to a RCRA-permitted TSD facility. The liners associated with the landfill will be removed and transported to a RCRA-permitted TSD facility. The lagoon berms and landfilled soils will be graded onsite as needed.

Where required, site access roads, staging area for truck loading, decontamination pad, access and egress gates and parking area will be constructed. Site facilities such as command post, security and communications operations, personnel and equipment decontamination facilities, equipment storage facility and, if necessary, an onsite weigh station will be maintained.

Buried pipelines (utilities) associated with plant operations will be addressed by the Remedial Program during the implementation of the Phase III ROD, not during this removal action. Utilities that serviced the buildings, especially sewers, are assumed to be contaminated.

These utilities will be abandoned and the pipes will be plugged. Utilities that cross the site and serve other properties will be temporarily or permanently removed or replaced should they interfere with the implementation of this removal action.

Removal Project Ceiling Estimate

Extramural Costs	
ERCS Contractor (Labor, equipment, and analytical support)	1,221,868
Waste Transport and Disposal	1,800,000
Contractor Subtotal	3,021,868
15 % Contingency	453,280
Contractor Total	3,475,148

TAT Costs	300,000
Extramural Subtotal	3,775,148
15% Contingency	566,272
Extramural Total	4,341,420

Intramural Costs

Intramural Direct Costs ($30 x 3168 hours, includes 10% HQ)	95,040
Intramural Indirect Costs ($52 x 2880 hours)	144,000
Intramural Total	239,040
PROJECT TOTAL	4,580,460

V. Recommendation

Because conditions at the site meet the National Contingency Plan Section 300.65(b)(2), and CERCLA Section 104(c)(1)(C) criteria for a Removal Action, I recommend your approval of this request for an exemption from the $2 million statutory limit for this site. The estimated total project costs are $4,580,460, of which $3,475,148 are for extramural contractor costs. You may indicate your approval or disapproval by signing below.

Approved: _____ Date: AUG - 5 [illegible]

Disapproved: _____ Date: _____

The anticipated State and local roles for this removal action are as follows:

* Assisting the OSC in response coordination.
* Coordinating efforts with other Pennsylvania State, county and local agencies.
* Providing public information support on and offsite.

The Commonwealth of Pennsylvania Department of Environmental Resources has agreed to provide 10% of cleanup project costs. Because Phase II addresses removing debris, lagoon and tank materials, maintenance of the site after project completion is not required by the State. Maintenance of the site will be performed by the State after Phase III of the ROD is completed by the Remedial Program.

E. Federal Actions to Date - On February 26, 1982, the Removal Program received funding to proceed with CERCLA removal activities at Drake Chemical Site. An initial assessment revealed the presence of approximately 3,000 drums in deteriorated condition, bulk storage tanks containing acids, bases, and organics were in questionable condition, and there are process reactors containing liquids and sludges. In conjunction with PADER, EPA conducted emergency removal activities which included:

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d. Analysis and disposal (if needed) of the decontamination fluid in a RCRA-permitted facility.

No operation and maintenance is necessary for this phase of the Drake Superfund Project. This is an interim phase to the ultimate remedy. Phase III will address the remaining contaminated soils, chemicals, sludges, and groundwater contamination.

The removal action taken at this site will be consistent with the Record of Decision.

For the response actions to be appropriate under Section 104(c) of CERCLA, as amended by SARA, the following criteria must be met: a) to mitigate a near-term threat, b) to prevent further migration, and c) to ensure an efficient response.

A. To mitigate a near-term threat.

The Drake Chemical site occupies an approximate area of eight acres, on which 192,000 gallons of lagoon waste and approximately 3,900 cubic yards of building and site debris will be removed according to the ROD. The removal action will eliminate: the offsite migration of hazardous materials, the potential for contaminants to release into surface waters, and the potential for direct contact.

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The process buildings (Buildings #1 & #2) will be addressed by the Remedial program after this removal action. The State of Pennsylvania has agreed to provide its 10% cost share for the remedial cleanup action prescribed in the Phase II ROD.

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Where required, site access roads, staging area for truck loading, decontamination pad, access and egress gates and parking area will be constructed. Site facilities such as command post, security and communications operations, personnel and equipment decontamination facilities, equipment storage facility and, if necessary, an onsite weigh station will be maintained.

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Intramural Costs

Intramural Direct Costs ($30 x 3168 hours, includes 10% HQ)	95,040
Intramural Indirect Costs ($52 x 2880 hours)	144,000
Intramural Total	239,040
PROJECT TOTAL	4,580,460

V. Recommendation

Because conditions at the site meet the National Contingency Plan Section 300.65(b)(2), and CERCLA Section 104(c)(1)(C) criteria for a Removal Action, I recommend your approval of this request for an exemption from the $2 million statutory limit for this site. The estimated total project costs are $4,580,460, of which $3,475,148 are for extramural contractor costs. You may indicate your approval or disapproval by signing below.

Approved: _____ Date: AUG - 5 1992

Disapproved: _____ Date: _____

APPENDIX C

SITE SAFETY PROTOCOL

APPENDIX C

SITE SAFETY PLAN

Due to the magnitude of the operations performed at the Drake Chemical NPL Site #3, the entire site safety plan is voluminous and is impractical to be included in this report. The contained document contains site-specific information. The plan in its entirety is maintained in the site file and copies may be obtained upon request at the address/ telephone number provided in Section II, Roster of Agencies, Organizations and Individuals.

DRAKE CHEMICAL SITE SAFETY PLAN
LOCK HAVEN, CLINTON COUNTY, PENNSYLVANIA

EDWARD M. POWELL
ON-SCENE COORDINATOR
U.S. EPA REGION III

DRAKE CHEMICAL SITE SAFETY PLAN
LOCK HAVEN, CLINTON COUNTY, PA

ORIGINAL (RED)

CONTENTS

SITE SAFETY PLAN

DRAKE CHEMICAL
CLINTON COUNTY, PA

GENERAL

This protocol addresses the safety procedures that will be followed by any and all personnel visiting the site or involved in the CERCLA Removal activity at the Drake Chemical, Inc. facility. All requirements listed in this safety protocol are consistent with OSHA 1910 regulations (Attached). This protocol will remain in effect until the OSC certifies that the Removal activity is terminated. It does not supersede any Federal OSHA, State, or local regulations, but is in addition to them.

BACKGROUND

Site Description - The Drake Chemical Site is on the National Priority List (#31) and has been addressed by both the Region III Emergency Response Section (1982 and 1986) and the Remedial Section (1982 to present). The site is an eight-acre facility located in the southern portion of Lock Haven, Clinton County, Pennsylvania. The population of Lock Haven is approximately 15,000. The facility is bordered by a shopping center, the American Color and Chemical Company, and a large apartment complex which is inhabited primarily by senior citizens. Elementary schools, several churches, and a state university are located within one mile of the site. The site is located in the hundred year floodplain, and drains into the Bald Eagle Creek (less than 1/2 mile south of the site).

Site History - Drake Chemical, Inc. was a chemical manufacturing facility which operated from 1961 until August of 1981 and produced the herbicide, trichlorophenylacetic acid (tradename FENAC), and a variety of intermediate chemicals used in dyes, pharmaceuticals, cosmetics, and pesticides. Typical chemical processes used by Drake were cyanation, amination. sulfonation, and chlorination. The waste streams produced during these processes were either treated in surface impoundments (lime slurry, carbon filtration) or placed in drums and stored on site. The facility consists of five buildings: two process buildings, one oven building, one warehouse, and one wastewater treatment building.

Inside and adjacent to the process buildings are approximately sixty process tanks and reactors. Ten large tanks used for bulk storage of acids, bases, and fuel oil are associated with the other buildings on site. In past years, large areas of the site were used as treatment lagoons which were

filled with process wastes, sludges, drums, demolition and facility debris. Drums and other debris have been observed in the area of these former lagoons. At one time, lagoons covered five acres of the site. EPIC performed a historical survey of the site with aerial photographs dating back to 1950, which confirmed the existence of the lagoons.

Behind the wastewater treatment building are two lined lagoons which were used to store process wastes prior to treatment. Toward the east end of the property is a surface pond which is apparently fed by groundwater. There was no designated outlet for this pond; however, the contents appear to leach into a small tributary to Bald Eagle Creek through an inactive railroad line located along the border of the site.

C. Hazardous Substances - Drake Chemical, Inc. was a small chemical manufacturing facility whose major product was trichlorophenylacetic acid. Other chemical compounds known to exist at Drake are as follows:

Aniline
Benzene
Benzoic acid
Calcium chloride
Chlorobenzene
Chloroform
Ethyl benzene
Hydrogen fluoride
Phenol
Potassium chloride
Sodium nitrite
Sodium sulfate
Sulfuric acid
Tetraethylene
Trichlorophenyl acetic acid
Toluene
1,2 Dichloroethane
1,4 Dichlorobenzene
2,4 Dinitrophenol

Material safety data sheets for these substances can be found in Annex A. TLV/IDLH information can also be found in Annex A.

The process buildings contain considerable quantities of asbestos, located along deteriorating process lines, and several reactor vessels containing cyanide salts.

Wastewater and organic waste streams resulted from chemical processes utilized at Drake. There are two lined wastewater storage lagoons with an estimated volume of 200,000 gallons remaining on site.

Organic waste streams contained a mixture of solvents which

were reclaimed by distillation. The tar-like still bottoms that resulted from this process were drummed and stored on site. Other miscellaneous solids generated during chemical process were also drummed and stored on site. The majority of drums were disposed of in the 1982 Removal; however, approximately 500 drums remain on site.

D. State and Local Roles - On April 4, 1979, a Consent Order and Agreement was executed between Drake Chemical, Inc. and the Pennsylvania Department of Environmental Resources (PADER). On September 7, 1979, Drake was notified by PADER that they were found in violation of this Order. On January 5, 1982, a second Order was issued against Drake Chemical by PADER and the company was again cited for non-compliance. Drake Chemical filed for bankruptcy in 1982, and is therefore unable to fund necessary cleanup activities.

The anticipated State and local roles for this Removal Action are as follows:

* assisting the OSC in response coordination.
* coordinating efforts with other Pennsylvania state, county, and local agencies.
* providing public information support on and off site.

The Commonwealth of Pennsylvania Department of Environmental Resources has agreed to provide 10% of cleanup project costs.

E. Federal Action to Date - On February 6, 1982, the Removal Program received funding to proceed with CERCLA Removal activities at the Drake Chemical site. An initial assessment revealed the presence of approximately 3,000 drums in deteriorating condition, bulk storage tanks in unstable condition containing acids, bases, and organic solids, and process lines containing liquids and sludges. In conjunction with PADER, EPA conducted emergency removal activities which included:

* removal or stabilization of the contents of over 60 storage vessels and reactors.
* removal and disposal of over 2000 drums.
* conducting an extent of contamination study.

The cleanup was completed on April 21, 1982. The Environmental Response Team (ERT) performed an Extent of Contamination (EOC) Study in March, 1982, which focused on the area around the leachate stream.

In August, 1982, EPA initiated Remedial Action studies at the site. Phase I (leachate stream) of the Remedial Investigation Report was completed in April, 1985. The Phase II (buildings and structures) Feasibility Study Report was completed in March, 1986.

In June, 1986, EPA Emergency Response Section responded to

a sulfuric acid leak at the Drake Chemical facility. The leaking acid was neutralized with soda ash, and the leaking pipe, approximately 65 ft. in length, was removed, neutralized, and sent for disposal. This action lasted six days.

F. NPL Status - The Drake Chemical Site is on the National Priorities List (NPL) and is designated as site #31. Due to the complex nature of the site, the Remedial Program has taken a three-phase approach to its cleanup. EPA Region III is proposing that the Removal Program implement the Remedial Program's Phase II Record of Decision (ROD) utilizing the expanded Removal authorities of SARA. The Removal Program will use Remedial funds to complete the Phase II ROD.

RESPIRATORY PROTECTION PROGRAM

All governmental and contractor personnel involved in on-site activities shall be involved in a written respiratory protection program and have proof that they are physically fit to wear a respirator. All personnel wearing air-purifying respirators on site are required to be fit tested, while those wearing pressure-demand self-contained breathing apparatus or air-line apparatus must be properly trained and experienced in their use. All respiratory protection equipment is to be properly decontaminated at the end of each work day.

TRAINING AND MEDICAL MONITORING PROGRAM

Personnel will have either formal training or on-the-job training for those tasks which they are assigned to perform on the active site. All unfamiliar activities will be rehearsed beforehand.

All contractor and governmental personnel who are exposed to hazardous levels of chemicals shall prove that they are enrolled in a medical monitoring program.

GENERAL SAFETY RULES AND EQUIPMENT

A. There will be no eating, drinking, or smoking in the Exclusion Zone or hot side of the Contamination Reduction Zone.

B. All personnel must pass through the Contamination Reduction Zone to enter the Exclusion zone when required.

C. An emergency eye wash will be on the hot side of the Contamination Reduction Zone when required.

D. At the end of the work day, all personnel working in the Exclusion Zone shall take a hygienic shower.

E. All supplied breathing air shall be certified as Grade D or better.

F. Where practical, all tools/equipment will be spark-proof, explosion resistant, and/or bonded and grounded.

G. Fire extinguishers will be on site for equipment or personnel fires only.

H. A first-aid kit will be on-scene at all times during operational hours. The location of these items on-site will be posted.

I. Persons having beards are forbidden to wear respirators.

J. No work shall be performed in the Exclusion Zone during hours of darkness as determined by the site safety officer.

SAFETY MEETING

A safety meeting will be conducted prior to each day's work for all site personnel who sign a daily attendance sheet. The safety procedures, evacuation procedures, and escape procedures, as well as the day's planned operations, should be discussed.

SITE SPECIFIC HAZARDS

A. ASBESTOS - Asbestos, if encountered, should not be disturbed unless prior approval from the OSC is obtained. If conditions require frequent working in the area of asbestos, the following additional safety precautions will be taken:

- the suspected asbestos will be wetted with water using a low pressure garden sprayer, to reduce friability.
- a full tyvek rinse using a garden sprayer and water will be performed in a controlled area prior to entering the decontamination line.

B. 1) HEAT STRESS - During the removal period, high average temperatures are expected to occur daily. All personnel working on site will follow the heat stress monitoring plan included in Annex B.

2) COLD STRESS - During the later stages of the removal project, colder weather conditions will require all personnel to adhere to the cold stress moitoring plan which is also included in Annex B.

C. WORK AREA PROTECTION LEVELS - Site specific activities mandate different levels of personal protective gear. These requirements can be found in Annex C.

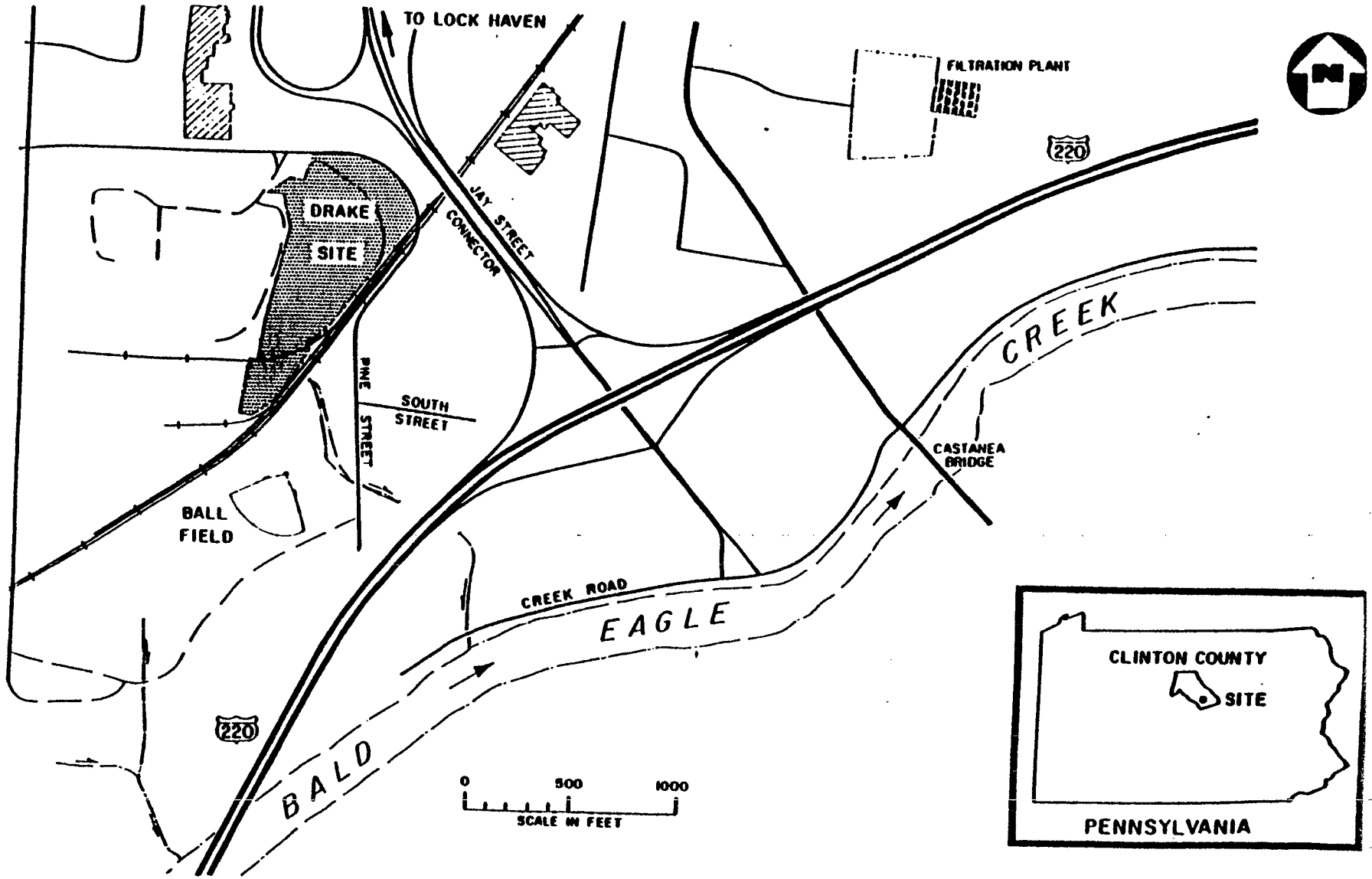
D. BUILDING DEMOLITION - Particular precautions will be taken during the demolition of the buildings on site. The particular restrictions of these operations can be found in Annex D.

AIR MONITORING

Air monitoring will be performed at regular intervals, at the discretion of the OSC. Monitoring equipment will be calibrated each day, and all readings will be recorded in the air monitoring log book.

