PR/VSI REPORT

CEDAR CHEMICAL CORPORATION
WEST HELENA, ARKANSAS
EPA I.D. Number ARD 990660649

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1.0 INTRODUCTION

This section of the PR/VSI report covers the purpose and scope of the RFA program. The contents of the other sections of this report also are described.

1.1 Purpose and Scope of the RFA Program

The 1984 Hazardous and Solid Waste Amendments (HSWA) provide new authority to EPA to require comprehensive corrective actions on solid waste management units (SWMUs) and other areas of concern at interim status hazardous waste management facilities, particularly those applying for RCRA permits. These corrective actions are intended to address unregulated releases of hazardous constituents to air, surface water, soil, and groundwater, as well as the generation of subsurface gas.

One of the major segments of EPA's corrective action program consists of RCRA Facility Assessments (RFAs) to identify releases, or potential releases requiring further investigation. According to EPA's RCRA Facility Assessment Guidance Document, the four purposes of an RFA are to:

1. Identify and gather information on releases at RCRA-regulated facilities;

2. Evaluate solid waste management units and other areas of concern for releases to all media and regulated units for releases other than groundwater;

3. Make preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility; and

4. Screen from further investigations those SWMUs which do not pose a threat to human health and the environment.

The three basic steps of an RFA consist of a preliminary review (PR) of available information, a visual site inspection (VSI) to obtain additional information on releases and a sampling visit to fill data gaps by obtaining field and analytical data.

1.2 Contents of Report

This report presents the results of the PR and VSI of Cedar Chemical Corporation, West Helena, Arkansas. The principal sources of information used in conducting the PR included the facility's RCRA Part B permit application, EPA Technical Assistance Team (TAT) investigation reports, and various contractor reports prepared for Cedar Chemical Corporation. These documents were obtained during a search of relevant files at the EPA Regional Office in Dallas as well as the Arkansas Department of Pollution Control and Ecology (ADPC&E) in Little Rock. File material encompassed RCRA, the Clean Water Act and the Clean Air Act.

The VSI was conducted on December 16-17, 1987. The Cedar Chemical Corporation representatives who were present included Mr. Joe Porter (Environmental Engineer) and Mr. John Miles, Jr. (Plant Manager).

The A. T. Kearney representative was Mr. Robert Wasson. The Earth Technology Corporation representative was Mr. Tom Hastings.

Section 2.0 of this report contains a description of the Cedar Chemical Corporation facility, including its historical and current operations. Individual SWMUs also are identified in Section 2.0 along with a summary description of the wastes managed by the facility. Section 3.0 provides an overview of the environmental setting at the facility, comprising meteorology and air quality, floodplain and surface water, geology and soils, groundwater, and receptor information. In Section 4.0, a broad assessment of release pathways is made, covering the potential for releases to soil, groundwater, surface water, and air. Section 5.0 contains detailed discussions of each SWMU, while Section 6.0 covers other areas of concern (i.e., releases from production areas, spills, and evidence of contamination of unknown origin). Section 7.0 provides a list of references. The VSI photograph log and the field log are presented as appendices to the report.

2.0 FACILITY DESCRIPTION

2.1 Location

The West Helena Plant of Cedar Chemical Corporation occupies 48 acres of the Helena-West Helena Industrial Park, which is located approximately one and one quarter miles southwest of the intersection of U.S. Highway 49 and State Highway 242. The site is bordered by farmland, Highway 242, the Union-Pacific Railway, and industrial park properties (13).

The plant site is located to the south of the two cities of Helena and West Helena, approximately four miles west of the Mississippi River on nearly flat terrain. The plant site is comprised of two prime areas: (1) the manufacturing area and (2) the wastewater treatment system which is located on either side of Industrial Park Road (13). The location of the facility is shown at Exhibit 2-1. The layout of the facility is shown at Exhibit 2-2.