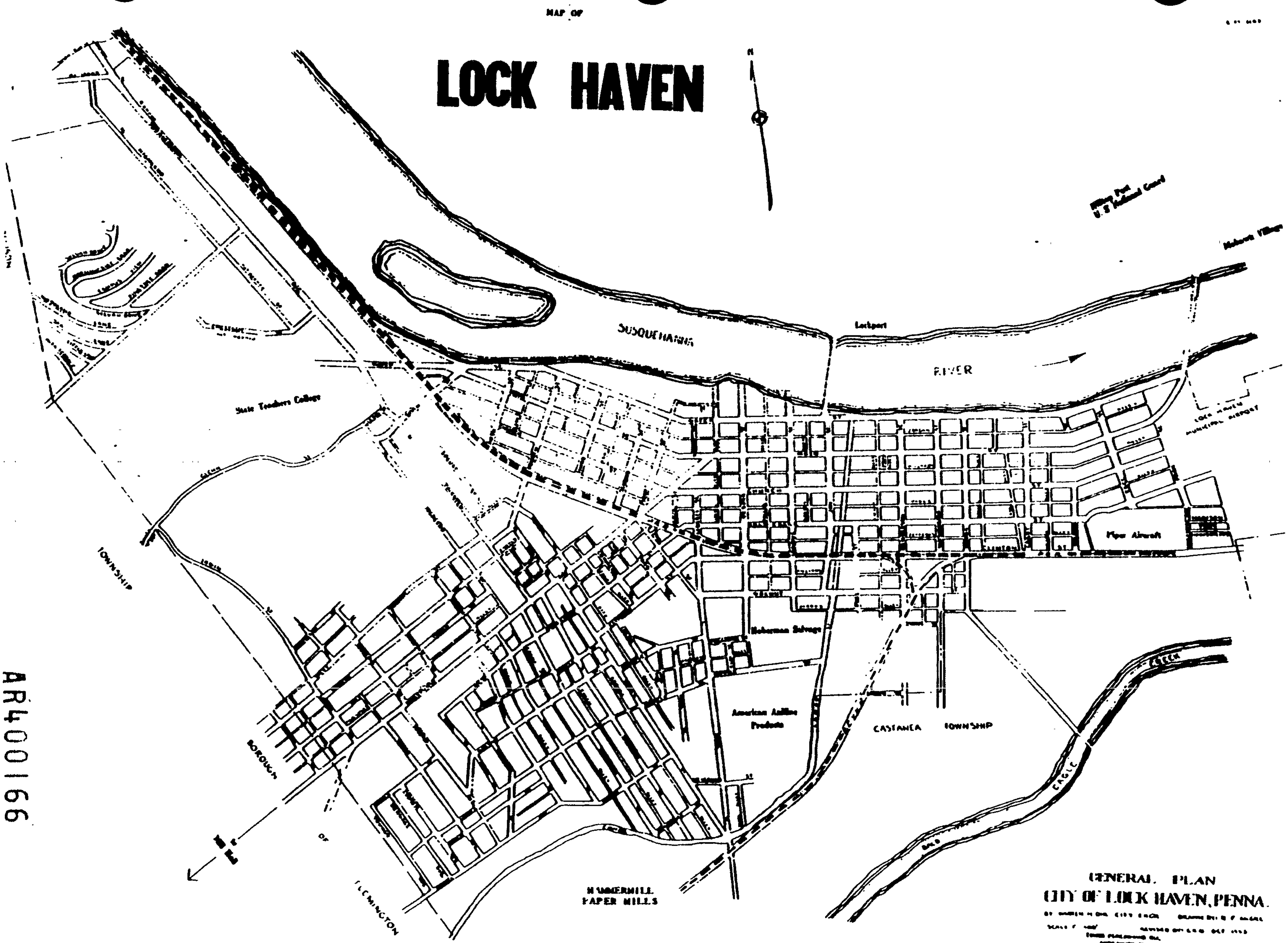
ANNEX LISTING

ANNEX A - Material Safety Data Sheets
ANNEX B - Classification, Medical Aspects, Prevention, and Treatment of Heat and Cold related Illness
ANNEX C - Levels of Protection required for site-specific activities
ANNEX D - Safety Requirements for Building Demolition Operations
ANNEX E - CFR OSHA 1910
ANNEX F - Original Scope of Work

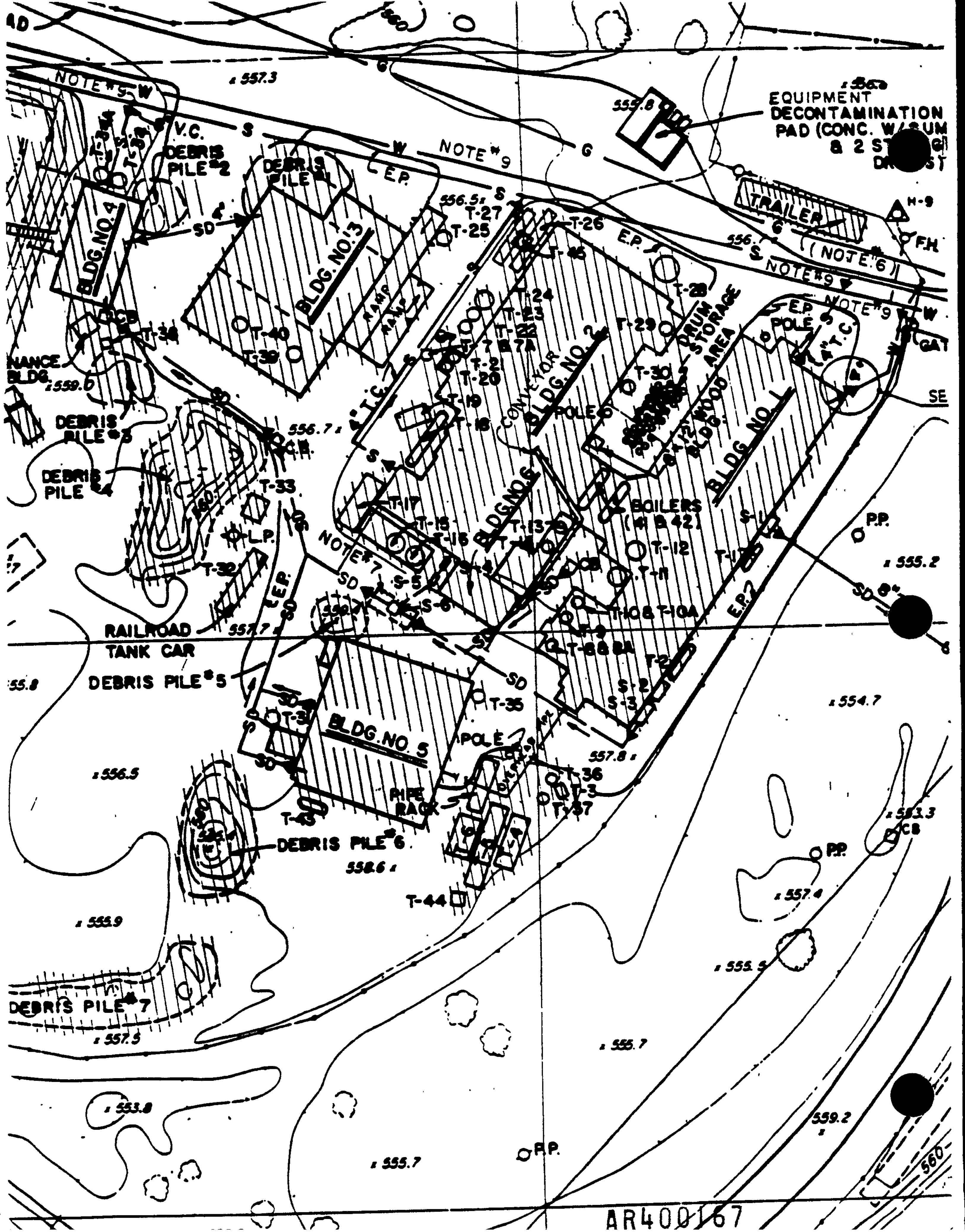


SITE LOCATION MAP
DRAKE CHEMICAL SITE
LOCK HAVEN, PENNSYLVANIA

FIGURE 1


MAP OF
LOCK HAVEN
N
SUSQUEHANNA
RIVER
Lockport
Piper Aircraft
Hoberman Salvage
American Aniline Products
CASTANEA TOWNSHIP
State Teachers College
TOWNSHIP
BOROUGH
OF
FLEMINGTON
HAMMERMILL PAPER MILLS
GENERAL PLAN
CITY OF LOCK HAVEN, PENNA.

AR400166


EQUIPMENT
DECONTAMINATION
PAD (CONC. W/SUM
TRAILER
(NOTE 6)
NOTE #9
NOTE #5
DEBRIS PILE #2
DEBRIS PILE #1
BLDG. NO. 4
BLDG. NO. 3
BLDG. NO. 2
BLDG. NO. 1
BLDG. NO. 6
BLDG. NO. 5
DRUM STORAGE AREA
BOILERS
DEBRIS PILE #3
DEBRIS PILE #4
NOTE #7
RAILROAD
TANK CAR
DEBRIS PILE #5
DEBRIS PILE #6
DEBRIS PILE #7
PIPE RACK
POLE
P.P.
F.H.
557.3
556.7
557.7
556.5
555.9
557.5
553.8
555.7
554.7
555.2
557.4
553.3
559.2
557.8
558.6
560

PROJECT: DRAKE CHEMICAL PAGE 1 OF ___

SUBJECT: SITE SAFETY PLAN SIGN-IN DATE: 8/11/88

NAME	REPRESENTING	TIME IN	TIME OUT
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	TAT		
[illegible]	TAT		
[illegible]	EPA		
[illegible]	EPA		
[illegible]	OHM		
[illegible]	OHM		
[illegible]	OHM 8/18/88		
Pat McKenna	EPA 8/18/88		
Charles M. Hall	OHM 10/6/88		
[illegible]	F.C.I. 10/7/88	11:00	
[illegible]	FCI 10/7/88	1315	

PROJECT: DRAKE CHEMICAL

SUBJECT: SITE SAFETY PLAN SIGN-IN

PAGE 2 OF __

DATE: 8 / 11 / 88

NAME	REPRESENTING	TIME IN	TIME OUT
David Rucen	OHM		
[illegible]	OHM		
[illegible]	OHM		
Jim Henry	EPA		
Joseph A. DeAngelis	TAT		
Don Wagner	USM		
Frances L Costanzi	PADER		
Don Becker	PADER		
Craig Olewiler	PADER		
Gary Shaffer	PADER		
[illegible]	OHM		
[illegible]	TAT		
[illegible]	EPA		
Carl Duffey	OHM		
[illegible]	OHM		
Bette J. Strange	TAT		
[illegible]	OHM	10/4/88	
Joseph M. [illegible]	OHM	10/5/88	
Ken Woelk	OHM		
Mark E Scale	OHM	10/6/88	
Dennis Matlock	TAT	10/12/88	
Carmelo Vani	CVI	10/19/88	
[illegible]	Matheson	10/18/88	
[illegible]	OHM	11/4/88	
Wendell J. Davis	TAT	12-12-88	

AR400169

APPENDIX D

PHOTOGRAPHIC DOCUMENTATION

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

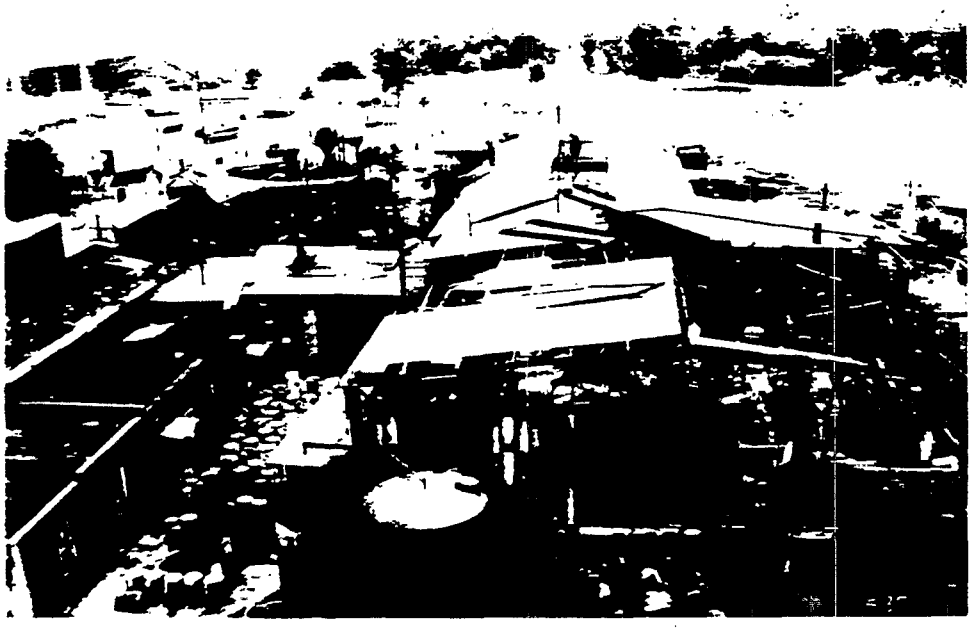
Photograph # 1

Date Taken August 15, 1988

Photographer John Fellinger, Region III TAT

Description Extended view of the site, including buildings 1, 2, 3, 4, and 5, as well as lagoons 1 and 2 and site debris.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



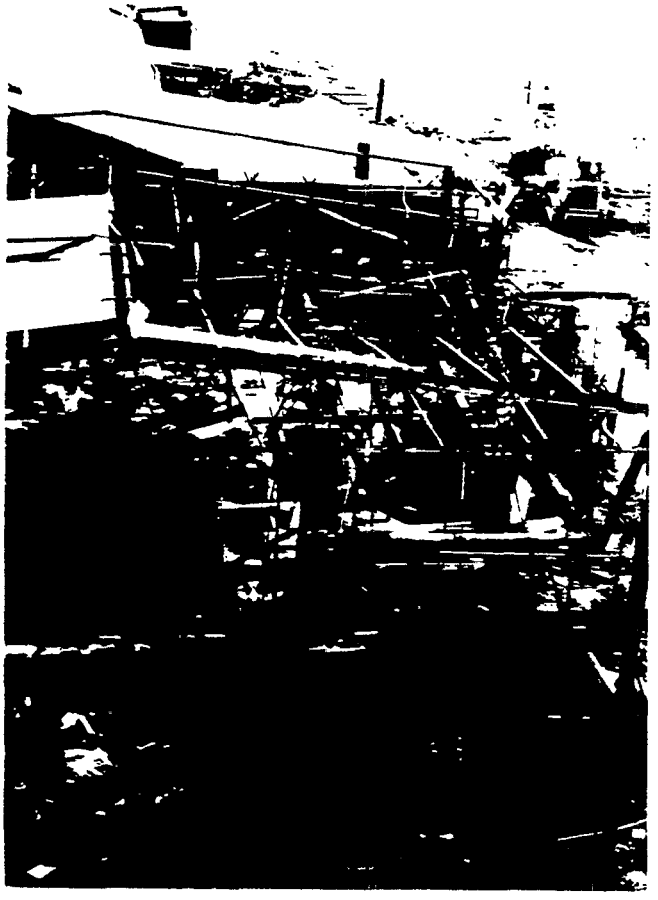
Photograph # 2

Date Taken August 15, 1988

Photographer John Fellinger, Region III TAT

Description Aerial view of buildings 1, 2 and 5 with unknown drums staged between buildings 1 and 2.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



Photograph # 3

Date Taken August 15, 1988

Photographer John Fellinger, Region III TAT

Description Aerial view of tanks, vats, and process lines remaining in building 2.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

Photograph # 4

Date Taken August 11, 1988

Photographer John Fellinger, Region III TAT

Description Buildings 3 and 4 with stainless steel oleum residue drums in trash pile.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

Photograph # 5

Date Taken August 11, 1988

Photographer John Fellinger, Region III TAT

Description Fiberboard drums containing unknown materials stored in building 3.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

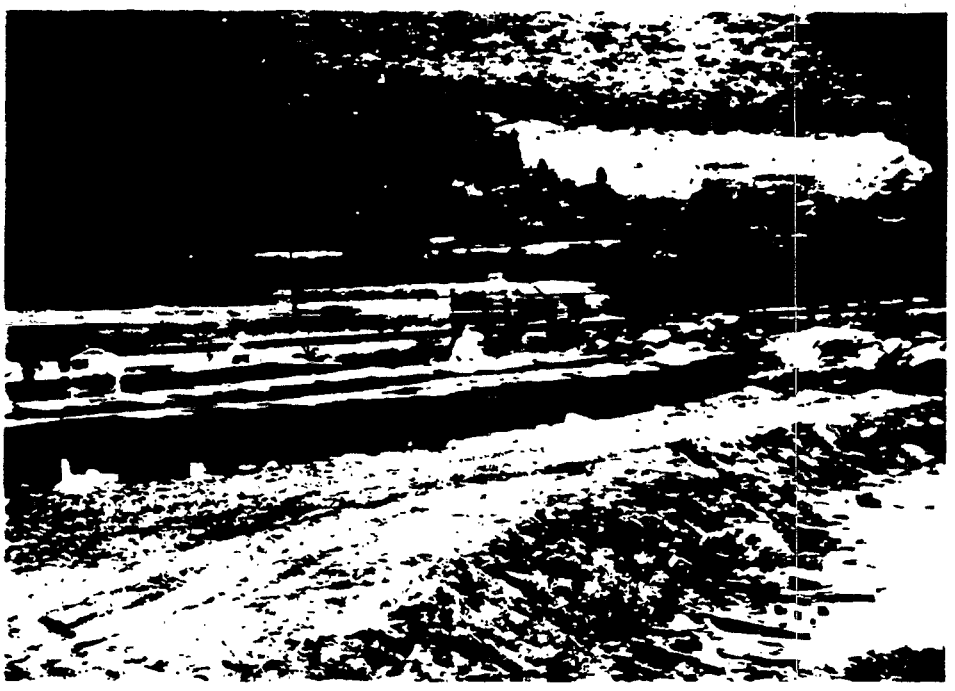
Photograph # 6

Date Taken August 6, 1988

Photographer John Fellinger, Region III TAT

Description Deteriorated lagoon liner (east) located behind building 4. Capped soil visible in the background.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



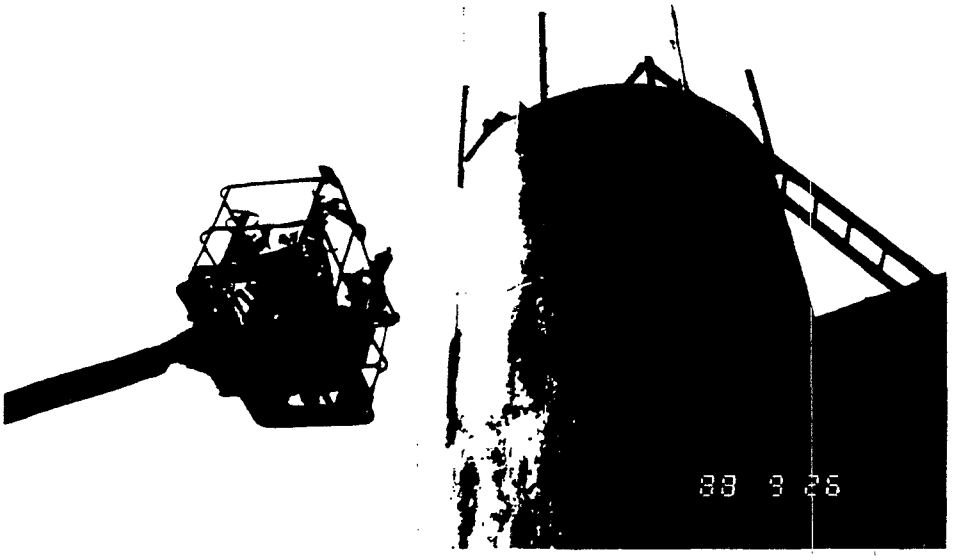
Photograph # 7

Date Taken September 26, 1988

Photographer Christine Wagner, Region III TAT

Description Overpacked/staged drums ready for disposal that were collected from building 3, from between buildings 1 and 2, and from site rubble.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



Photograph # 8

Date Taken September 26, 1988

Photographer Christine Wagner, Region III TAT

Description TAT and ERCS conducting tank assessment/sampling for disposal analysis.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

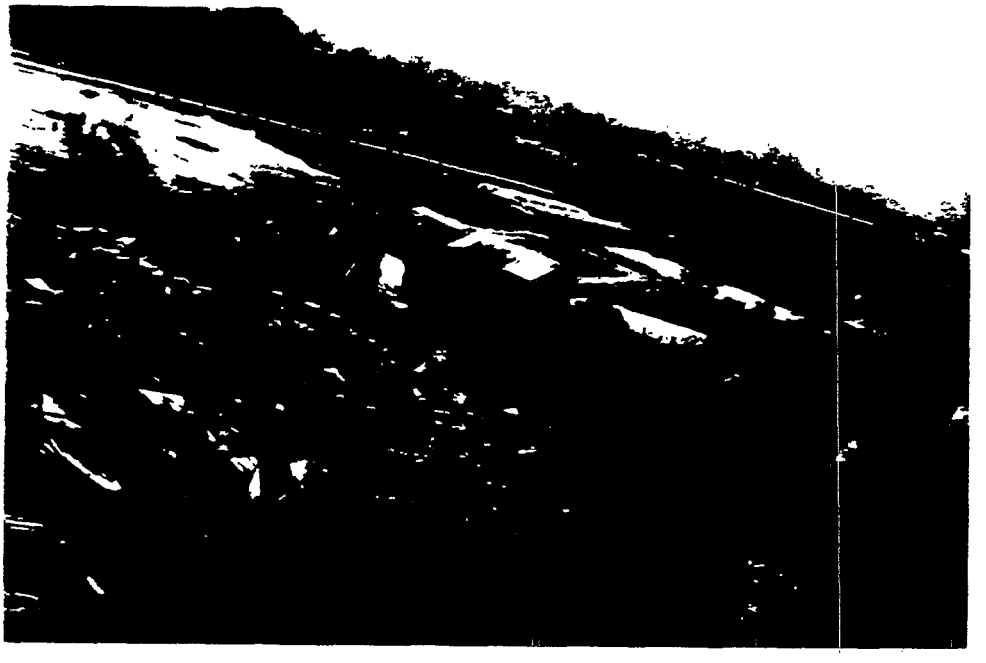
Photograph # 9

Date Taken September 8, 1988

Photographer Christine Wagner, Region III TAT

Description Demolition of building 4.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



Photograph # 10

Date Taken September 8, 1988

Photographer Christine Wagner, Region III TAT

Description Demolition and segregation of building 3.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

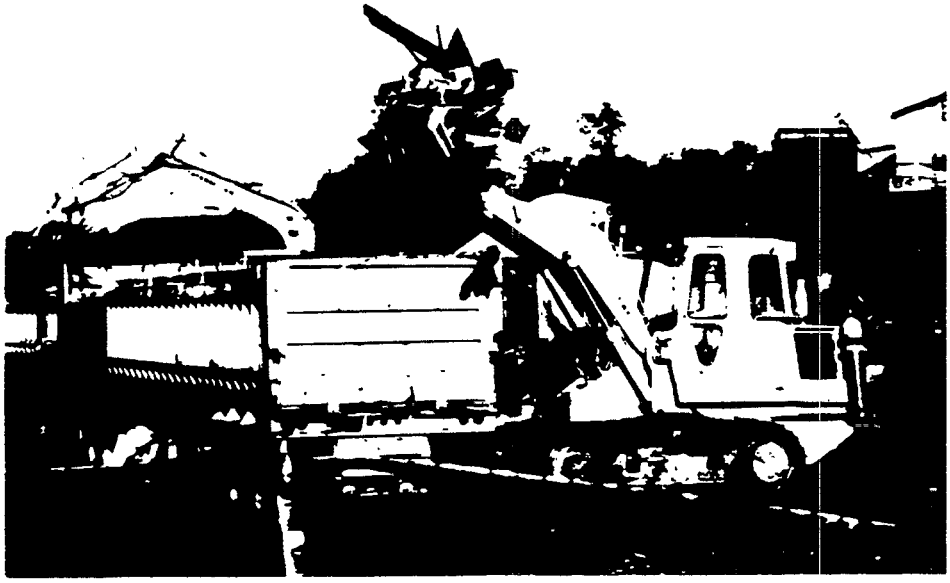
Photograph # 11

Date Taken September 8, 1988

Photographer Christine Wagner, Region III TAT

Description Segregation of rubble of buildings 3, 4, and 5 in preparation for disposal.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



Photograph # 12

Date Taken October 1988

Photographer John Fellinger, Region III TAT

Description Loading rubble for disposal.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

Photograph # 13

Date Taken August 14, 1988

Photographer Christine Wagner, Region III TAT

Description TAT and ERCS sampling east lagoon sludge for disposal analysis. Note buddy system and safety line in use.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

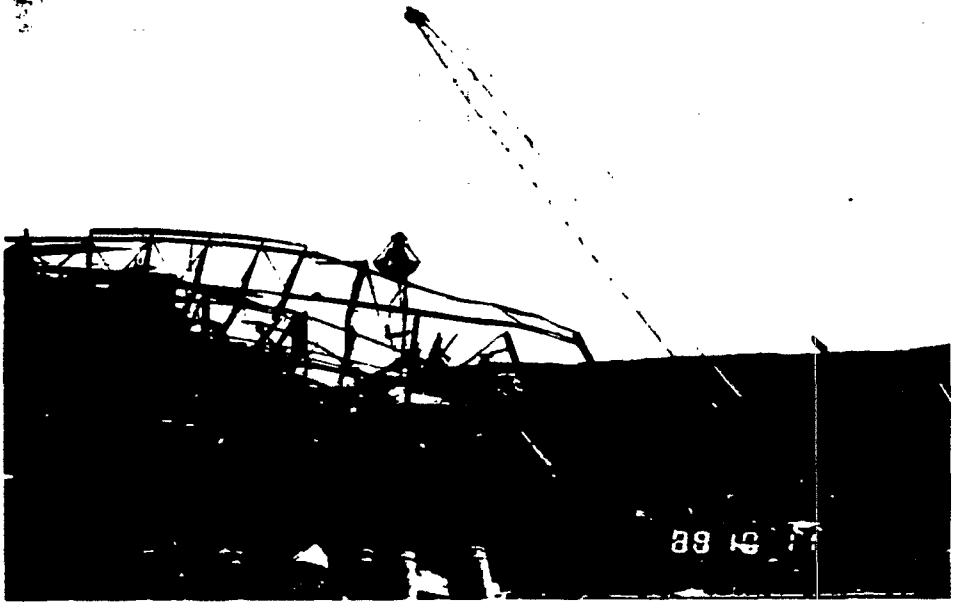
Photograph # 14

Date Taken September 26, 1988

Photographer John Fellinger, Region III TAT

Description TAT and ERCS investigating process lines and vats in building 2 prior to demolition.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION



Photograph # 15

Date Taken October 11, 1988

Photographer Christine Wagner, Region III TAT

Description Demolition of building 2 utilizing 75-ton crane.

APPENDIX D
PHOTOGRAPHIC DOCUMENTATION

Photograph # 16

Date Taken December 14, 1988

Photographer Christine Wagner, Region III TAT

Description View of the site after the removal of debris and after the area was graded at the completion of the project.

APPENDIX E

POLREPS

APPENDIX E

POLREPs

This OSC report provides a synopsis of events as they occurred at the Drake Chemical NPL Site #3 derived from POLREPs, photographic documentation, and site logs. As POLREPs are maintained in the EPA Region III RRC and in an effort to present a more concise report, they have not been included in this report. Copies may be obtained upon request at the address/telephone number provided in Section II, Roster of Agencies, Organizations and Individuals.

APPENDIX F

DELIVERY ORDER/PROCUREMENT REQUESTS

US Environmental Protection Agency
Washington, DC 20460

EPA Procurement Request/Order

1. Name of Originator	Edward M. [illegible]
2. Date of Requisition	[illegible] ORIGINAL
3. Mail Code	[illegible]
4. Telephone Number	215-597-[illegible]
5. Date Item Required	ASAP
6. Signature of Originator	(signature)
7. Recommended Procurement Method	☐ Competitive ☐ Other than full and open competition ☐ Sole source small purchase
8. Deliver To (Project Manager)	Steve Jarvela
9. Address	841 Chestnut St., Phila., PA 19107
10. Mail Code	3HW25
11. Telephone Number	215-597-7913

12. Financial Data
(a) Appropriation 68/2XX8145

NOTE: Item 12 (c) Document Type—Contract = "C," Purchase Order = "P," IGA = "A," Other (Misc.) = "X"

FMO Use (b) (13 digits)	DT (c)	Document Control Number (d) (6 digits)	Account Number (e) (10 digits)	Object Class (f) (4 digits)	Amount (g) Dollars	Cents
		[illegible]	[illegible]	25.35	[illegible],000	00

13. Suggested Source (Name, Address, ZIP Code, Phone/Contact)	14. Amount of money committed is:	15. Servicing Finance Office Number
O. H. Materials Findlay, OH	☒ Original ☐ Increase ☐ Decrease	Region III

16. Approvals

	Date		Date
a. Branch/Office Thomas C. [illegible] (signature)	[illegible]	d. Property Management Officer/Designee	
b. Division/Office Stephen R. [illegible] (signature) for	8/9/85	e. Other (Specify)	
c. Funds listed above are available and reserved Rick [illegible] (signature)	3/3/89	f. Other (Specify)	

17. Date of Order	18. Order Number	19. Contract Number (if any)	20. Discount Terms

21. FOB Point	22. Delivery to FOB Point by On or before (Date)	23. Person Taking Order/Quote and Phone No.

24. Contractor (Name, address, ZIP Code)

25. Type of Order
Reference your quote (See block 23)
☐ a. Purchase
Please furnish the above on the terms specified on both sides of this order and on the attached sheets, if any, including delivery as indicated.
☐ b. Delivery provisions on the reverse are deleted. The delivery order is subject to the terms and conditions of the contract (See Block 19)
c. ☐ Oral ☐ Written ☐ Confirming

26. Schedule

Item Number (a)	Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Estimated Unit Price (e)	Unit Price (f)	Amount (g)	Quantity Accepted (h)
	Site Name: Drake Chemical						
	Site ID#: 31						
	Location: Clinton County Lock Haven, PA						
	Contract #: 68-01-7445						
	Delivery Order No.: 7445-03-052						
					Total ▸		

27. United States of America By (Signature)	28. Typed Name and Title of Contracting Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

ORIGINAL (Red)

EPA DELIVERY ORDER FOR EMERGENCY RESPONSE CLEANUP SERVICES

(This delivery order is issued subject to all terms and conditions of the contract identified in Block 2.)

1. DATE OF ORDER	2. CONTRACT NUMBER	3. ORDER NUMBER
8/9/88	68-01-7445	7445-03-052

4. TIME OF INITIAL ORDER *(If initial order was verbal)* *(Specify Time Zone)*	5. DELIVERY ORDER CEILING AMOUNT *(Obligated Amount)*
☐ AM 254 ☒ PM	$250,000.

6. ACCOUNTING AND APPROPRIATION DATA

Appropriation Number	Document Control No.	Account Number	Object Class
68/20x8145	RA0009	8TFA3ASR31	25.35

7a. ISSUED TO: CONTRACTOR *(Name, Address, and ZIP Code)*	8a. ISSUED BY: ORDERING OFFICE *(Name, Address, and ZIP Code)*
O.H. Materials PO Box 551 Findlay, OH 45839	Steve Jarvela 841 Chestnut Bldg Phila, PA 19107

7b. PROGRAM MANAGER *(Name and Phone Number)*	8b. EPA REGION/USCG DISTRICT	8c. ZONE
Walt Youngblade	EPA Region III	1

7c. RESPONSE MANAGER *(Name and Phone Number)*	8d. ON-SCENE COORDINATOR *(Name and Phone Number)*
John L. Bourret (804) 362-0079	Edward M. Powell (215) 597-8170

9. RESPONSE LOCATION *(Site Name and/or Address and ZIP Code)*	10. CONTRACTOR REQUIRED ON SITE *(Date and Time)* *(Specify Time Zone)*	11. REQUIRED WORK COMPLETION DATE
Drake Chemical Clinton County Lock Haven, PA	8/10/88 3:00 ☐ AM ☒	12/15/88

12. STATEMENT OF WORK

The Contractor shall furnish the necessary personnel, materials, services, facilities, and otherwise do all things necessary for or incident to the performance of the work set forth below:

By direction of the OSC, the contractor shall provide the following services:

1. Sample and analysis of materials as required for disposal.
2. Drain, remove and dispose of lined lagoons.
3. Remove and dispose of tanks, vessels, waste handling buildings and their contents.
4. Remove and dispose of site debris and landfill liners.
5. Remove and dispose of drums, chemicals and materials stored onsite.
6. Grade site for rain water retention.
7. Any associated work deemed necessary by the OSC during the response action.

13. ORDERING OFFICER

NAME/TITLE	SIGNATURE	DATE
Stephen Jarvela OSC		8/9/88

EPA Form 1900-69 (11-83)

AR400190a

ORDERING OFFICER/OSC

APPENDIX G

RI/FS AND ROD

Record of Decision
Remedial Action Alternative Selection

Site: Drake Chemical Site (Phase II), Lock Haven, Clinton County, Pennsylvania

Documents Reviewed:

The underlying technical information, unless otherwise specified, used for analysis of cost-effectiveness and feasibility of remedial alternatives is included in the following documents and project correspondence. I have been briefed by my staff on their contents, and they form the principal basis for my decision on the appropriate extent of remedial action.

- "Remedial Investigation Report" - Phase II (Draft), Drake Chemical Site, Lock Haven, Clinton County, Pennsylvania. (NUS Corporation, January, 1985, Revised April, 1985)

- "Feasibility Study of Alternatives - Phase II Building and Contaminated Structures" (Draft) - Drake Chemical Site, Lock Haven, Clinton County, Pennsylvania (NUS Corporation, March, 1986)

- Recommendations by the Pennsylvania Department of Environmental Resources.

- Staff summaries and recommendations, including the attached "Summary of Remedial Alternative Selection, Drake Chemical Site" (Phase II)

Description of Selected Remedy:

- Drain and remove two lined wastewater treatment lagoons. Treat drained liquid and sludge in an offsite RCRA-permitted treatment facility.

- Remove all tanks, buildings and debris. Decontaminate all metal structures that can be salvaged as scrap. Any material not decontaminated will be transported and disposed of in a RCRA-permitted landfill. Any liquids removed will go to a RCRA-permitted treatment facility.

- Incineration of chemicals stored in warehouse in an offsite RCRA-permitted incinerator.

- Analysis and disposal (if needed) of the decontamination fluid in a RCRA-permitted facility.

Operation and Maintenance:

No operation and maintenance is necessary for this phase of the Drake Superfund Project. This is an interim phase to the ultimate remedy. Phase III will address the remaining contaminated soils, chemicals, sludges and ground water contamination.

Declaration:

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the National Contingency Plan (40 CFR Part 300), I have determined that the remedial actions described above constitute a cost-effective remedy which mitigates and minimizes damage to the public health, welfare and the environment. The remedial action will be designed to minimize any temporary inconveniences to the local population during the construction phase.

The State of Pennsylvania has been consulted and agrees with the approved remedy. No operation and maintenance is required for this phase of the project.

I have determined that the action being taken is appropriate when balanced against the availability of Trust Fund monies for use at other sites.

5/13/86
Date

James M. Seif
Regional Administrator
EPA Region III

DRAKE CHEMICAL SITE
(PHASE II)

LOCK HAVEN, PENNSYLVANIA

SUPERFUND
RECORD OF DECISION

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III
PHILADELPHIA, PA

William A. Hagel
Remedial Project Manager
April, 1986

CONTENTS

Summary of Remedial Alternative Selection

Drake Chemical (Phase II)

1. Site Background Information:

The Drake Chemical Site is located in Lock Haven, Clinton County, Pennsylvania. The Drake Chemical Site is bounded on the west by the American Color and Chemical Company. An apartment complex, a shopping center, and Castanea Township Park are located within 1/4 mile of the site. Bald Eagle Creek is located less than 1/2 mile south of the site, and the West Branch of the Susquehanna River is located approximately 3/4 mile north of the site. A leachate stream originates at the leachate lagoon and flows through Castanea Township to Bald Eagle Creek.

The eight-acre site, shown on Figure 1, is inactive and contains six major buildings, including former offices, production facilities, and a wastewater treatment building. Inside and surrounding the process buildings are approximately 60 process tanks and reactors. Outside these buildings are approximately 10 large tanks that were used for bulk storage of acids, bases and fuel oils. Also located on site are two lined wastewater treatment lagoons, an unlined lagoon (leachate lagoon) from which a leachate stream originates, a second small unlined lagoon (canal lagoon), and an unlined sludge lagoon. Chemical sludge and contaminated soil covers or underlies much of the open area on site and was detected as deep as 20 feet below the ground surface. Drums and bulk waste may also be buried at the site. Construction debris is strewn about the site.

Drake Chemical, Inc., purchased the site in 1962. Site use before 1962 is not completely known, but it is reported that the site was used for the production of chemicals. Aerial photographs show that tanks, buildings, and a lagoon were located on the site between 1951 and 1959.

The early production history at Drake Chemical, Inc., is unclear, but the facility had been involved for many years in the manufacture of batches of specialty, intermediate chemicals for producers of dyes, pharmaceuticals, cosmetics, herbicides, and pesticides. The organic compound, 2,3,6-trichlorophenylacetic acid (Fenac), a herbicide manufactured at the plant, is a major site contaminant. The chemical products were produced using the processes of chlorination, cyanation, sulfonation, and amination. Most processes at Drake Chemical, Inc., were not highly automated and required hand charging of chemicals into reactor vessels. Many waste streams produced during the various manufacturing processes were either treated or placed directly in drums and stored on site. Much of the former lagoon area onsite was filled with treated and untreated process wastes and sludges, along with demolition debris and other miscellaneous fill materials.

Drake Chemical, Inc., was cited several time between 1973 and 1982 for violations of environmental and health and safety regulations. After Drake Chemical, Inc., failed to respond to a request for voluntary cleanup, the United States Environmental Protection Agency (EPA), began emergency

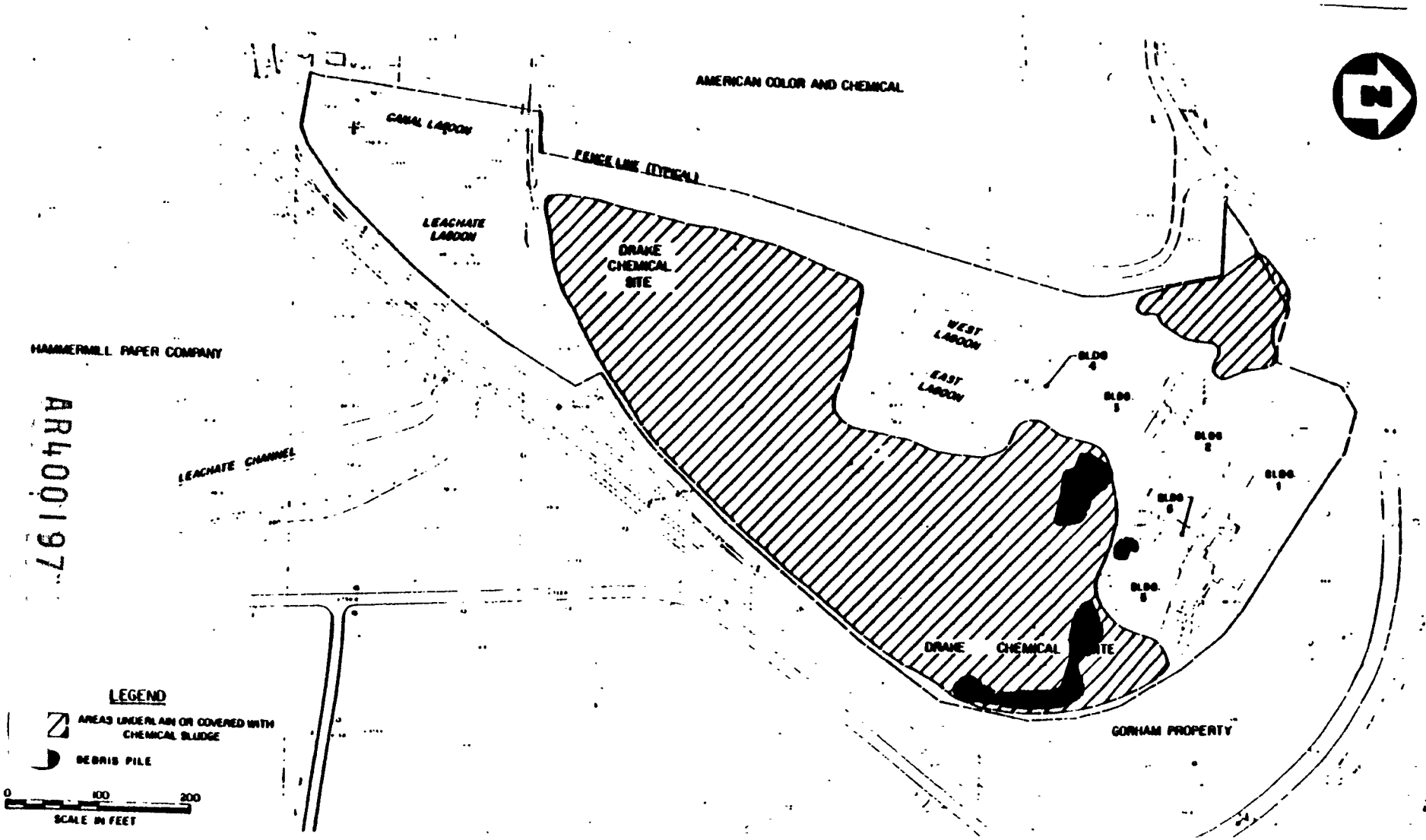


FIGURE 1

GENERAL ARRANGEMENT
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

cleanup activities at the site on February 28, 1982. During the emergency cleanup, surface drums and sludges and liquids from process and storage tanks were removed from the site. A fence was also erected around the site. The cleanup was completed on April 21, 1982. The Environmental Response team (ERT) of EPA performed an Extent of Contamination (EOC) Study in March, 1982, which focused on the area around the leachate stream. The results of this study were summarized in the Phase I Record of Decision (September 30, 1984).