2.2 Historical and Current Operations

Cedar Chemical Corporation manufactures agricultural chemicals and organics. These have included insecticides, herbicides, polymers, and organic intermediates. Formulation and packaging are ancillary activities should the product be ready for the consumer market. Plant activities, which require some 80 to 90 people, are characterized by batch operations with seasonal production fluctuations and constant introduction of new products. Operations occur 24 hours per day, seven days a week. Batch chemical process operations include alkylation, amidation, carbamoylation, chlorination, distillation,

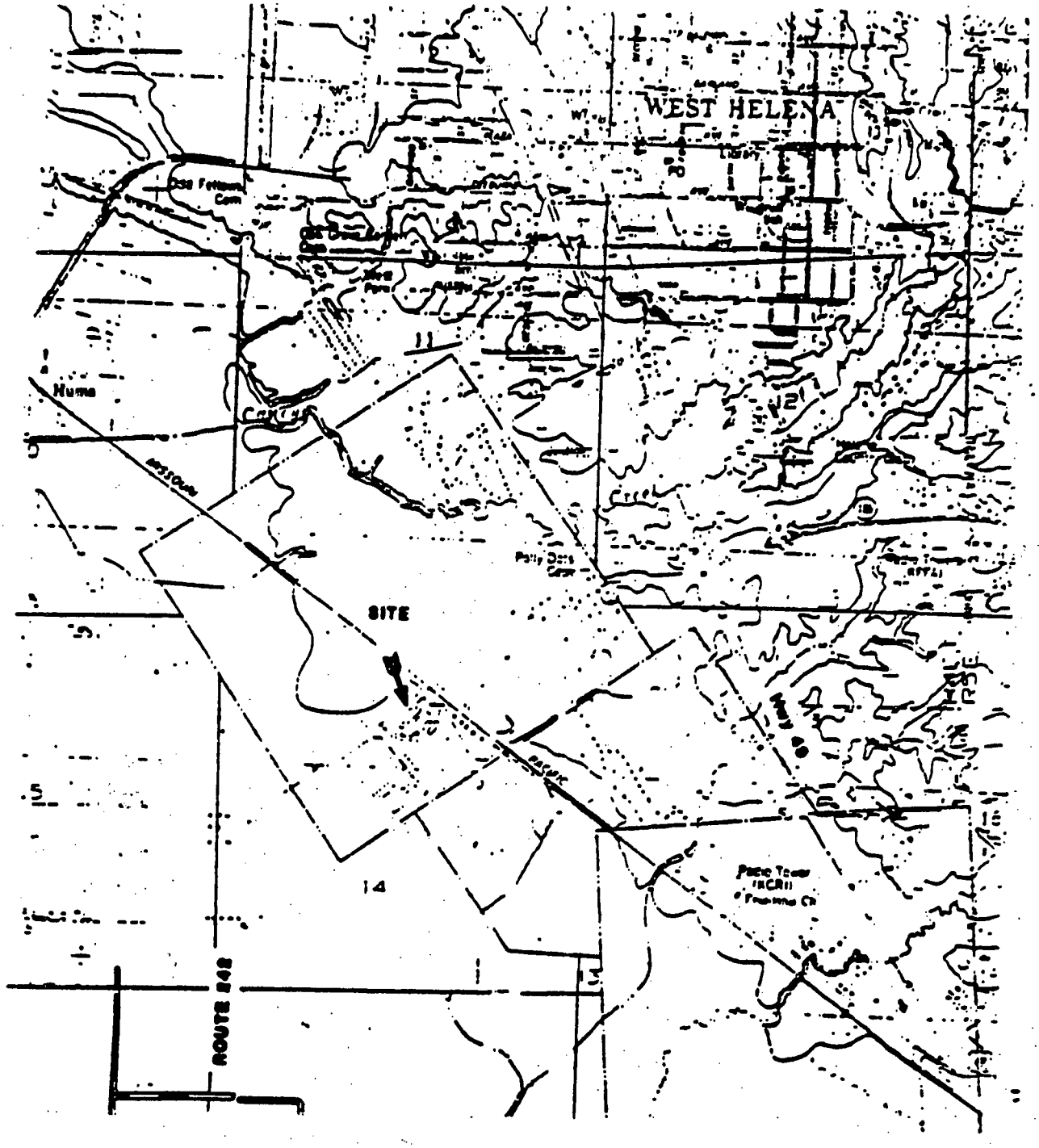

Exhibit 2-1

Site Location Map for the Cedar Chemical Corporation - West Helena site, West Helena, Arkansas (AR 361).