In August, 1982, the EPA initiated remedial action studies at the Drake Chemical site. A Phase I (leachate stream) Remedial Investigation Report was completed in August, 1984. A draft RI report on the remainder of the site was released in April, 1985, while the Phase II (Buildings and Structures) Feasiblity Study Report was completed in March, 1986.

2. Nature and Extent of Problems

2a: Buildings, Tanks, and Debris:

Samples from buildings, process equipment and indoor and outdoor tanks were collected during October, 1983 to determine the chemical compounds contained in and about the buildings at the Drake Chemical Site. Sampling points for the building samples included tanks, drippings on floors and soil, rafters, sweepings, decomposed bags, ovens, centrifuges, baths, open drums, filter presses, drains, and outdoor debris.

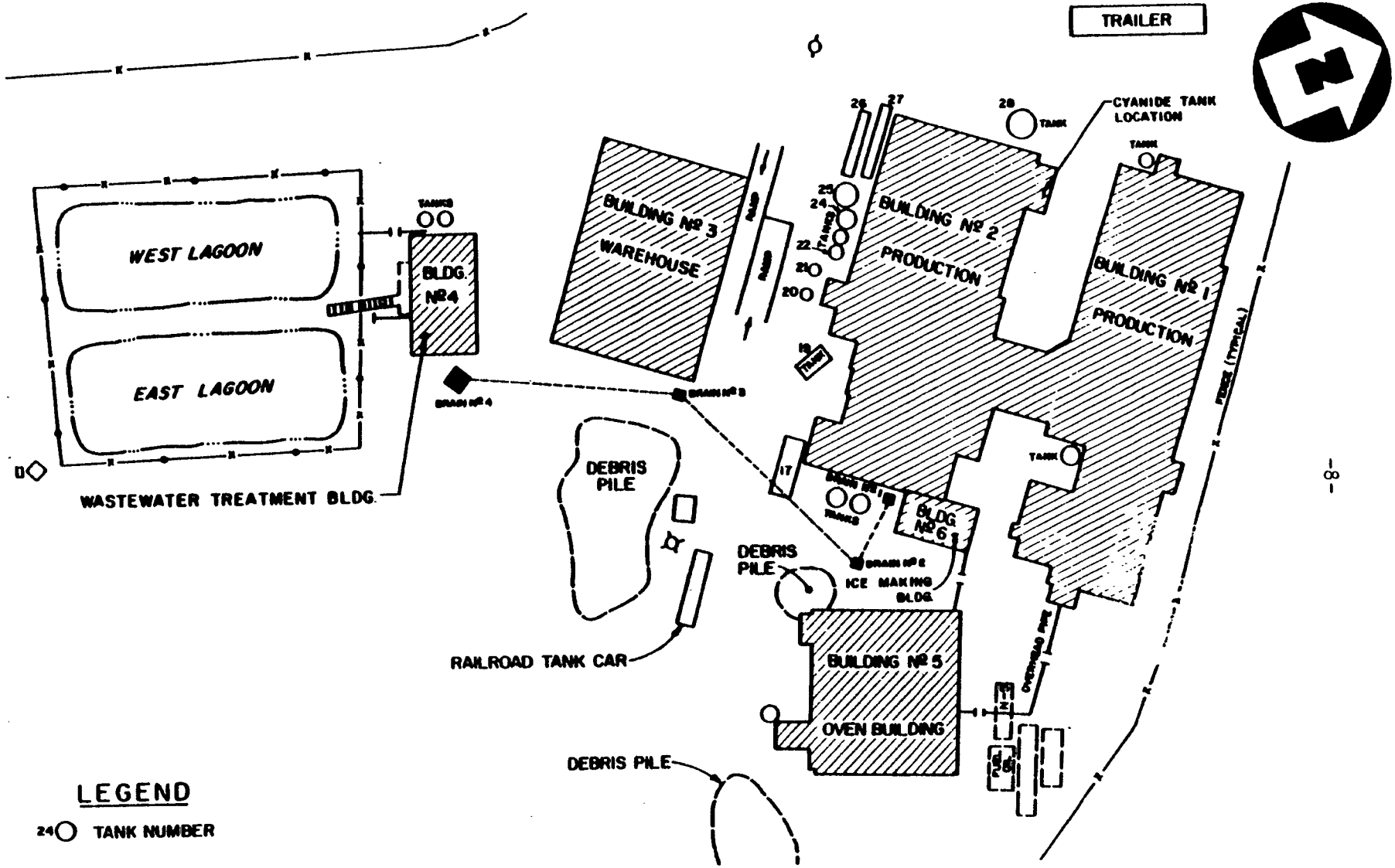
Figure 2 shows building locations on site. Figure 3 shows the layout of Building 1. Figures 4 and 5 show the first and second floors of Building 2. Figures 6 and 7 show layouts of Building 3 and 4 respectively.

Analysis for the building samples included the organics on the Hazardous Substances List (HSL), Fenac, Total Organic Halogens (TOH), and beta-naphthylamine. Fenac was detected in all but four of the samples analyzed for the compound. Beta-naphthylamine was detected only in Building 1. These samples were collected from ovens, the top of Tank 1-1, Tank 1-2, and a filter press.

Building samples and analysis for the indicator compounds show contamination in a concentration range of <0.1-460,000 ug/g of Fenac (2,4,6 trichlorophenyl acetic acid), 30-232,000 ug/g of TOH and No Detection - 3,800 ug/g of beta-naphthylamine.

A wide range of organic compounds was detected during the investigation at concentrations which varied from part-per-billion to percent levels. Compounds with the highest concentrations were detected mostly in samples from Buildings 1 and 2 and in debris samples from outside the buildings.

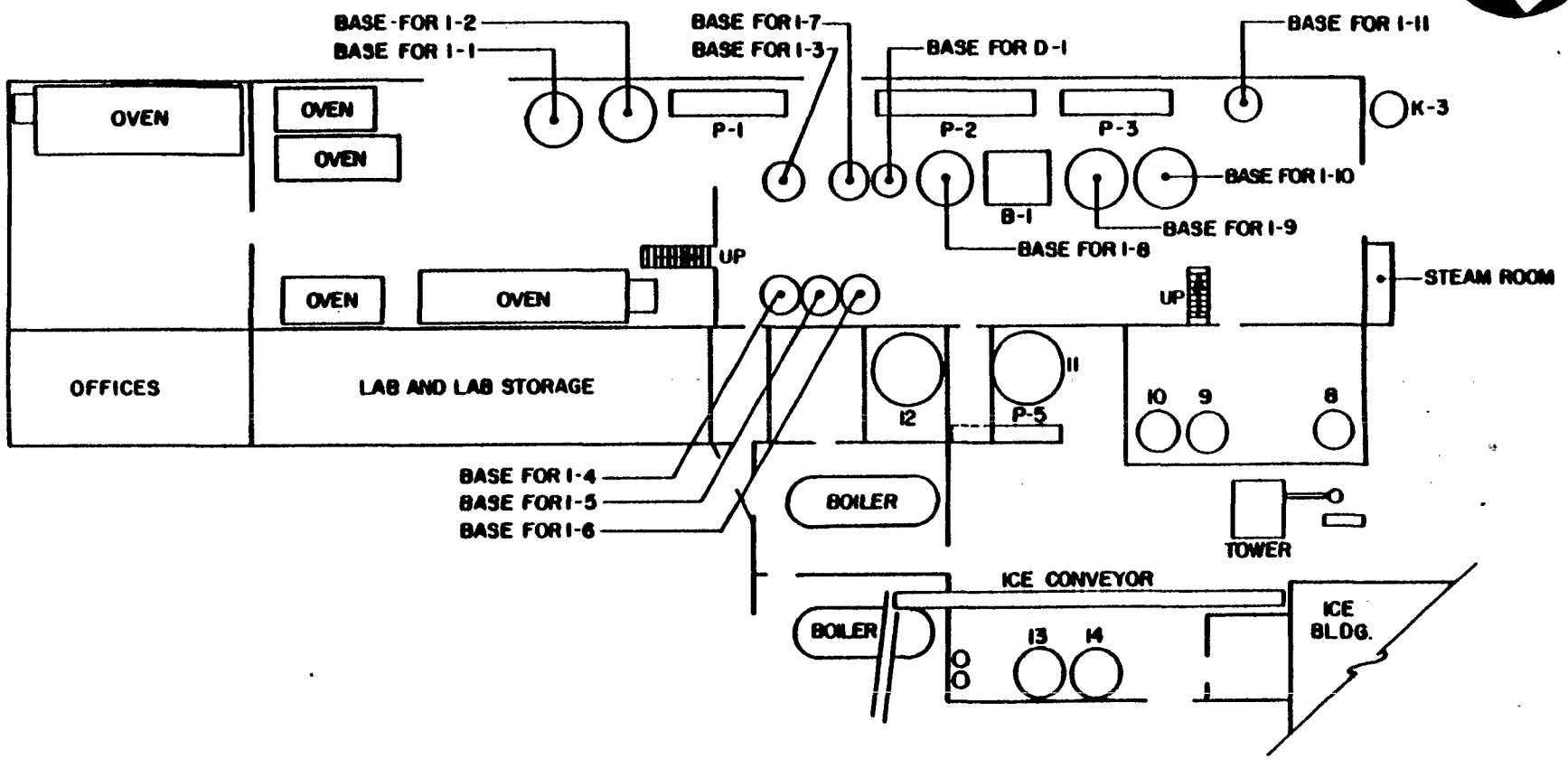
The compounds detected are listed on Tables 1 and 2.



BUILDING LOCATIONS
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

SCALE: 1" = 60'

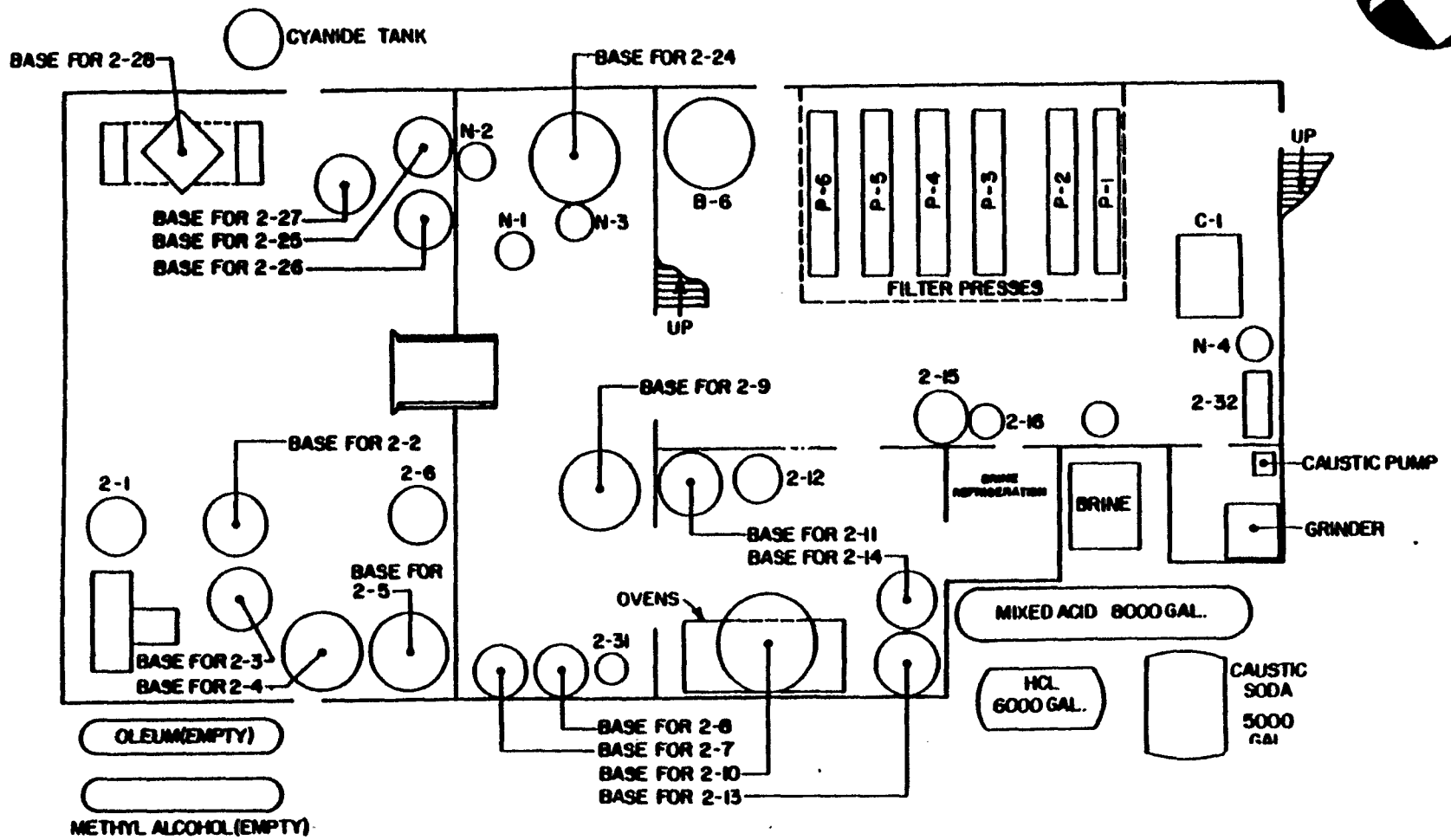
FIGURE 2



GENERAL ARRANGEMENT
BUILDING Nº 1
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

NOT TO SCALE

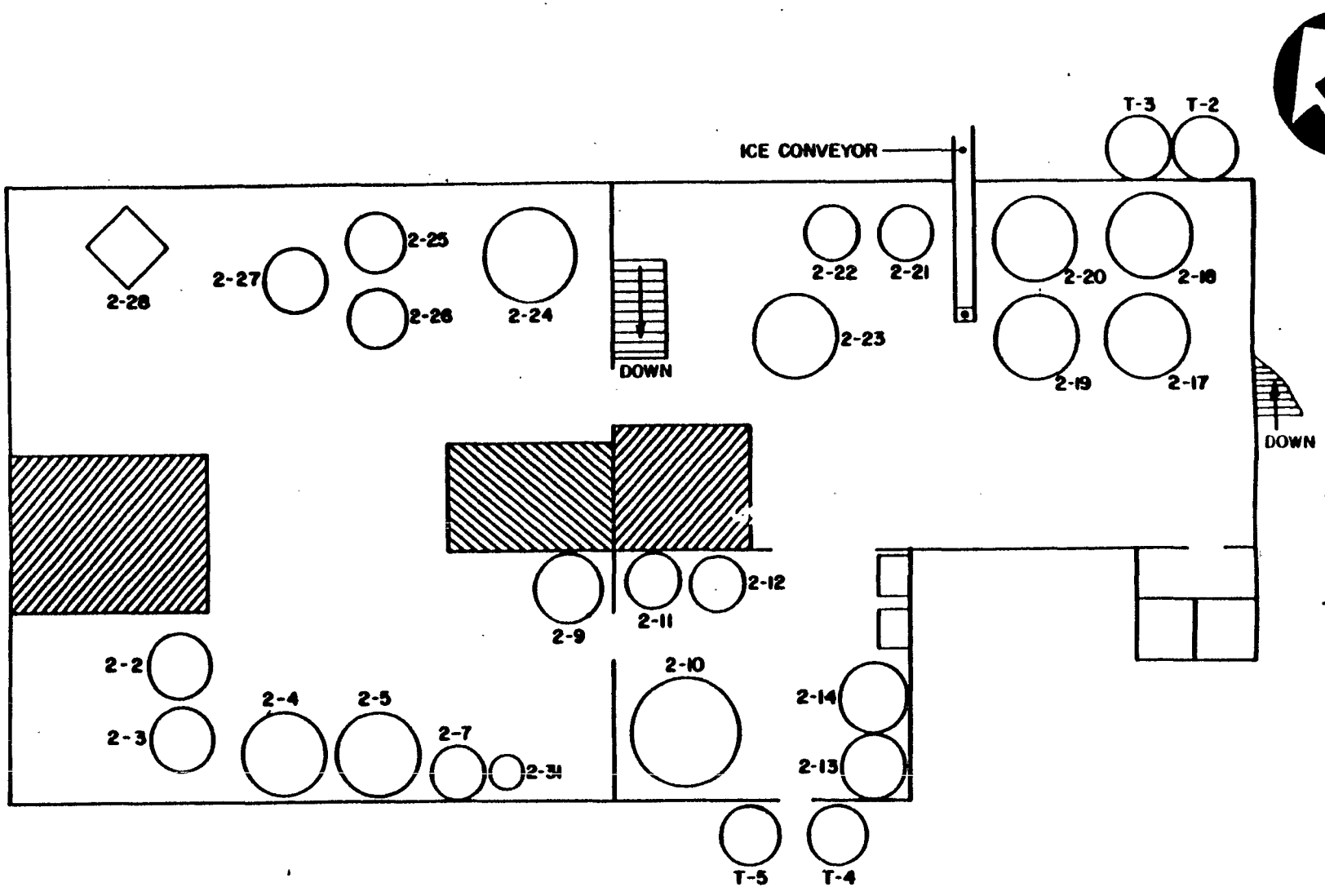
FIGURE 3



GENERAL ARRANGEMENT
BUILDING Nº2 - FIRST FLOOR
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

NOT TO SCALE

FIGURE 4



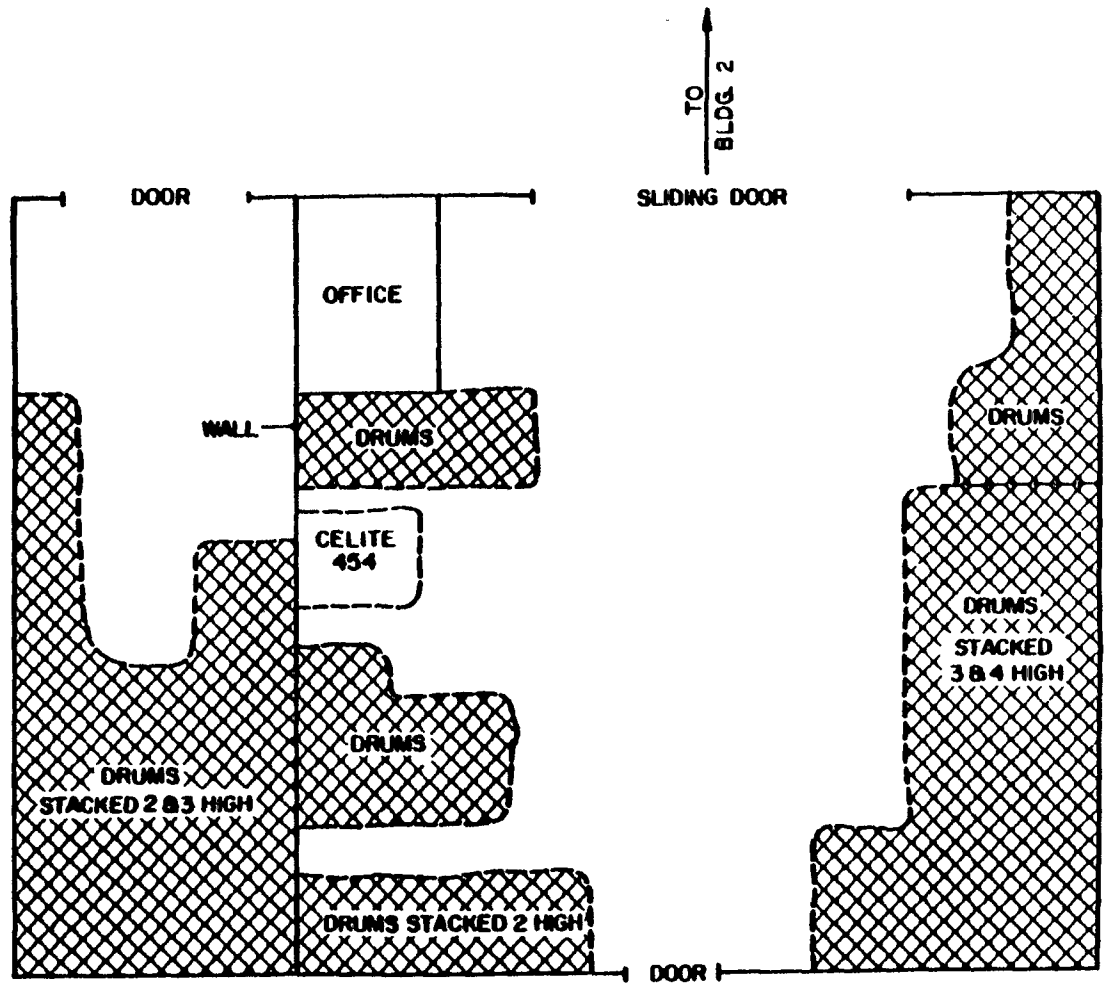
GENERAL ARRANGEMENT

BUILDING Nº 2 - SECOND FLOOR

DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

NOT TO SCALE

FIGURE 5



GENERAL ARRANGEMENT
BUILDING Nº 3 - WAREHOUSE
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA
NOT TO SCALE

FIGURE 6

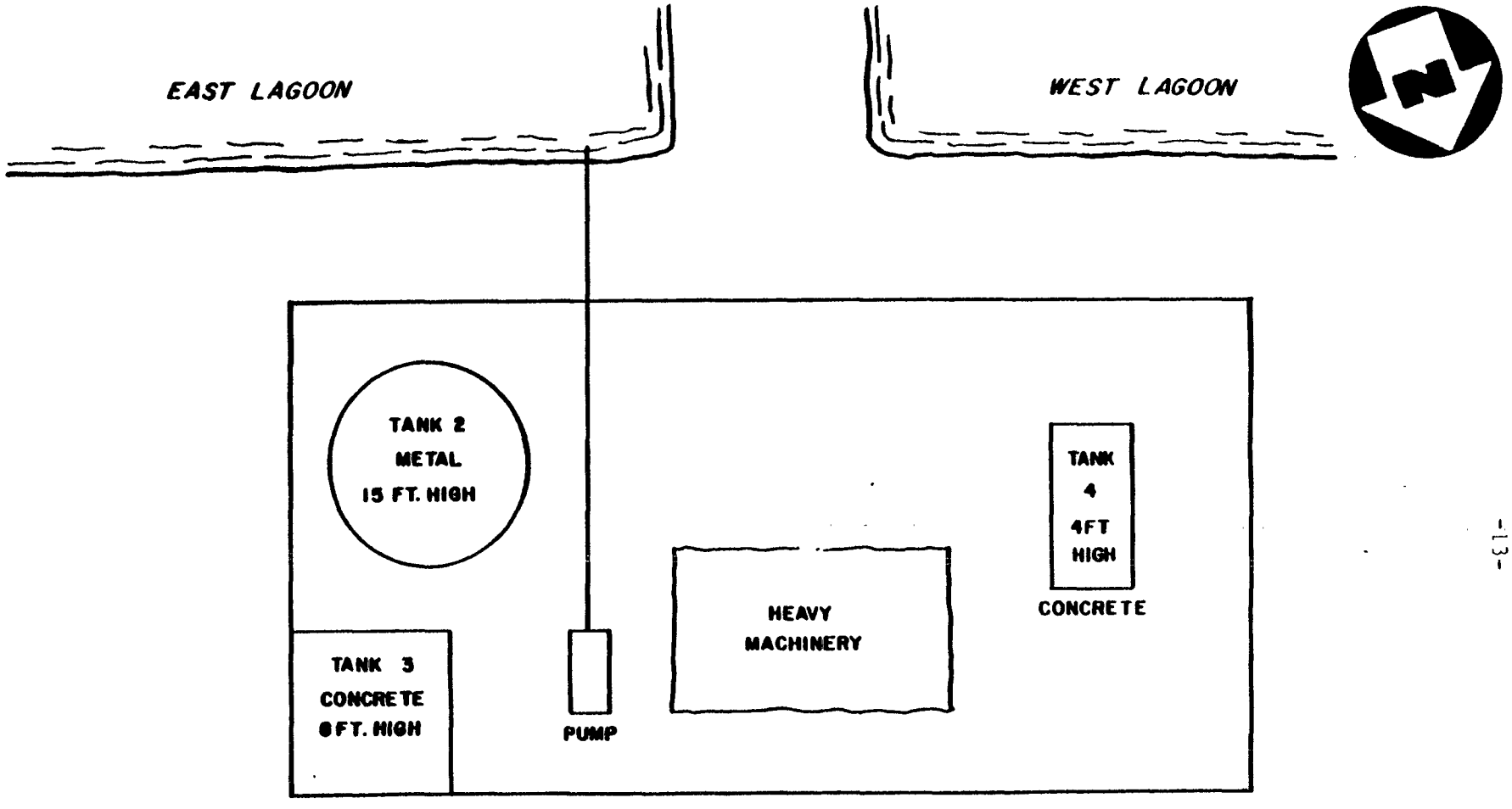


FIGURE 7

GENERAL ARRANGEMENT
BUILDING Nº 4 – TREATMENT BUILDING
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA
NOT TO SCALE

TABLE 1

BUILDING SAMPLES
MAXIMUM CONCENTRATIONS OF BASE/NEUTRAL EXTRACTABLE ORGANICS (µg/g)
DRAKE CHEMICAL SITE

Parameter	Maximum Concentration	Building Number
Anthracene	<2Q	1
Benzo(a)anthracene	42,000Q	1
Benzo(a)pyrene	6.5Q	1
Benzo(b)fluoranthene	14Q	1
Benzo(ghi)perylene	<5Q	1
Benzo(k)fluoranthene	14Q	1
Bis(2-ethylhexyl) phthalate	78	2
Butyl benzyl phthalate	9.9	2
Chrysene	25Q	2
1,2-Dichlorobenzene	22,000Q	1
1,3-Dichlorobenzene	27,000Q	2
1,4-Dichlorobenzene	48Q	1
Dimethyl phthalate	23Q	1
Di-n-butyl phthalate	<600Q	outside
Di-n-octyl phthalate	<2	2
1,2-Diphenylhydrazine	<4	2
Fluoranthene	11Q	1
Hexachlorobenzene	1,381	outside
Hexachlorobutadiene	120Q	outside
Hexachlorocyclopentadiene	110,000Q	2
Hexachloroethane	<2	outside
Indeno(1,2,3-cd) pyrene	<5Q	1
Isophorone	64Q	outside
Naphthalene	2,000Q	outside
Nitrobenzene	1.5Q	2
Phenanthrene	850Q	outside
Pyrene	8.4Q	1
1,2,4-Trichlorobenzene	2,705	outside
Aniline	61Q	5
4-Chloroaniline	29,504	2
2-Methylnaphthalene	4,500Q	outside

µg/g: micrograms per gram
Q: questionable analysis based on results of data validation
<: less than
outside: outside tank, exterior of building, or debris surrounding building

TABLE 2

BUILDING SAMPLES
MAXIMUM CONCENTRATIONS OF ACID EXTRACTABLE, VOLATILE, AND PESTICIDE ORGANICS (µg/g)
DRAKE CHEMICAL SITE

Parameter	Maximum Concentration	Building Number
2-Chlorophenol	0.32Q	2
2,4-Dimethylphenol	430,000Q	outside
Phenol	<10,000Q	outside
Benzoic acid	300,000Q	1
2-Methylphenol	<10,000Q	outside
Benzene	<2,500Q	2
Chlorobenzene	32,130	outside
Chloroform	<2,500Q	2
Ethyl benzene	<2,500Q	2
Methyl chloride	35Q	outside
Methylene chloride	7,440Q	outside
1,1,2,2-Tetrachloroethane	<0.005	2
Tetrachloroethylene	33Q	outside
Toluene	<2,500Q	2
1,1,1-Trichloroethane	0.009	4
Trichloroethylene	0.029	2
Trichlorofluoromethane	<5,000Q	2
Acetone	0.97	4
2-Hexanone	0.031	2
4-Methyl-2-pentanone	0.024	2
Xylenes (total)	<2,500Q	2
beta-BHC	190Q	2
gamma-BHC	62Q	2
delta-BHC	140Q	2
4,4'-DDT	200Q	outside
4,4'-DDE	5.1Q	outside
4,4'-DDD	100Q	outside
Dieldrin	3.3Q	outside
alpha-Endosulfan	67Q	2
beta-Endosulfan	5.3Q	outside
PCB-1254	11Q	2

µg/g: micrograms per gram
<: less than
Q: questionable analysis based on results of data validation
outside: outside tank, exterior of building, or debris surrounding building

Organic compounds detected in 10 or more samples are listed below. The number of times detected is in parentheses:

- Chlorobenzene (26)
- Bis(2-ethylhexl)phthalate (20)
- Toluene (19)
- Methylene chloride (17)
- Benzo(a)anthracene (16)
- Acetone (14)
- Benzoic acid (13)
- Benzene (13)
- Trichloroethylene (13)
- 1,3-Dichlorobenzene (12)
- Chloroform (10)
- Ethyl benzene (10)
- Total xylenes (10)

The cyanide tank beside Building 2 (see Figure 4) was not sampled. The material in the tank was thought to be a solid; the level in the tank was estimated by tapping the side of the tank. The difficulty in obtaining a sample of the material inside the tank and the danger of opening a sealed cyanide tank to the atmosphere led the samplers to conclude that it would be unsafe to open the tank. A former employee stated that the tank contained cyanide salts.

2b: Lined Lagoons:

The two lined wastewater treatment lagoons located near the center of the site were sampled during August, 1983.

Lagoon surface water samples were analyzed for the organics and inorganics on the HSL, Fenac, TOH, TOC, sulfate, chloride, ammonia, pH, and conductivity. Lagoon sediment samples were analyzed for the organics and inorganics on the HSL and Fenac.

The surface water and sediment analysis for these lagoons are summarized in Tables 3,4,5 and 6.

Based on the chemical analyses, it appears that water and sediment in the lined lagoons are contaminated with metals, Fenac, and other organic compounds. The waters are also acidic with pH values of 2.3 and 2.4.

The integrity of the liners is not known. A leak in a liner could cause contaminants to migrate to soil beneath the lagoons, then to ground water, or could cause migration as a seep from the banks of the lagoon. A large amount of rainfall could cause the lagoons to overflow. Bald Eagle Creek could flood to an extent that would inundate the lagoons. The site is in the 100-year floodplain. Flooding could cause contaminants to migrate to surface water, sediment, soil, and/or ground water. Contaminant migration to the air was not evidenced during the investigation.

The estimated total volume of liquid and sediments in the two lagoons is 192,000 gallons.

TABLE 3

LINED LAGOONS - AQUEOUS PHASE DATA
CONCENTRATION RANGES OF INORGANIC AND INDICATOR PARAMETERS
DRAKE CHEMICAL SITE

Parameter	On Site	Field Blanks
Aluminum	6,000 - 6,810	<100
Antimony	<20 - 118	<20
Cadmium	4.2 - 7.0	5.8
Chloride	776,000 - 1,170,000	<1,000
Chromium	39 - 120	<10
Conductivity	5,600 - 6,400	<5,000
Copper	679 - 1,130	<50
Cyanide	17 - 53	25
Iron	20,800 - 25,500	<50
Lead	26 - 38	<5
Manganese	505 - 591	<10
Mercury	0.7 - 1.1	0.3
Nickel	60 - 122	<40
pH	2.3 - 2.4	NA
Sulfate	850,000 - 1,000,000	<5,000
Zinc	398 C - 429 C	32 C
Fenac	13,100Q - 15,275Q	ND
TOH	48,560 - 55,900	ND
TOC	3,000 - 255,000	<1,000

All analyses expressed in ug/l (micrograms per liter) except conductivity (umhos/cm) and ph (units).

<: less than
C: corrected for lab blank
Q: questionable data based on data validation
NA: not analyzed
TOH: total organic halogen
TOC: total organic carbon

TABLE 4

LINED LAGOONS - AQUEOUS PHASE DATA
CONCENTRATION RANGES OF ORGANICS
DRAKE CHEMICAL SITE

Parameter	On Site	Field Blanks
Acenaphthene	ND - <4Q	ND
Benzo(a)anthracene	ND - <1Q	ND
Benzo(a)pyrene	ND - <1Q	ND
Bis(2-ethylhexyl)phthalate	ND - <1Q	ND - 10.3
Di-n-butyl phthalate	ND	ND - 13.4
Di-n-octyl phthatate	ND	ND - 1.5
Naphthalene	ND - 80Q	ND
Phenanthrene	ND - <3Q	ND
Pyrene	ND - <2Q	ND
Benzyl alcohol	ND - <4Q	ND
4-Chloroaniline	ND - <10Q	ND
2,4-Dimethylphenol	30Q - 946	ND
Pentachlorophenol	ND - <3Q	ND
Phenol	ND - 155C	ND - 8.2
Benzoic acid	ND - <40Q	ND
2-Methylphenol	ND - <2Q	ND
4-Methylphenol	ND - 10Q	ND
2,4,5-Trichlorophenol	ND - <25Q	ND
Chlorobenzene	13 - 120	ND
Ethyl benzene	ND - 0.8	ND
Methylene chloride	ND - 57	ND
Toluene	ND - 25	ND
Acetone	1 - 180	ND
Carbon disulfide	ND - 10	ND

All analyses expressed in µg/l (micrograms per liter).

ND: not detected
<: less than
Q: questionable concentration based on data validation
C: corrected for lab blank

TABLE 5

LINED LAGOONS - SEDIMENT DATA
CONCENTRATION RANGES OF INORGANICS
DRAKE CHEMICAL SITE

Parameter	On Site
Aluminum	875 - 2,190
Arsenic	1.6 - 2.5
Barium	17.9 - 36.8
Beryllium	<0.25 - 0.3
Cadmium	0.34 - 1.0
Chromium	6.6 - 7.8
Copper	189 - 218
Cyanide	219 - 300
Iron	2,900 - 4,540
Lead	4.8 - 6.3
Manganese	12 - 29.1
Mercury	0.7 - 0.85
Nickel	5.3 - 11.4
Selenium	0.1
Tin	<1 - 4.4
Zinc	8.8C - 16C

All analyses expressed in mg/kg (milligrams per kilogram)

<: less than

C: corrected for lab blank

TABLE 6

LINED LAGOONS - SEDIMENT DATA
CONCENTRATION RANGES OF ORGANICS
DRAKE CHEMICAL SITE

Parameter	Onsite
Benzo(a)anthracene	ND - 105,000Q
Benzo(a)pyrene	ND - 250
Benzo(b)fluoranthene	ND - 450
Benzo(ghi)perylene	ND - 100
Benzo(k)fluoranthene	ND - 340
Butyl benzyl phthalate	ND - 110
Chrysene	ND - 270
1,4-Dichlorobenzene	ND - 70,000Q
Fluoranthene	ND - 360
Hexachlorobutadiene	ND - 120,000Q
Hexachlorocyclopentadiene	ND - 350,000Q
Phenanthrene	ND - 160
Pyrene	ND - 290
1,2,4-Trichlorobenzene	ND - 71,000Q
Benzene	ND - 600
Carbon tetrachloride	ND - 800
Chlorobenzene	90,000 - 5,000,000
2-Chloroethylvinyl ether	ND - 21,000
Chloroform	ND - 9,400
Ethyl benzene	8,000 - 100,000
Methylene chloride	3,000 - 6,000
Tetrachloroethylene	3,000 - 8,000
Toluene	ND - 4,500
Acetone	ND - 13,000
o-Xylene	64,000 - 1,000,000
Dieldrin	ND - 2,400
Fenac	1.04 - 3,156Q

All analyses expressed in µg/kg (micrograms per kilogram)

Q: questionable analysis based on data validation
ND: not detected

3: Health and Environmental Concerns:

Present impacts of the lined lagoons are negligible, except from direct contact. Potential impacts could arise in the event of flood, lagoon overflow, or liner failure.

Of greater importance is the widespread building contamination. The greatest risks to human health are associated with direct contact with the contaminants, many of which are highly toxic or carcinogenic. Beta-naphthylamine is a potent human bladder carcinogen which has been detected at high levels in Building 1. This compound has been the focus of a health screening being performed in the Lock Haven Area by the Pennsylvania Department of Health, Division of Environmental Epidemiology.

The buildings are presently in a dilapidated condition and continue to deteriorate, causing a hazard from collapse. A fire could cause contaminants to be released to the air. A flood could wash away contaminants present in the buildings, debris piles, and contaminated structures.

There has also been recent evidence of trespass at the site even though the site is fenced and the gates are locked. A portion of the fence has been cut out and a hole large enough for human entry is present.

The objective of remedial action for Phase II at the Drake Chemical Site is to reduce or eliminate exposure pathways by which building contaminants may reach potential receptors. The exposure pathways of most concern are as follows:

- Direct contact with contaminated areas on site
- Potential migration of contamination via fire or flood

General response actions and associated remedial technologies have to be developed to meet the stated objectives.

4: Screening of Remedial Action Technologies:

Feasible remedial technologies for the buildings at the Drake Chemical Site have been identified by screening general response actions for application to site problems caused by the buildings and contaminated structures and by evaluating site-specific information obtained for the buildings during the Remedial Investigation (RI). Each general response action consists of one or more associated technologies that are also considered for applicability. The Drake Chemical Site general response actions and associated technologies for the buildings and contaminated structures are presented in Table 7.

The technologies were then studied and reviewed in depth using the following criteria:

- Technical
- Environmental/Public Health
- Institutional
- Cost

TABLE 7

PHASE II - BUILDINGS AND CONTAMINATED STRUCTURES
PRELIMINARY SCREENING OF TECHNOLOGIES
DRAKE CHEMICAL SITE

General Response Actions and Associated Remedial Technologies	Applicable	Excluded	Comments
1. No Action	•		Retained to meet the requirements of the National Contingency Plan (NCP).
2. Capping		•	Not applicable because of site characteristics (insufficient space on site).
3. Pumping	•		Applicable for the lined wastewater treatment lagoons.
4. Collection			
a. Sedimentation Basins	•		a. Applicable to new landfill.
b. Gas Vents		•	b. Not applicable to site conditions.
c. Gas Collection System		•	c. Not applicable to site conditions.
5. Diversion			
a. Grading and Revegetation	•		a. Applicable for general site improvement.
b. Dikes and Levees	•		b. Applicable for flood protection.
c. Diversion Ditches, Trenches	•		c. Applicable for surface water control for landfill.
d. Benches, Chutes	•		d. Applicable for surface water control for landfill.
6. Complete Removal	•		Tanks, buildings, debris, and the lined lagoons can be completely removed from the site.

TABLE 7 (cont.)
PHASE II - BUILDINGS AND CONTAMINATED STRUCTURES
PRELIMINARY SCREENING OF TECHNOLOGIES
DRAKE CHEMICAL SITE

General Response Actions and Associated Remedial Technologies	Applicable	Excluded	Comments
7. Partial Removal (Same as General Response Action 6)			Applicable only if site characteristics preclude complete removal.
8. Onsite and Offsite Treatment			
a. Incineration	•		a. Applicable for some waste material.
b. Solidification		•	b. Not applicable because of site and waste characteristics.
c. Land Treatment		•	c. Not applicable because of site and waste characteristics.
d. Biological Treatment (On site)		•	d. Not applicable because of waste characteristics.
e. Physical/Chemical Treatment (On site)		•	e. Not applicable because of waste characteristics.
9. Storage	•		Temporary storage during construction only.
10. Offsite Disposal	•		Applicable to this site using a commercial facility or a newly constructed landfill nearby.
11. Onsite Disposal		•	Not applicable because of site characteristics.
12. Relocation		•	Not applicable to this site.

Feasible remedial technologies that remained after this screening process were then combined into Remedial Action Alternatives that can be applied to the remediation of the buildings and contaminated structures at the Drake Chemical Site.