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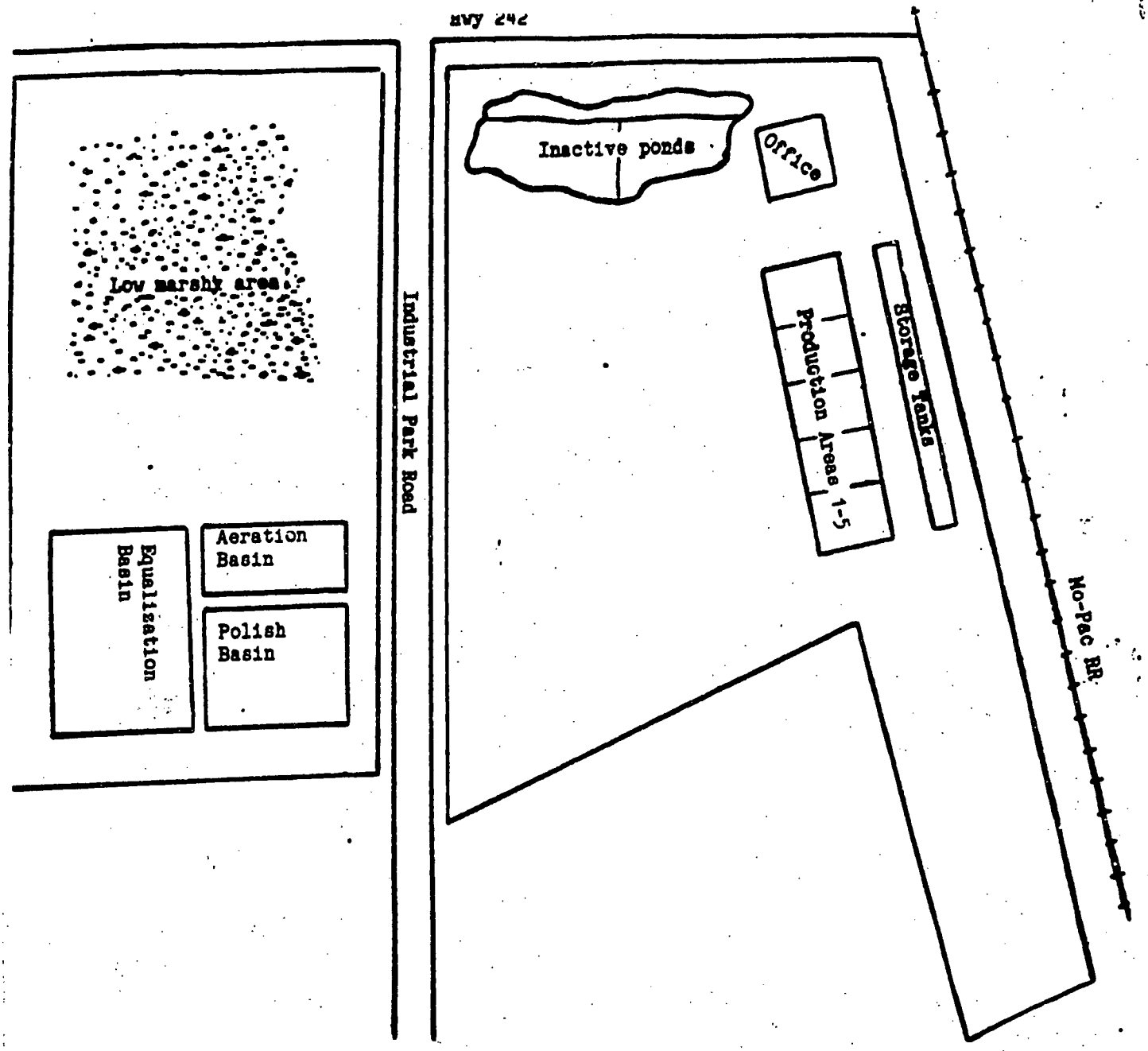


Exhibit 2-2

Site Map of Cedar Chemical Corporation, West Helena, Arkansas

esterification, acid and base hydrolysis, and polymerization (15). There are five production areas at the facility. A summary of the products formulated at each production area since 1980 is found in Exhibit 2-3.

Operations began at the site around 1970 with the manufacture of methoxychlor. In 1972 the chemical plant was sold to Jerry Williams who sold the plant to ANSEL later in 1972. In 1973, the plant was again purchased by Jerry Williams. By 1973, the plant was known as Eagle River Chemical. The name was later changed to Vertac, Inc. In 1986, the plant was sold to Cedar Chemical Corporation. Cedar Chemical Corporation currently operates the facility (15).