5: Remedial Action Alternatives:

Various remedial action alternatives were developed by assembling appropriate remedial technologies into groups of actions to address the objectives of the remedial action. The development of remedial action alternatives to remove the contaminated buildings and structures onsite is consistant with the various categories of cleanup as required by the NCP, Section 300.68. However, some of these categories may not be filled since the only practical alternatives, except no action, must be designed to meet RCRA requirements (i.e. transportation and ultimate disposal).

The referenced categories are as follows:

- I - Alternatives for treatment or disposal at an offsite facility approved by EPA.
- II - Alternatives that attain applicable or relevant and appropriate Federal public health or environmental standards.
- III - Alternatives that exceed applicable or relevant and appropriate public health or environmental standards.
- IV - Alternatives that reduce the likelihood of present or future threat and meet CERCLA objectives of adequately protecting public health, welfare, and the environment.
- V - No action alternative.

In addition, the remedial action alternatives must be further defined as a source control remedy, or a management of migration remedy, as required in the NCP (40 CFR 300.68 (d)).

Alternatives that include provisions for flood protection assume that flood protection measures for Lock Haven proposed by the U.S. Army Corps of Engineers (USACOE) will not be implemented before remedial action takes place at the Drake Chemical Site.

5a: Alternative 1 - Tank, Building, Debris, and Lined Lagoon Removal with Offsite Disposal at a RCRA-Approved Facility:

The purpose of this alternative is to dismantle all structures for offsite disposal. Included are the following tasks:

- Draining and removal of the two lined wastewater treatment lagoons, with offsite treatment of liquid and sludge in a RCRA-approved treatment facility.

- Removal of tanks, buildings, and debris.
- Incineration of chemicals stored in warehouse.
- Disposal of all other materials, without decontamination, in an offsite, RCRA-approved landfill.

Remedial Action Alternative 1 is classified as a source control remedy. This alternative calls for the dismantling of all buildings in a controlled fashion. Tanks, debris, and the lined lagoons would also be removed.

All dismantled buildings, tanks, etc., will be loaded onto trucks, without decontamination, and hauled to the nearest offsite, RCRA-approved landfill for disposal. Liquid wastes will be hauled away for appropriate treatment or disposal. Precautions would be taken to minimize any release of contaminants during transport.

This alternative's baseline capital cost is $3,632,000. There are no operation and maintainence costs anticipated.

5b: Alternative 2 - Tank, Building, Debris, and Lined Lagoon Removal, Decontamination, and Offsite Disposal:

The purpose of this alternative is to dismantle all structures, decontaminate salvageable material (metals), dispose of all other structures in an offsite RCRA-approved landfill. Included are the following tasks:

- Draining and removal of the two lined wastewater treatment lagoons with offsite treatment of liquid and sludge in a RCRA-approved treatment facility.
- Removal of tanks, buildings, and debris.
- Incineration of chemicals stored in warehouse.
- Decontamination of salvageable material (metals, steel structures, etc.)
- Disposal of decontamination fluids and other liquid wastes.
- Disposal of all materials, other than decontaminated metals, in a RCRA-approved landfill.

Remedial Action Alternative 2 is classified as a source control remedy. This alternative calls for the dismantling of all buildings in a controlled fashion. Tanks, debris, and the lined lagoons would also be removed. Salvageable materials (metals) would be cleaned and decontaminated, as required, prior to being turned over to the contractor. All other material or structures would be loaded onto trucks and hauled to an offsite, RCRA-approved facility. This alternative's baseline capital cost is $3,143,000. There are no operation and maintenance costs anticipated.

5c: Alternative 3 - Tank, Building, Debris, and Lined Lagoon Removal with Offsite Disposal Dependent on the Amount of Contamination:

The purpose of this alternative is to dismantle all structures, separate contaminated and uncontaminated materials based on wipe sampling, dispose of all contaminated materials in an offsite, RCRA-approved landfill, and dispose of all uncontaminated material in an offsite demolition

waste landfill or other approved offsite facility. Included are the following tasks:

- Draining and removal of the two lined wastewater treatment lagoons with offsite treatment of liquid and sludge in a RCRA-approved treatment facility.
- Incineration of chemicals stored in warehouse.
- Sampling of the tanks, buildings, and debris to determine which materials are contaminated and which materials are not contaminated.
- Removal of tanks, buildings, and debris.
- Disposal of contaminated materials in an offsite, RCRA-approved landfill.
- Disposal of non-contaminated materials in an offsite, demolition waste landfill or other approved offsite facility.

Remedial Action Alternative 3 is classified as a source control remedy. This alternative calls for the dismantling of all buildings in a controlled fashion. Tanks, debris, and the lined lagoons will also be removed. All materials will be loaded onto trucks and hauled to an appropriate offsite facility according to the amount of contamination present on the various materials involved with this operable unit. This alternative's baseline capital cost is $3,488,000. There are no operation and maintenance costs anticipated.

5d: Alternative 4 - Tanks, Building, Debris, and Line Lagoon Removal; Offsite Disposal in a New Landfill Constructed Adjacent to the Site:

The purpose of this alternative is to dismantle all structures, construct a new RCRA-designed landfill adjacent to the site, and dispose of all materials in this landfill. Lagoon waste and chemicals in the warehouse would be treated offsite.

The following tasks will be implemented as part of this alternative:

- Draining and removal of the two lined wastewater treatment lagoons with offsite treatment of liquid and sludge in a RCRA-approved treatment facility.
- Incineration of chemicals stored in warehouse.
- Construction of a flood protection dike to protect against a 100-year flood.
- Construction of a double liner landfill within the area protected by the flood dike.
- Removal of tanks, buildings, and debris with disposal in the newly constructed landfill.
- Capping, grading, and revegetation of the landfill and adjacent areas.
- Performance of post closure monitoring.

Remedial Action 4 is classified as a source control remedy. This alternative calls for dismantling of all buildings in a controlled fashion. Tanks, debris, and the lined lagoons would also be removed. A landfill would be constructed on property located between the railroad tracks and the Route 220 embankment.

This alternative requires the construction of a levee to protect the landfill from potential floods. This compacted, earthen levee would be covered with vegetation and rip-rap as floodwater velocity protection measures. The elevation of the flood protection dike would be 565.5 MSL and would be based on the USACOE 100-year flood stage developed for the proposed Lock Haven Flood Control Project.

The first step would be the construction of the flood protection dike since this area is prone to flooding. A RCRA-style, double-liner landfill would then be constructed within the flood protection dike (see figure 8). the buildings and contaminated structures are dismantled, they would be graded and capped with a multimedia cap. The impervious zones of the cap and the liner would be connected to encapsulate the waste. The area would then be revegetated.

Leachate generation from the new landfill is expected to be minimal because of the nature of the wastes (dismantled building materials). Any leachate that is generated would be collected and hauled away for appropriate treatment or disposal.

The area required for the construction of the flood protection dike and the landfill will require the purchase of land adjacent to the site. This property is in Castanea Township in the Clinton County Renewal Area. This area is the former residential area where the housing was removed when the area was dedicated as a corridor for Route 220. This option's baseline capital cost is $2,894,000. The operation and maintenance cost for this alternative is estimated to be $41,000 annually.

5e: Alternative 5 - No Action:

Remedial Action Alternative 5 involves taking no remedial action to remove tanks, buildings, debris, or the lined lagoons. The buildings and tanks would continue to deteriorate, presenting a hazard from collapse. The direct contact risk and the possibility of contaminant migration by airborne particulates would remain. Contaminants present in the buildings and contaminated structures could migrate during a fire or a flood causing potential exposure to downstream or downwind receptors.

6: Recommended Alternative:

Section 300.68 (i) of the NCP states that the appropriate extent of remedy shall be determined by the lead agency's selection of a remedial alternative which the agency determines is cost-effective and which effectively mitigates or minimizes damage to and provides adequate protection of the public health, welfare and the environment. In selecting a remedial alternative EPA considers all environmental laws that are applicable or relevant and appropriate. Based on the evaluation of cost-effectiveness of each of the proposed alternatives, the comments received from the public, information from the Feasibility Study and recommendations from the Pennsylvania Department of Environmental Resources, we recommend that Alternative No. 2 as described above, be designed and implemented as Phase II of the Drake Chemical Superfund Project.

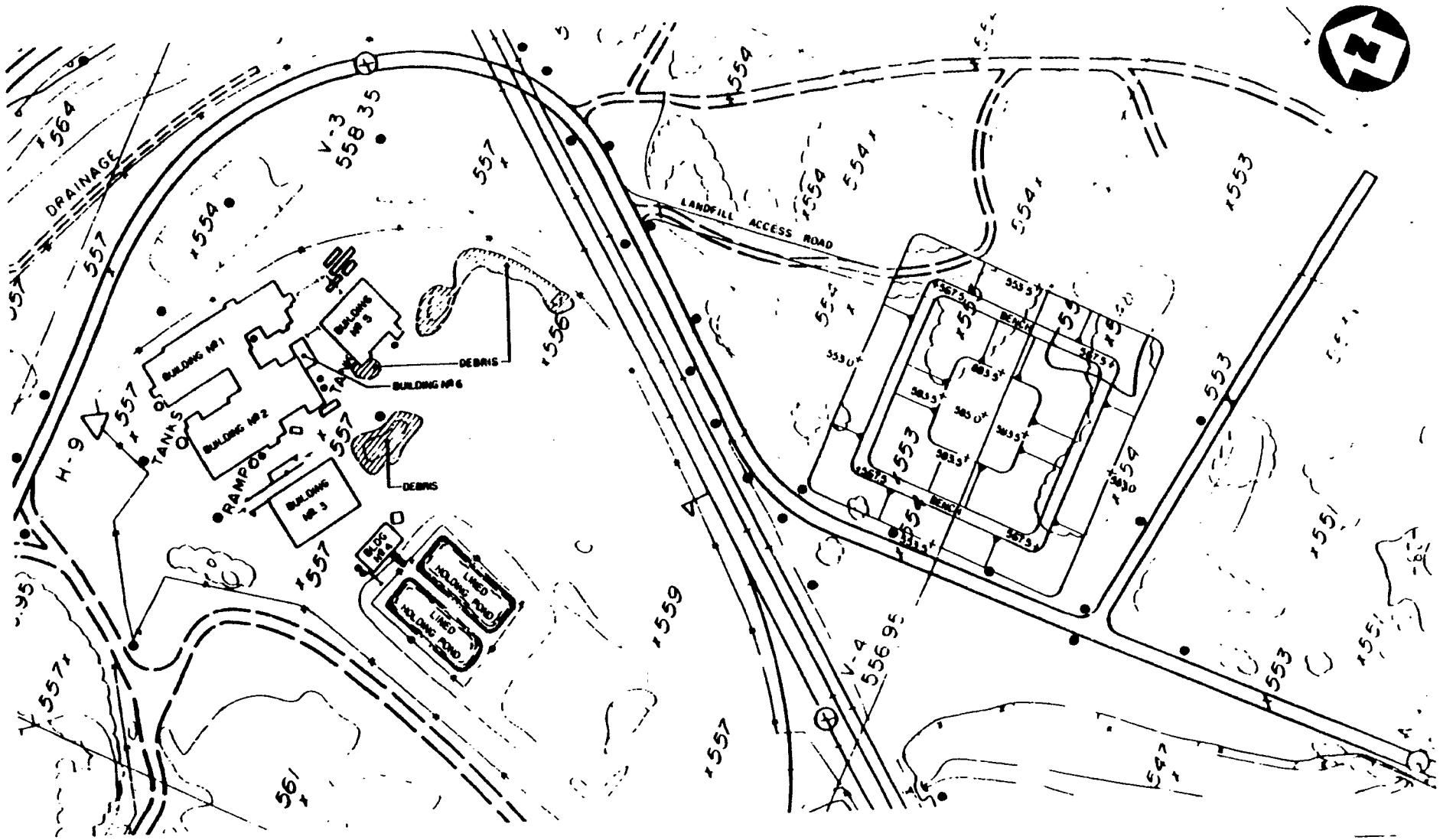


FIGURE 8

LANDFILL AND FLOOD PROTECTION DIKE PLAN VIEW
DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

This selected remedy will be designed to meet the Phase II remedial action objective of reducing or eliminating exposure pathways by which building contaminants may reach potential receptors.

For this alternative, the dismantling and removal of the buildings, process equipment, tanks, debris and lined wastewater lagoons will utilize common, well-established methods that involve standard engineering practices.

Building floors, foundations, roofing, and walls and all process equipment and other building contents would be dismantled using conventional construction practices. The use of explosives would not be permitted. Shoring and bracing would be provided during the dismantling. Walls would be removed from one story at a time. Masonry walls would be dismantled in small sections. Structural steel would be removed in individual pieces and lowered carefully to the ground. Constant dust control would be maintained during all operations. Walls and other structures would be wetted down prior to dismantling. Water used for dust control would be collected where possible.

Salvageable material, such as metal tanks or steel beams, would be cleaned and decontaminated, then turned over to the contractor for salvage as scrap metal. One of the building pads can be used as a decontamination pad if a curb is installed to contain decontamination fluids; however, it may be more cost-effective to use the decontamination pad which will be constructed onsite as part of the Phase I remedy.

It is anticipated that a low-volume, high-pressure water spray system would be used for decontamination. This method minimized the volume of decontamination water requiring offsite treatment. For cost estimating purposes, the volume of material that can be decontaminated for disposal as non-hazardous waste were estimated based on building use and type of material. Tanks and structural steel were considered as salvageable or as scrap.

It is estimated that a total of 3,900 cubic yards of building material and site debris will need to be removed. Of this, approximately 200 tons of metals may be decontaminated and salvaged as scrap. Quantity estimates for each building are shown in Table 8.

All materials that are not metal and therefore not decontaminated will be loaded on trucks and transported to a RCRA-permitted hazardous waste landfill for ultimate disposal.

The chemicals which were stored in the warehouse on site will be removed, loaded onto trucks and transported to a RCRA-permitted hazardous waste incinerator for destruction. These stored chemicals were the Drake Chemical Co. stockpile that were to be used in their processing. However, since they have been stored for over four years, determination of their salvage value would be difficult at best.

There are currently two lined wastewater lagoons onsite which Drake used for a short period of time in an effort to pre-treat the facility's effluent before discharge. The amount of liquid which is in

TABLE 8

ESTIMATED BUILDING DISMANTLING QUANTITIES
DRAKE CHEMICAL SITE

Building Material	Building 1	Building 2	Building 3	Building 4	Building 5	Building 6	Site Debris	Total
Floor	203	413	154	28	105	14	-	917
Footer	117	129	69	19	49	23	-	406
Wall	160	127	71	72	67	67	-	564
Roof	217	51	6	8	15	1	-	298
Misc.	178	638	27	6	82	5	779	1,715
Total	875	1,358	327	133	318	110	779	3,900

All value expressed as cubic yards.

For transportation cost estimation, volumes were multiplied by a factor of 1.45 to account for void spaces after bulking.

the lagoons at any given time is dependent upon the balance of precipitation as opposed to evapotranspiration and possibly leakage. The lagoons were sampled and analyzed and the sediment was found to be grossly contaminated with a variety of organic compounds. These lagoons will be drained and all sediment will be removed and taken to a RCRA-permitted treatment facility. The liner of the lagoon will be removed and loaded onto trucks for disposal at a RCRA landfill. The earthern lagoon structure will then be sampled and, if necessary, leveled, transported and disposed of properly.

The location of some buried pipelines is known at this time; however, there may be other unidentified pipelines. Utilities that serviced the buildings, especially sewers, are assumed to be contaminated. These utilities would be abandoned, and the pipes would be plugged. Buried pipes associated with plant operations will be addressed during the Phase III remediation.

Utilities that cross the site and serve other properties would be temporarily or permanently moved or replaced if they interfere with implementation of remedial actions.

7. Compliance With Other Environmental Laws:

The selected remedial action alternative was evaluated in the context of site remediation in compliance with the NCP which requires that Federal, State and local laws and regulations be considered.

Applicable Federal regulations include the following:

- Resource Conservation and Recovery Act (RCRA)
- Occupational Safety and Health Administration (OSHA) guidelines
- Department of Transportation (DOT) hazardous materials transportation regulations.

All disposal of hazardous material, aqueous or solid, will be hauled by licensed operators and will be disposed of at RCRA-permitted hazardous waste facilities. All manifest requirements will be implemented for loaded hauls.

All licensed haulers must meet all DOT equipment and transportation requirements.

All work will be performed under OSHA guidelines for work at hazardous waste facilities.

8: Evaluation of Alternatives Not Selected:

8a: Alternative 1 - Removal with Offsite Disposal at a RCRA-Approved Facility.

Although this alternative gives the same results as the selected option it does not attempt to decontaminate salvagable metal, and therefore allows for the maximum capacity of on-site material to be disposed in a RCRA facility.

8b: Alternative 3 - Removal with Offsite Disposal Dependent on the Amount of Contamination.

In this option wipe samples would be taken of all materials to determine the extent of building contamination. Based on this analysis, a determination will be made as to the location of ultimate disposal. The problem of sampling a representative amount of material for contamination determination would make implementation of this option slow and tedious. Sample verification through quality assurance checks would need to be completed before any onsite material is transported offsite. Verification that material is not contaminated (even with wipe sample analyses) for disposal in a municipal landfill would be difficult. Since there is not a lot of room onsite for a staging area, dismantling of the buildings would be slow, and at times stopped waiting for sample analysis. Continuity of work would be solely dependent upon laboratory efficiency.

8c: Alternative 4 - Offsite Disposal in a New Landfill Constructed Adjacent to the Site.

One of the problems with the option is the aquisition of land to build the landfill. EPA would have to rely on local government to dedicate land for a construction. Realization of that scenerio is not very plausible. In addition, because the landfill would be constructed within a 100-year floodplain, a flood protective dike/levee system would need to be constructed. This may conflict with the U.S. Army Corps of Engineers, which is currently planning a flood control levee in the Lock Haven Area. Thirdly, this option has met with great opposition from local officials and the public when discussed at the public meeting.

8d: Alternative 5 - No Action.

The purpose of reviewing the no action alternative is to estimate the effect of not performing remedial actions on the buildings and contaminated structures.

Under the no action alternative, the buildings would remain standing. This alternative does not address the remediation of the buildings, nor does it address the potential threat to the environment or public health via the associated contamination pathways.

The potential for direct contact with contaminants in the buildings and contaminated structures would not be addressed. There is also the possibility of offsite migration via airborne particulates or by a fire or flood.

If No Action was chosen at this time it would only delay the inevitability of building removal, probably until Phase III. Removal of the buildings and structures now would also enhance any remedial action taken in Phase III.

A comparison of all alternatives can be found in the Alternatives Matrix (Table 9).

9: Proposed Action

We request your approval of the recommended alternative. The estimated base capital cost for this option is $3,413,000. There are no operation and maintenance costs for this alternative.

State

CC: Holtz
Smith
WRT
FILE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Post Office Box 2063
Harrisburg, Pennsylvania 17120

Bureau of Waste Management

717-783-7816

April 15, 1986

RECEIVED
APR 2
EPA - [illegible]

Mr. Stephen R. Wassersug, Director
Hazardous Waste Management Division
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
9th and Chestnut Street
Philadelphia, PA 19107

Dear Mr. Wassersug:

The draft Record of Decision document for the Phase II cleanup at the Drake Chemical Superfund site was received on April 11, 1986. The draft document has been reviewed by the Department staff. The Department concurs with the EPA's decision for this phase of the cleanup. The selected alternative, which removes the buildings and lagoons while decontaminating the scrap steel, will best protect the public health and the environment while minimizing the amount of materials that will need to be disposed of at a RCRA landfill.

I understand that the estimated cost of this phase of the project is $3,413,000, and that it does not require any operations and maintenance activities. The Department, of course, will enter into a contract to provide 10 percent of the cost of the project.

This site has been a major concern for the people of Lock Haven for many years and I know that it will continue to be a high priority site for both the Department and EPA. This Phase II construction project will be a major step in the process of successfully completing a permanent cleanup of the site. I can assure you that the Department will continue to cooperate in any way possible in order to expedite the cleanup of this site. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

James P. Snyder, Assistant Director

RESPONSIVENESS SUMMARY
DRAKE CHEMICAL SITE
LOCK HAVEN, PENNSYLVANIA

This community relations responsiveness summary is divided into the following sections:

Section I. Overview. A discussion of the EPA's preferred alternative and the public's expected response to this alternative.

Section II. Background of Community Involvement and Concerns. A discussion of the history of community interest and concerns raised during the remedial planning activities at the Drake Chemical Site.

Section III. Summary of Major Comments Received during the Public Comment Period and Agency Responses. A summary of comments and responses categorized by topic.

Section IV. Remaining Concerns. A discussion of community concerns that the EPA and the Pennsylvania Department of Environmental Resources (PADER) should consider in the remedial design and construction phases at the Drake Chemical Site.

I. OVERVIEW

At the time of the public comment period, the EPA had identified a preferred alternative for Phase II remediation of the Drake Chemical Site. Although the agency expressed a preference, it presented a total of five remedial action alternatives in the draft feasibility study report. The preferred alternative, referred to as Alternative 2, consists of the removal of all tanks, buildings, and debris; drainage and removal of the lined lagoons; removal and incineration of the chemicals in the onsite warehouse; decontamination of metals and removal from the site as scrap; and disposal of all contaminated materials in an offsite, RCRA-permitted, secure landfill.

Comments received during the public comment period indicate that residents and local officials, as well as the PADER, strongly support Alternative 2. Comments also showed that the community and community officials vehemently oppose Alternative 4 which provides for construction of a new landfill on land adjacent to the Drake Chemical Site and presently located within a flood plain.

II. BACKGROUND OF COMMUNITY INVOLVEMENT AND CONCERNS

Community interest in the Drake Chemical Site was originally attracted by fires at the site dating back to the 1960s. Flooding of the site also raised concern in the community that hazardous substances from the site might spread

throughout the town. During emergency actions at the site in March of 1982, acid mist clouds escaped from the site and caused problems ranging from peeling paint on vehicles to respiratory irritations. The cleanup contractor had to set up an insurance program to handle the numerous claims that resulted.

In April 1983, the Rural Development Committee, a group established in 1982 by representatives of local agencies interested in furthering rural development, sent a list of their concerns about the Drake Chemical Site to the EPA, government officials, and the media. They requested that their concerns be addressed at the next scheduled public meeting.

A second citizens' group was formed in April 1983. Called CLEAN (Citizens and Laborers for Environmental Action Now), the group was composed of former site workers and interested citizens. Its aim was to secure health screening for former Drake Chemical Company employees.

At a public meeting held in May 1983, the primary concerns of the 250 people who attended were health related. However, interest has dwindled since that time, perhaps because of Phase I progress. At the latest public meeting, held April 3, 1986 to discuss the feasibility study for Phase II, less than 30 community members attended. None of these individuals voiced concern about health issues. No representatives of the Rural Development Committee or CLEAN attended. The primary concerns at this meeting included methods of decontamination, offsite disposal, the remedial action time-frame, and the shortcomings of Alternative 4.

III. SUMMARY OF PUBLIC COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

Comments received during the Drake Chemical Site public comment period are summarized in this section. The comment period opened on March 27, 1986 and concluded April 17. Although the EPA presented five remedial action alternatives for consideration, the agency expressed a preference for Alternative 2. This alternative was also preferred by the PADER.

Remedial Alternatives

1. Several people spoke against Alternative 4. They were concerned that the proposed location of a new landfill on property adjacent to the site, between Route 220 and the railroad embankment, lies within a flood plain. This location would move the contaminants 200 or 300 yards closer to Bald Eagle Creek, creating a situation that the community perceives as an increased risk.

   EPA Response: The National Contingency Plan (NCP) requires that the cost and technical feasibility of onsite treatment and disposal be evaluated, if remedial alternatives that include offsite disposal are proposed. Originally, building and sludge remediation were part of Phase II, and the EPA intended to propose dismantling the buildings, spreading them on the ground, and capping the sludge and the buildings together. However, sludge

remediation has been separated into a third phase, and it is no longer possible to dispose of the structures on site. Since that option is not available, the next option is to acquire land as close to the site as possible. The plans are only conceptual now, but the land owned by Castanea Township and located between Route 220 and the railroad embankment is the proposed landfill site.

The landfill would be built only to a capacity that would handle the building materials, and it would be an elevated, lined, federally-approved facility. The contaminants would not be buried in the ground because the groundwater is too high in this area. The landfill would be capped according to Resource Conversation and Recovery Act (RCRA) regulations, and then, to protect it from flooding, a dike and levee system would have to be built around the facility. There is a flood protection system proposed by the U.S. Army Corps of Engineers for construction sometime in 1988, but we cannot assume construction of this system. There are many administrative concerns with this alternative; however, it is the least expensive option.

2. A local official suggested that having satisfied the NCP by presenting Alternative 4, EPA should "scrap Alternative 4 from the record." He asked that it be made part of the record that implementation of Alternative 4 would be met with "militant resistance." This statement was supported by other public meeting participants.

   EPA Response: EPA is going to present Alternative 2 to the Regional Administrator as the preferred alternative, unless there is adverse public comment on Alternative 2. If no strong support for Alternative 4 develops, it is unlikely to be selected.

3. Citizens and officials inquired whether Alternative 5, the no-action alternative, might be selected.

   EPA Response: The selection of Alternative 5 is an unlikely possibility. If it is chosen, action on the buildings and structures will, most likely, revert back to Phase III.

Questions About Project Phases

1. Officials requested a summary of remedial actions and the time frame for Phase I at the Drake Chemical Site. Interest was primarily focused on the leachate stream remediation (Phase I).

   EPA Response: Phase I is intended to eliminate direct contact with the leachate stream. The stream is caused by contaminated groundwater that comes up in low-lying areas according to fluctuations of the water table. There is some seepage through the railroad embankment. EPA plans to eliminate this seepage by installing a French drain system that will drain the perched aquifer into the regional aquifer. The pipe that comes out of the

railroad embankment will be sealed and the upper half of the leachate stream, above Pine Street, will be filled in, contoured to the surrounding land, and capped with clay. Clean surface water flow in that area will be facilitated by a pipe that runs from Pine Street through the Route 220 culvert and into Bald Eagle Creek. Once the groundwater cannot surface in the low-lying areas, it will retain the course into the normal aquifer flow. Some sediments will have to be excavated to install the pipe below Route 220, and since the sediments are partially contaminated, they will be placed in a temporary surface impoundment that will be constructed on the Drake Chemical Site. The impoundment will be dealt with in Phase III.

Design of Phase I is complete. Bid opening is scheduled for May 6, 1986. Once the Corps of Engineers is satisfied that the low bidder is responsible, that contractor will be given notice to proceed. If no problems arise, work should start in late May or early June and should take about two or three months.

2. Several questions were asked about Phase II. Most of these were about the duration of the project, the expected implementation schedule, and whether the costs quoted in the fact sheet and the feasibility study included design and construction.

EPA Response: It is difficult to attach a date to Phase II because Superfund authorization ran out on October 1, 1985, and the incremental funding Congress provided has been committed to sites that have already had Records of Decision (RODs) signed. Any new ROD sites will have to wait for funding. EPA wants to get the Drake Chemical Site ROD signed now so that as soon as the money is available, funds can be obligated for Phase II.

Once a contractor is selected and money is available, the EPA estimates the implementation of Phase II will take six months. There shouldn't be any hidden variables associated with this project.

At worst, the EPA anticipates a new Superfund bill by the beginning of the new fiscal year. This is an assumption. The implementation of Phase II would then occur in the spring of 1987. The project will probably continue through the entire 1987 construction period. Design and construction costs are included in figures quoted in the feasibility study.

3. Concern was expressed that the Drake Chemical Site, Phase II, might not be a high enough priority to be funded as soon as monies are made available.

EPA Response: When the Superfund bill is passed, money can be appropriated if the ROD is signed.

4. The town of Lock Haven is on schedule with its plans for the construction of a dike-levee system and expects to begin construction by mid-1988. Since Superfund has not been reauthorized, it appears that the EPA cleanup at Drake may exceed this schedule.

EPA Response: EPA expects that Phase II will be under way before 1988, but as far as Phase III is concerned, that may be correct. Phase III is the most complex phase. There are many issues to resolve, and the EPA wants to be consistent with the closure at American Color & Chemical (AC&C). Phase III may take awhile, but Phase II is an opportunity to do some cosmetic work. The buildings are an eyesore, and people want them removed. EPA hopes to begin work soon.

Decontamination and Salvage

1. Several questions concerned decontamination of metals. Citizens wanted to know what the decontamination process involves, how decontamination of metals is determined, and why Alternative 2, with decontamination required, was cheaper than Alternative 1, which called for removal of all wastes and contaminated structures to a RCRA permitted landfill.

EPA Response: The decontamination process involves spraying the metals with a low volume, high pressure spray. This is done on a decontamination pad, and the flow from the spray is collected in a sump and put into a tank. It is then tested, and if it is found to be contaminated, it goes to a RCRA-permitted treatment facility. After being decontaminated, the metals are wipe sampled. This is in the preferred alternative only. If the metals are determined to be decontaminated, they can be sold as scrap.

Decontamination of the metals eliminates a lot of tonnage that would, in Alternative 1, have to be hauled several hundreds of miles to a landfill. At the landfill, the price will be based on volume.

2. The quantity of chemicals left in the warehouse and the salvage value of those chemicals was requested. Also, inquiries were made about salvageable equipment that might remain on site.

EPA Response: The chemicals in the warehouse are not waste chemicals but were used in the product being manufactured; however, EPA is not going to evaluate the salvage value of these materials at this point. They will be treated as waste materials since they have been sitting for 5 years, and they will be incinerated.

Equipment remaining in the building has also been sitting idle for years; the roofs of the buildings are caving in, and the elements have probably damaged whatever remains. It may cost more

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to salvage that equipment than to buy new equipment. However, as the work progresses salvageable items may be discovered, and decisions will be made at that point, especially in the case of the warehouse and water treatment buildings which are less contaminated.

3. Several questions addressed the decontamination of building materials other than metals. It was suggested that some sort of core sampling may be preferrable to wipe sampling for bricks and wood. One person expressed concern that bricks might go to a municipal landfill. He mentioned that a health study reportedly found beta-naphthylamine leaching out of contaminated bricks and wood.

   EPA Response: There are no plans to decontaminate bricks or wood at this time. In Alternative 2, the EPA will assume all bricks and wood are contaminated, and they will be disposed at a RCRA - permitted landfill. If Alternative 3 is chosen, there are methods to sample these materials to be sure they are not contaminated before sending them to a municipal landfill.

4. Concern was expressed that salvaged metals might be sold to buyers who are unaware of the origin of the metals.

   EPA Response: The EPA does not want these decontaminated metals to be sold and used for the same purposes they formerly served. The EPA wants these things to be recycled in another form. Probably, the metals will be sold as scrap and melted down. The buyers will be informed about the origin of the metals and the decontamination process.

Disposal and Lagoon Concerns

1. Several questions were raised regarding the lined lagoons on site. Citizens asked if the EPA intended to drain the lagoons and if the contents of the lagoons were known. One woman reported that her son, a former Drake employee, told her that barrels containing both liquids and solids were dumped into the lagoons. She was concerned that the lagoon contents might be unstable and also that the barrels might be allowed to remain in the lagoons and simply be covered over in Phase III.

   EPA Response: There are two lined lagoons on site that were installed in the late 1970s to treat effluent from the Drake facility. There is still some liquid in those lagoons, dependent upon evaporation and precipitation. Any remaining liquid will be pumped into a tank and sent to a RCRA landfill. We tested the lagoons, and we do have a chemical analysis of them.

   There is a liquid lagoon on site that will be dealt with in Phase III. Also remaining until Phase III is an intermittent lagoon that occasionally dries up. The lagoon that the barrels were

thrown into is probably on the eastern side of the site. The EPA has been told that barrels were thrown into that lagoon. One alternative would be to leave the sludge lagoons intact and cap them; however, the EPA does not want to speculate about Phase III at this time.

2. A citizen asked if the soils around the lined lagoons had been tested and if the lagoons were leaking. The inference was that the chemicals in the lagoons may have caused any leaks that were occurring and that it was therefore unwise to place those same chemicals into a lined landfill.

   EPA Repsonse: These lagoons are elevated so samples were taken of the embankments. Anything outside the embankments will become part of Phase III. In Phase II the EPA will drain the liquids, remove the lagoon liners, and possibly level the embankments.

   At this time, it is not known whether the lagoons are leaking, but it seems probable. However, lined landfill regulations are now completely different than when this site was lined. The new landfill liners are double, they have new protection systems, and they are monitored. Furthermore, liquid wastes will not be sent to a landfill; they will be sent to a treatment facility.

3. Inquiries were made about the types of landfills that would be used for offsite disposal and about the specific names and locations of the landfills the EPA intends to use.

   EPA Repsonse: At this time, the EPA is not talking about a specific landfill. If the preferred alternative is chosen, materials will be hauled to a RCRA-permitted landfill. There are 2 or 3 RCRA landfills to handle the entire Northeast. These landfills are secured, hazardous waste facilities. They are governed by the Resource Conservation and Recovery Act, a Federal law that regulates hazardous waste landfills and prescribes certain types of liners and monitoring systems.

   In Alternative 3, disposal will be in appropriate facilities dependent upon the amount of contamination in the waste materials. This means that materials found to be contaminated will go to a RCRA-permitted facility and materials shown to be uncontaminated will be sent to a subtitle B municipal landfill. Based on level of contamination much would probably go to an unlined, state-permitted facility that provides leachate collection and treatment.

Comments Related to Proposed Dike/Levee System

1. A representative of the local flood control board expressed relief that Alternative 4 was not preferred and called attention to the fact that the level of protection for the flood control project had been changed from 500-year protection to 200-year protection.

He then inquired about the liability of the Army Corps of Engineers for any impact their flood control measures might have on the EPA Phase I remedial measures. He also requested assurances that the Phase I plan to cap the leachate stream will not be affected by ponding in the area. A resident inquired about the Corps of Engineers' feelings toward Alternative 4.

EPA Response: The Corps will incur liability if it disturbs buried contaminants; in that case the Corps would be considered the generator and would be held responsible. The EPA met with the design engineer for the Corps last year in Baltimore and exchanged conceptual plans. The only remaining concern is with the backwater flap on the culvert. There may be a need to install a concrete structure in order to put that flap over it. There will be another meeting between the EPA and the Corps to discuss the location of this backwater valve and how deeply it will penetrate the cap. The EPA wants to be sure that whatever is dug into that area is properly shored.

The ponding area's impact on the Phase I cap was also discussed with the Corps at the Baltimore meeting. There was concern that the buildup of hydraulic head in that area might pop the cap, but apparently the engineers are satisfied that ponding will not affect it. The Corps has not commented on Alternative 4.

2. A representative of the flood control board asked if the EPA planned to prepare a division-of-costs statement concerning the degree of protection provided to the site by the levee and the resulting reduction in the cost of remedial actions at the site. He stated that this information might raise the cost-benefit ratio of the dike-levee system since the cost of construction remains the same, but the benefit of removing the Drake Chemical Site from the flood plain is greater.

EPA Repsonse: The EPA has no plans to do this at this time.

Costs and Funding

1. EPA representatives explained the present lack of funding for Phase II and the expected sequence of events before new funds are made available as part of their presentation. This information was apparently well received because little information was requested. One person requested information about the amount of money spent or expected to be spent at Drake Chemical.

EPA Response: The Phase I leachate-stream construction will cost approximately 1.2 million dollars; Phase II will cost about 3.4 million dollars, and Phase III could range from 5 million dollars to 30 million dollars. Emergency action at the site cost a little over a million dollars; and the remedial investigation cost about 750 thousand dollars. There was also a leachate stream study performed by the Emergency Response Team (ERT) prior to the emergency cleanup in 1982.

Miscellaneous Concerns

1. Local officials expressed concern that activities at the Drake Chemical Site might have a negative effect on summer events planned for the community. These activities included a week-long event called a fly-in at the Piper field in July and a 4-day period at the Labor Day weekend.

   EPA Response: The EPA requested the dates of these activities so that any negative effect of site activities on the community's festivities could be avoided.

2. Local officials inquired if it was necessary to submit a written comment to the EPA regarding remedial alternatives or if no comment would be interpreted as agreement with Alternative 2.

   EPA Response: The EPA does not require written comments. It will assume agreement with the preferred alternative. However, if officials do write that they support the preferred alternative, it gives that much more credence to that alternative when it is presented to the Regional Administrator.

3. A public official's aide said that he was promised a copy of the feasibility study by a representative of the EPA.

   EPA Response: Generally several copies of the report are sent to different locations in the community so that everyone has access to them, but anyone wanting a personal copy may contact the EPA.

IV. REMAINING CONCERNS

In general, the community seemed to be in complete agreement with the EPA's recommendation of Alternative 2, and they did not appear to be alarmed about the present lack of funding. The remaining concern of local residents and officials regards future development in the Drake Chemical Site vicinity.

1. To the west of the Drake Chemical Site, Hammermill is considering building a waste-energy plant. Access to the plant will probably have to cross the leachate stream cap.

   EPA Response: The EPA cannot stop Hammermill from building there, but Hammermill will have to keep in mind that the area will be contoured for surface water flow. Any construction methods employed will have to facilitate that flow and keep it moving toward catch basins that go into the new pipe. An access road will also have to be constructed so that surface water flow is not impeded.

The EPA spokesman summarized the reasons that the agency and the PADER prefer Alternative 2:

- It saves needed capacity in RCRA-permitted landfills.
- Field decisions on decontamination are more accurate.

- All of the contaminated structures are removed.
- The cost differential with other alternatives is minor.
- It satisfies the NCP.

Community relations support activities during the Phase II feasibility study at the Drake Chemical Site included issuing press releases, updating the community relations plan, distributing a fact sheet, conducting a public meeting, soliciting public comments, and preparing this responsiveness summary.

Table 7
Alternatives Matrix
Drake Chemical (Phase II)

Alternative	Technical Feasibility	Environmental Concerns	Institutional Issues	Public Health Evaluations	Public Comments	Present Worth
. Tanks, uildings and tructures emoval with ffsite Dis- osal at a CRA Approved acility.	The dismantling and removal of structures onsite utilizes common, well established methods involving standard engineering technology and practice. Time to implement this option is estimated at 6 months.	The potential for environmental receptor exposure is minimal. Some risks involved in transportation of wastes offsite.	Transport of waste must meet DOT and State shipping and manifesting regulations. All waste material will be disposed of in a RCRA approved facility.	Dismantling and removal activity will generate dust and will increase the potetial for release of contaminants into the air. This risk can be controlled to acceptable limits. Work-related safety hazards would be minimized by a site safety plan.	No significant comments were received on this option.	$3,632,000
. Tanks, uildings and tructures emoval. De- ontamination f Metal tructures for alvage. Off- ite Disposal f Non-Decon- aminated aterial in a CRA Approved acility.	Dismantling proceedure is similar to Alt. 1. Decontamination proceedures are well established methods in the hazardous waste field. Time to implement this option is estimated to take 6 months.	Similar to Alternative 1. Decontamination fluid would be contained and analyzed to determine the best method of disposal.	Same as Alternative 1 .	Similar to Alt. 1. Steam will not be used for decontamination because of the volatilization potential of beta-naphthylamine. A low volume, high pressure water system will be used.	No significant public comments were received on this option.	$3,143,000
. Tanks, uildings and tructures emoval with ffsite Dis- osal Depend- ant upon the Amount of ontamination.	The technical feasibility is similar to Alt.1. The statistical validity of wipe samples used in this option is low.	The risk of contaminated material accidently going to a non-hazardous waste landfill is greater for this option because of the low statistical validity of the wipe sampling.	Getting a demolition landfill to accept waste from a Superfund site, even if the material is deemed non-contaminated, will be difficult at best.	Similar to Alt. 1 for the dismantling and transportation of contaminated materials.	There was some concern at the public meeting about some of this material going to a non-hazardous waste landfill.	$3,488,000

Table 9 (C
Alternatives rix
Drake Chemical (Phase II)

lternative	Technical Feasibility	Environmental Concerns	Institutional Issues	Public Health Evaluations	Public Comments	Present Worth
. Tanks, uildings and tructures emoval with isposal in a ew Landfill onstructed djacent to he Site.	The technical evaluation for dismantling of the buildings is the same for Alternative 1. Construction and engineering for the landfill are based on common practices and can be performed without special equipment.	No long term adverse environmental effects if the landfill is constructed properly. Location of the landfill virtually eliminates any potential utilization of the land between the railroad and Route 220.	This alternative must meet all requirements of RCRA and the State for construction of a hazardous waste landfill. Will impact the planned USCOE flood control project in the area. Dedication of the land for a landfill would be very difficult to get.	For dismantling activities the risks are the same as in Alternative 1. If properly constructed, there would be minimal risk to public health from the landfill. A 200-year flood event would likely wash out the protective dike and possibly carry materials downstream	This option was met with extreme criticism from both the local citizens and the local government. One local politician remarked that if this option were chosen it would be fought with militant opposition.	$3,282,000
. No Action	Not applicable	Would not reduce the risk of offsite contaminant migration via fire or flood	Would delay the inevitability of building removal, probably into Phase III of the project. Further physical controls may need to be employed in order to prevent trespass onto the site.	Would not reduce the risk of offsite migration of the contaminants via fire or flood and potentially affecting human population in the area. Direct contact threat from potential trespassers would remain a possibility.	If no action was the ROD decision at this point it would be met with much anger and frustration in the community.	$0

Enforcement

In April of 1979, a consent decree was signed between Drake Chemicals and the Pennsylvania Department of Environmental Resources concerning wastewater and sludge disposal at the site. In January of 1982, a Notice of Violation was issued by the State based on violations of the April 1979 consent decree. About the same time Drake filed for liquidation under Chapter 7 of the Bankruptcy Act and EPA initiated emergency response activities at the site. Notice letters concerning these emergency actions were sent to: Ernest Dion, President/Owner Drake Chemicals Inc; American Color and Chemical Company and Mr. William Knecht, the trustee for the bankrupt Drake estate. No positive response was received so CERCLA funds were used in the cleanup.