In 1972-1973, the facility began dumping waste chemicals in three unlined earthen ponds located at the facility. The dimensions of two of the ponds were approximately 120 feet by 150 feet. The third pond was approximately 120 feet by 30 feet. The ponds were bermed by the facility. Limestone was added to the narrow pond for the acid neutralization of dichloromaline and propionic acid. The other two ponds were used as waste disposal. Wash water from Helena Chemical's chemical formulation operations was also placed into the ponds. Helena Chemical stopped disposing of their wastes in the ponds around 1976-77 (15).

The ponds were closed in 1978. The closure procedure consisted of pumping the water from the ponds and then placing a clay cap consisting of native soil and bentonite over them. An aerial photograph owned by Vertac indicates the narrow pond was approximately 2 to 4 feet deep and the other two ponds were approximately 5 to 10 feet deep (15).

Exhibit 2-3

Production Volumes by Production Area Expressed as a % of Annual Revenues (47)

Production Area	Product	1980	1981	1982	1983	1984	1985	1986
1	Permethrin	10.98	13.60	18.39	18.36	22.36	17.29	24.70
2	Propanil	73.63	76.97	58.04	49.40	50.72	63.90	61.03
2 & 3	RP-10*	No Data						
3	Benzene Sulfonyl Chloride (BSC)	5.80	0.01					
3	SCI (Proprietary product for Schenectady Chemicals, Inc.)			0.70	1.41	0.07	1.83	3.26
3 & 4	Methylthiopinacolone oxide (MTPO)						0.80	5.66
4	Arsenicals				14.03	10.43	6.83	
4	Lannate	4.82	0.95					
4	RP-15**							5.31
5	Drag Reduction Agent	4.76	9.27	22.79	16.29	12.77	9.15	0.03

* RP-10 - Technical grade of TACKLE (Tradename)
** RP-15 - Chemical intermediate for the production of TACKLE

(Chemicals in RP-10 and RP-15 were not available at the time of the VSI.)

Source: Ref. 47

A wastewater treatment system was constructed onsite in 1977 for the treatment of water formerly discharged to the ponds. The wastewater treatment system, which is still active, consists of an API Separator (SWMU #62), Flow Equalization Basin (SWMU #64), an Aeration Basin (SWMU #65), two Clarifiers (SWMUs #66 and #67), and a Polish Pond (SWMU #68).

There are two NPDES-permitted discharges from the facility. All surface water runoff from the facility drains to the Stormwater Drainage System (SWMU #59). This system, in turn, drains to the Stormwater Sump (SWMU #60). When the capacity of the sump is exceeded, the system drains to NPDES-permitted Outfall #001. This outfall drains to a ditch adjacent to the facility (Industrial Park Ditch). Industrial Park Ditch drains to Beaver Bayou to Big Creek into the White River.

Any surface water not discharged through NPDES Outfall #001 are collected in the facility's Stormwater Sump (SWMU #60) prior to transfer to and treatment in the facility's wastewater treatment system. Effluent from the wastewater treatment system is pumped offsite through a 4.5 mile pipeline and discharges directly into the Mississippi River through NPDES-permitted Outfall #002.

2.3 Identification of Solid Waste Management Units

Seventy-four solid waste management units and one area of concern have been identified at the Cedar Chemical Corporation facility as a result of the PR and VSI.

A list of SWMUs is presented in Exhibit 2-4 and depicted in Exhibit 2-5. Exhibit 2-4 also identifies the regulatory status of SWMUs. A diagram of the water process flow and related SWMUs is illustrated in Exhibit 2-6.

Exhibit 2-4

Solid Waste Management Units at Cedar Chemical Corporation.