In October of 1982, notice letters were again sent to the three potentially responsible parties informing them that a remedial investigation and feasibility study were about to be undertaken by EPA at Drake. American Color and Chemical expressed interest in participating in the RI/FS, but only in proportion to what it regarded as its contribution to ground water contamination. No final settlement was reached.

In August of 1984, notice letters were issued to Ernest Dion and American Color and Chemical informing them that Phase I remediation was about to begin at Drake and offering them the opportunity to perform the needed actions. Ernest Dion replied that he had insufficient funds as he had recently filed for bankruptcy. American Color and Chemical Responded to EPA's notice letter on September 13, 1984. The company declined to undertake response action, maintaining that it was not responsible for leachate stream contamination.

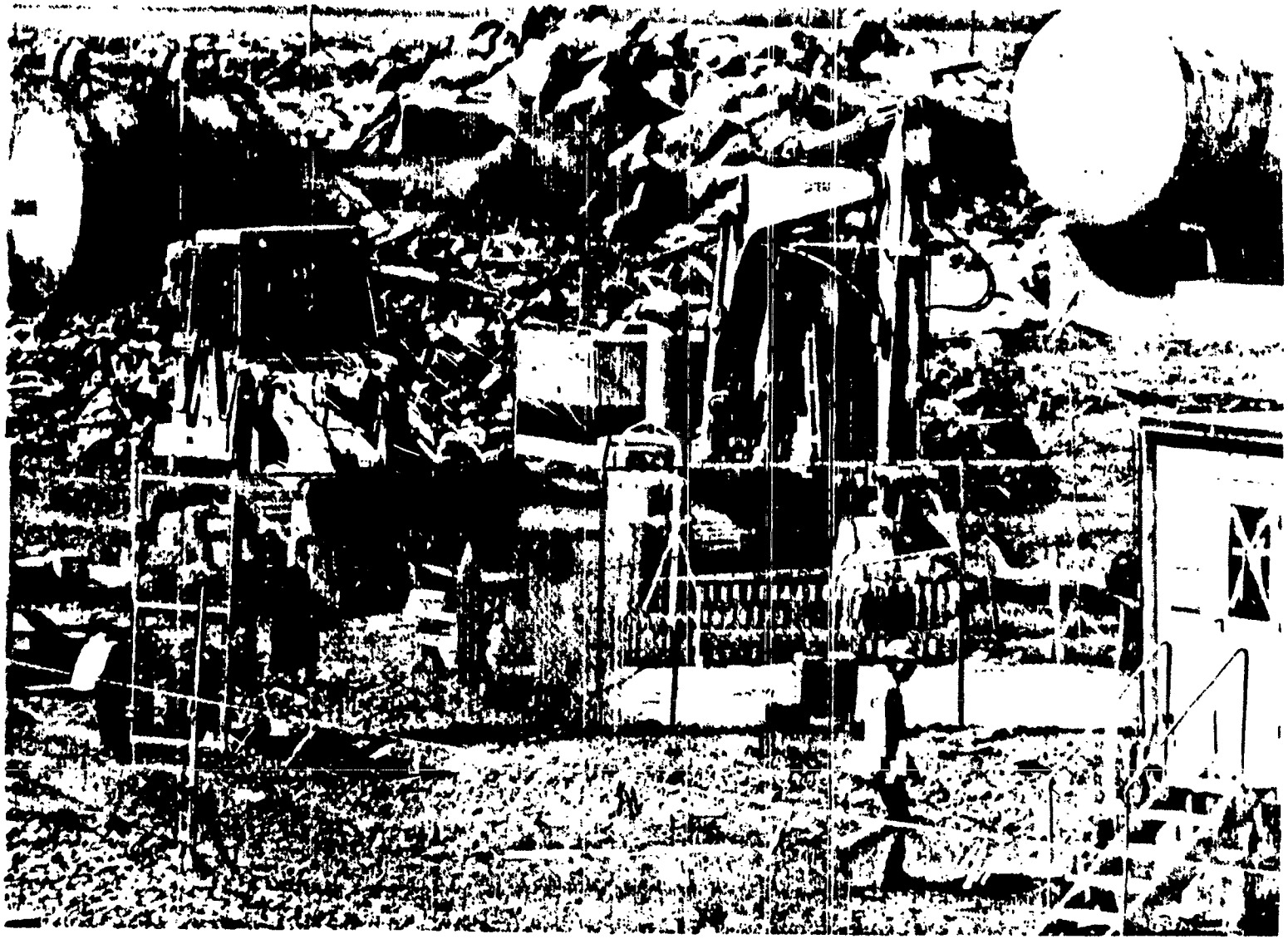
In April of 1985, notice letters were again issued to the 3 responsible parties for implementation of Phase II. No response was elicited from the bankrupt Drake Company and Mr. Dion was recently deceased. American Color and Chemical is not a responsible party for the Phase II remediation covered in this ROD. Therefore, no responsible party exists for Phase III. AC&C has been identified as a responsible party for ground water remediation for which an FS has not been developed at this time. Negotiations with AC&C concerning ground water remediation are ongoing.

Recommendation

The Enforcement program recommends that the Regional Administrator sign the ROD for Phase II as planned and that EPA proceed with design as soon as funds become available.

APPENDIX H

NEWSPAPER ARTICLES



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ıe Environmental Protection
ıcy's Phase Two cleanup of
Drake Chemical Co. site has
under way for several
ks. The first portion of the
ıe Two cleanup includes the
oval of all waste and
nicals stored there, the
olition of three of the five
lings on the site, and the ex-
ıtion of the lagoons. Accor-
to Marty Powell, the on-site
dinator for the EPA, another
ling should be demolished
week. The crews are work-
a.m. to 6 p.m., seven days a
. He originally estimated it
d take three months to com-
that portion of Phase Two,
ressphotos by John Irwin

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SEPTEMBER 8, 1988

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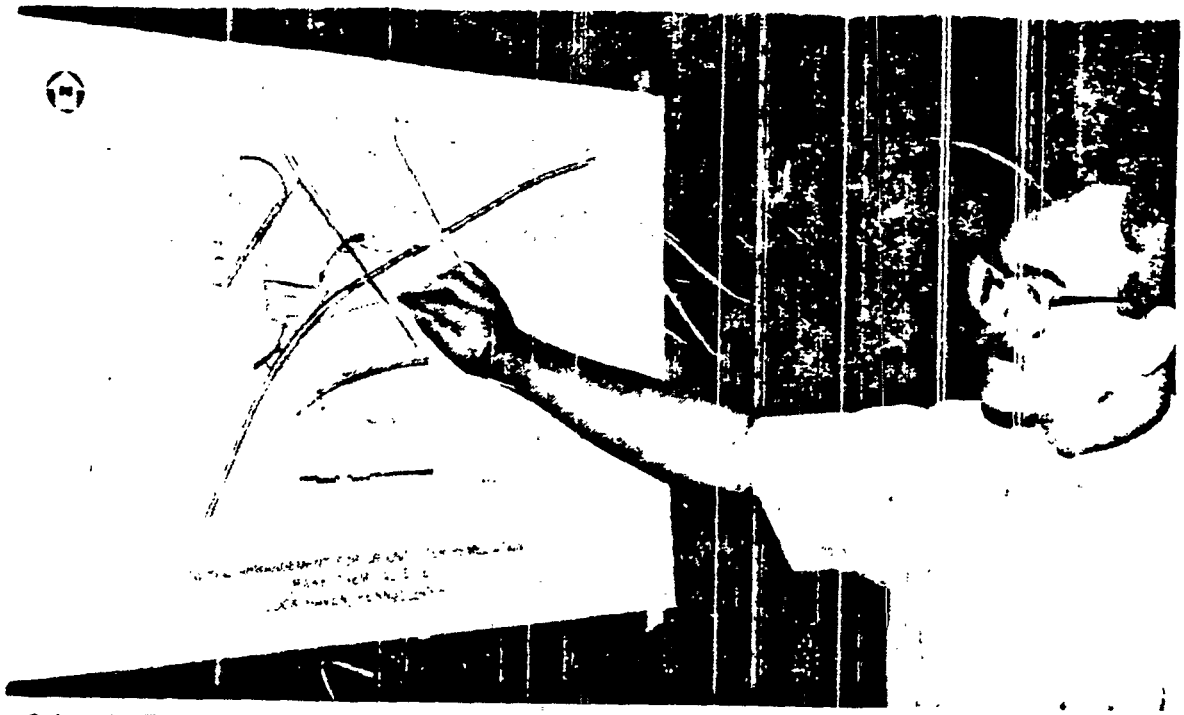

y Schrock, Environmental Protection Agen- emedial manager, shows areas slated for idwater cleanup in Phase Three of the Drake Chemical Co. cleanup. (Expressphoto by Kim Wilkinson)

No opposition voiced to plan for Drake work

By KIM WILKINSON
Express Staff Writer

LOCK HAVEN — The proposed Phase Three cleanup for the Drake Chemical plant met with no opposition Wednesday night as Environmental Protection Agency representatives outlined the plan in a public meeting.

Fewer than 20 citizens attended the meeting, which was held to review the closure alternatives, to discuss the EPA preferred plan and to hear public comment.

Exactly two years ago, according to Roy Schrock, EPA remedial manager, EPA held a public meeting on another proposed Phase Three cleanup which met with public opposition. Schrock said, "The former plan proposed lowering the water table and putting a cap on it. I think people were opposed to that proposal because we weren't going to do anything with the contaminated water."

Schrock said the new plan will be a long-term solution, which will allow the site to eventually be used again. "I think people will feel safer knowing that most of the bad stuff is gone from the site," he added.

The proposed Phase Three is divided into two "operable units," which will jointly cost approximately $100 million. The first unit will deal with the treatment of the contaminated sludge, soil and sediment while the second unit will deal with the contaminated groundwater.

The new proposed cleanup is the result of a remedial investigation and feasibility study, Schrock said. He said ground samples were taken throughout the site to determine the contamination levels. The samples revealed that there is contamination throughout the entire 12.5-acre site although some areas have higher levels of concentrations than others.

Schrock estimated the soil would

See DRAKE
Continued On Page 3

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ARTICLE CONTINUED ON NEXT PAGE

DRAKE

Continued From Page 1

to be treated down about 12½ or down to the water table, is approximately 240,000 cubic of soil.

A is proposing to treat the soil cavating all sludges, soils and ents, treating it in a rotary kiln ration system, disposing of the rator ash on site, backfilling, ding and revegetating the site. ck said. "The ash will be tested letals and may have to be ed to prevent any materials leaching through the soil."

estimated cost for this process million, Schrock said, and is on locating a mobile incinera- site.

said the soil stage should begin ee to four years, following a stage which would include a ncineration period. The treat- would take approximately to five years to complete.

said gas scrubbers within the rator would control the emis- released into the atmosphere.

rock said, "Realistically, the dwater treatment could begin o years. We're not using any sticated equipment for that ss. I'd like to see it started as is possible because it will take longer." It is estimated that it ake 25 to 30 years to complete oundwater treatment process.

EPA is proposing to treat minated groundwater on the site and from Drake to Route hich has also been found to be ninated. Some contamination has been found in the groundwater outside of Route 220 toward the Bald Eagle Creek, but Schrock said EPA is not planning, at this time, to treat that water. He said EPA believes the contaminates will decrease and will eventually run into Bald Eagle Creek, but the level will not damage the wildlife in the area. He said eventually it will "clean itself out."

The proposed method for treating the groundwater is to install extraction wells, build a treatment plant using biological activated carbon, treat the extraction stream, discharge the effluent, dispose the residuals and monitor the groundwater.

Schrock said this process should cost approximately $9 million. "This method was chosen because it is an older, proven technology and we will have the capability to add onto the system, should we find we need a larger capacity."

He said the EPA has not decided whether the "final polishing" step in the groundwater treatment will utilize the city sewage treatment plant or a plant which would be built on the Drake site.

Lock Haven City Councilman Alfred E. Hoberman said, "I'd like to encourage the EPA to work with the city sewage treatment plant to add to this plant . . . leaving a permanent addition after the project is done."

Mayor Diann Stuempfle, who met with the EPA yesterday afternoon, said, "I'm a little disappointed that is [illegible]

cleanup completed. But, not being an engineer, I have to believe they're going to do it as quickly as possible and there is a great possibility that the site will be able to be used in the future. It's not an overnight cure, but it's not going to happen that way. Hopefully this will give the city more land for development in the future."

Stuempfle said she wasn't surprised that few citizens attended the evening meeting. "I think that the people feel it's being taken care of, now that Phase One has been completed and Phase Two has been started."

Hoberman, who also attended the afternoon meeting, said, "I was quite impressed with what they had done on rethinking Phase Three. What EPA did, was go from leaving the problem in Lock Haven to cleaning up the problem in Lock Haven. It appears to be a good plan, well thought out and one that will protect all of us in the future."

Clinton County Commissioner William Eisenhann also attended the meeting, but he was not able to be reached for comment this morning.

Schrock said, "This isn't a final decision, we're still in a comment period." Citizens have the opportunity to make comments on the proposed cleanup by writing to Ray Germann, community relations coordinator, or Roy Schrock, regional project manager, 841 Chestnut St., Philadelphia, Pa. 19107, by Sept. 28.

EPA expects to make a final decision by the end of September.

THE LOCK HAVEN EXPRESS

SEPTEMBER 8, 1988

Phase II cleanup done at Drake

Lot empty at former chemical firm

By JIM RUNKLE
Express Staff Writer

LOCK HAVEN — Four months ago, an unsightly and dangerous gaggle of buildings existed at the defunct Drake Chemical Company complex in Lock Haven. Now, but for a few temporary structures, there is only an empty lot surrounded by a large fence.

The second phase of hazardous waste cleanup activites comes to an end today at the Drake Chemical Company in Lock Haven, according to Environmental Protection Agency spokesman Edward M. Powell.

Powell, on-scene coordinator of the Superfund cleanup activities, said that the two trailer-command posts that have been on the scene since August will be removed either Friday or Saturday.

Phase II cleanup activities focused on demolition of on-site buildings and surface features, draining and removing two lined lagoons and disposal of all materials in an offsite landfill.

The work was conducted under EPA supervision by OH Materials of Findlay, Ohio.

All debris, soil and waste removed during this portion of the cleanup were transported to a federally-approved landfill. There are no such landfills in Pennsylvania.

An empty field exists where the five buildings of Drake Chemical Co. in Lock Haven once stood. The temporary structures housing headquarters for hazardous waste disposal experts are expected to be off site today or Saturday, marking the end of Phase II Superfund cleanup activities at the complex. (Expressphoto by John Ervin)

THE LOCK HAVEN EXPRESS

DECEMBER 16, 1988

The Express

The Drake Chemical company is an inactive chemical manufacturing facility that operated from 1962 to 1981. During its operation, the company manufactured chemical intermediates used in the dye, cosmetics, textiles, pharmaceuticals and peticides industries.

Prior to 1962, EPA officials said, the use of the site was uncertain, but it is believed that chemicals were produced at the location as early as 1951.

The Drake company was cited many times by state and federal agencies for violating environmental and health and safety regulations.

In 1982, after the company failed to respond to EPA's requests to cleanup the site, the EPA began an emergency removal action. As a result, surface drums, surface sludges, and liquids contained in the process and storage tanks were removed and the site was fenced.

Phase I activities concentrated on containment of the leachate stream that ran off the property through the Castanea Township Park. The work included covering the upper reaches of the stream with natural soils and a clay cap, and installing a conduit drain in the lower reaches of the stream. Contaminated soils were excavated from the stream area.

Phase III activities, which deal with incineration of contaminated earth, are still several years in the future, according to Powell, who cited the complicated and extensive bidding process as the reason. He added that EPA is currently working up specifications for the work.

Phase II activities began Aug. 10. As of Thursday, all hazardous waste was transported off site.

Powell said that, by rough estimate, the second phase of the project cost about $3.2 million, well under the anticipated expenditures of $4.5 million. "It has been an overwelming success," Powell said, "We finished it in less time than anticipated and for less money than expected."

Powell described the task as "the first 'removial' site," a hybrid form of remedial work and removal work.

"Remedial is the band-aid, whereas removal is the cure," he explained. Both the band-aid and cure phases were undertaken at Drake during this part of the clean up.

Five buildings were originally located on site -- two process buildings, a warehouse, an effluent treatment building and an oven building.

Each building was demolished separately and debris was transported to Adams Center Landfill in Fort Wayne, Ind. for disposal.

The two process buildings were not originally included in the scope of the work, Powell said, but officials concluded it was a necessary move because of the danger posed by chemicals contained in the process lines and vessels located in what workers believed to be an unsafe building.

A total of 6,518 tons of building and metal debris were carried from the area.

The process also involved the draining of two lined lagoons at Drake. Tests indicated the presence of cyanide in both. Approximately 175,000 gallons of liquids were pumped and transported to two wastewater treatement facilites, CyanoKEM of Detroit, Mich. and Cecos of Bristol, Conn. An addtional 45,000 gallons of sludge were pumped from the lagoons and shipped to CyanoKEM.

In addition, workers found 93 tanks on site, 48 located outside or adjacent to buildings and 35 enclosed inside the structures. Samples were taken of all the tanks and they were bulked together according to compatability into three categories -- base neutral liquids, oxidizing acids and oxidizing liquids -- for disposal.

There were also tanks containing sulfide and cyanide solids, and they were also disposed of at approved landfills.

The empty tanks were rinsed, cut with shears and torched apart. The metal was disposed with the bricks from the buildings.

Six sumps containing much the same material as the tanks, were also drained, bulked and carted away.

A total of 360 drums were found on site. They were sampled, overpacked and staged on a remote area of the site. Empty drums were crushed on site. All drums were tranported to South Carolina for incineration.

Several cylinders -- about the size and shape of propane tanks -- were also discovered during operations. Since such cylinders are rented rather than purchased, efforts were made to identify the manufacturers and those still containing gases were returned to those facilities.

Powell expressed some surprise that the work was accomplished with little note or interest from the public. He added that local government representatives were very cooperative in providing assistance.

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An empty field exists where the five buildings of Drake Chemical Co. in Lock Haven once stood. The temporary structures housing head quarters for hazardous waste disposal experts are expected to be off site today or Saturday, marking the end of Phase II Superfund cleanup activities at the complex (Expressphoto by John Ervin)