SWMU #	Name	Active	RCRA-Regulated
1 & 2	Railroad Loading and Unloading Sumps	Yes	No
3	Railroad Loading and Unloading Sump	No	No
4	Production Areas #1 and #2 Drainage System and Sump	Yes	No
5	Production Area #3 Drainage System and Sump	Yes	No
6	Production Area #4 Drainage System and Sump	Yes	No
7	Production Area #5 Drainage System and Sump	No	No
8	Boiler Blowdown Area Sump #1	Yes	No
9	Boiler Blowdown Area Sump #2	Yes	No
10	Laboratory Sump	Yes	No
11	Sump Near Main Tank Farm	Yes	No
12	Maintenance Shop Drainage System and Sump	Yes	No
13	Truck Scale Sump	Yes	No
14	Packaging Building Sump	Yes	No
15-17	Air Emissions Scrubbers #01, #02 and #03	No	No
18	Air Emissions Scrubber #04	Yes	No
19	Sump in Main Tank Farm Diked Area #1 (North)	Yes	No
20	Sump in Main Tank Farm Diked Area #1 (South)	Yes	No
21	Sump in Main Tank Farm Diked Area #2	Yes	No
22	Sump in Main Tank Farm Diked Area #3	Yes	No
23	Waste Storage Tank PE-209 in Main Tank Farm Diked Area #4	Yes	No

Exhibit 2-4

Solid Waste Management Units at Cedar Chemical Corporation.

(Continued)

SWMU #	Name	Active	RCRA-Regulated
24	Waste Storage Tank 002 in Main Tank Farm Diked Area #5	Yes	No
25	Sump in Main Tank Farm Diked Area #6	Yes	No
26	Sump in Main Tank Farm Diked Area #7	Yes	No
27	Tank B-109 in Main Tank Farm Diked Area #7	Yes	No
28	Waste Storage Tank B-112 in Main Tank Farm Diked Area #8	Yes (In process of closure	Yes
29	Sump in Main Tank Farm Diked Area #9	No	No
30	Waste Water Storage Tank B-102 in Main Tank Farm Diked Area #10	Yes	No
31	Sump in Main Tank Farm Diked Area #11	Yes	No
32	Sump in Main Tank Farm Diked Area #12	No	No
33	Tank N-204 in Main Tank Farm Diked Area #13	Yes	No
34	Tank N-201 in Main Tank Farm Diked Area #14	Yes	No
35	Tank N-205 in Main Tank Farm Diked Area #15	Yes	No
36	Tank N-206 in Production Area #4	Yes	No
37	Sump in Main Tank Farm Diked Area #16	Yes	No
38	Sump in Main Tank Farm Diked Area #17	No	No
39	Tank M-105 in Main Tank Farm Diked Area #17	No	No
40	Sump in Main Tank Farm Diked Area #18	No	No
41	Sump in Main Tank Farm Diked Area #19	No	No
42	Sump in Second Tank Farm Diked Area #1	Yes	No
43	Wastewater Tank 014 in Second Tank Farm Diked Area #3	Yes	No

Exhibit 2-4

Solid Waste Management Units at Cedar Chemical Corporation.

(Continued)

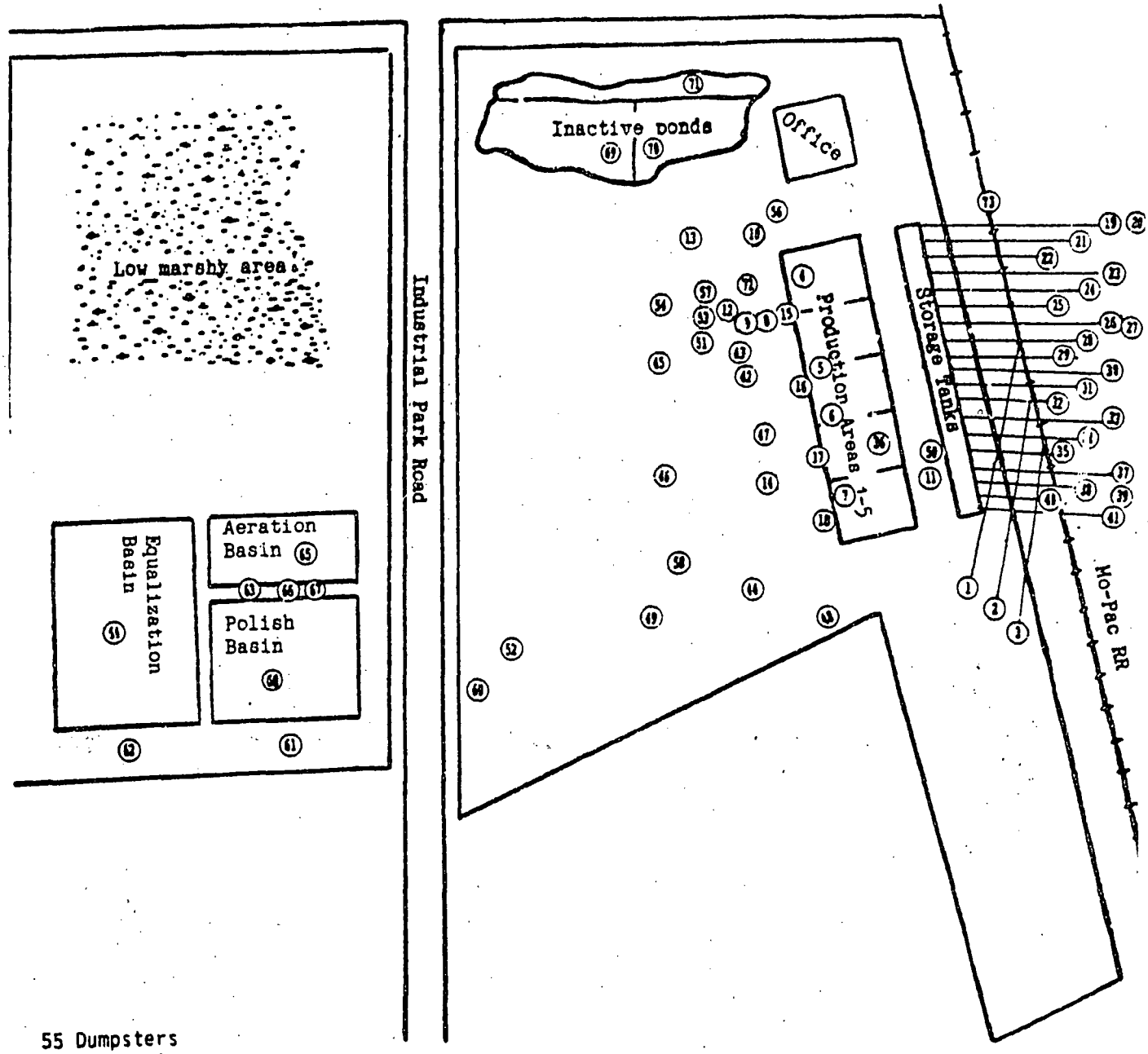
SWMU #	Name	Active	RCRA-Regulated
44	Hazardous Waste Storage Area	Yes (In process of closure)	Yes
45	Nonhazardous Waste Storage Area	Yes	No
46	Drum Storage Area	Yes	No
47	Drum Crushing Area	Yes	No
48	Waste Drum Staging Area	Yes	No
49	Scrap Drum Storage Wagons	Yes	No
50	Waste Drum Staging Area in Main Tank Farm Area	Yes	No
51	Waste Oil Drum	Yes	No
52	Drums	Yes	No
53	Solvent Cleaner Tank	Yes	No
54	Miscellaneous Drum Storage	Yes	No
55	Dumpsters	Yes	No
56	Laboratory Waste Rack Area	Yes	No
57	Warehouse Drum Storage Area	Yes	No
58	Loading/Unloading Dock Area	Yes	No
59	Stormwater Drainage System	Yes	No
60	Stormwater Sump	Yes	No
61	Wastewater Tank #1 Wastewater Treatment System	Yes	No
62	API Separator	Yes	No
63	Wastewater Tank #2 Wastewater Treatment System	Yes	No
64	Flow Equalization Basin	Yes	No

Exhibit 2-4

Solid Waste Management Units at Cedar Chemical Corporation.

(Continued)

SWMU #	Name	Active	RCRA-Regulated
65	Aeration Basin	Yes	No
66	Clarifier #1	Yes	No
67	Clarifier #2	Yes	No
68	Polish Pond	Yes	No
69	Inactive Pond #1	No	No
70	Inactive Pond #2	No	No
71	Inactive Pond #3	No	No
72	Drum Vault	No	No
73	Buried Drums	No	No
74	Loading/Unloading Area (Railroad Spur)	Yes	No



55 Dumpsters
59 Stormwater Drainage System
74 Buried Drums

Exhibit 2-5

Location of Solid Waste Management Units
Site Map of Vertac, West Helena, Arkansas

Reference 11

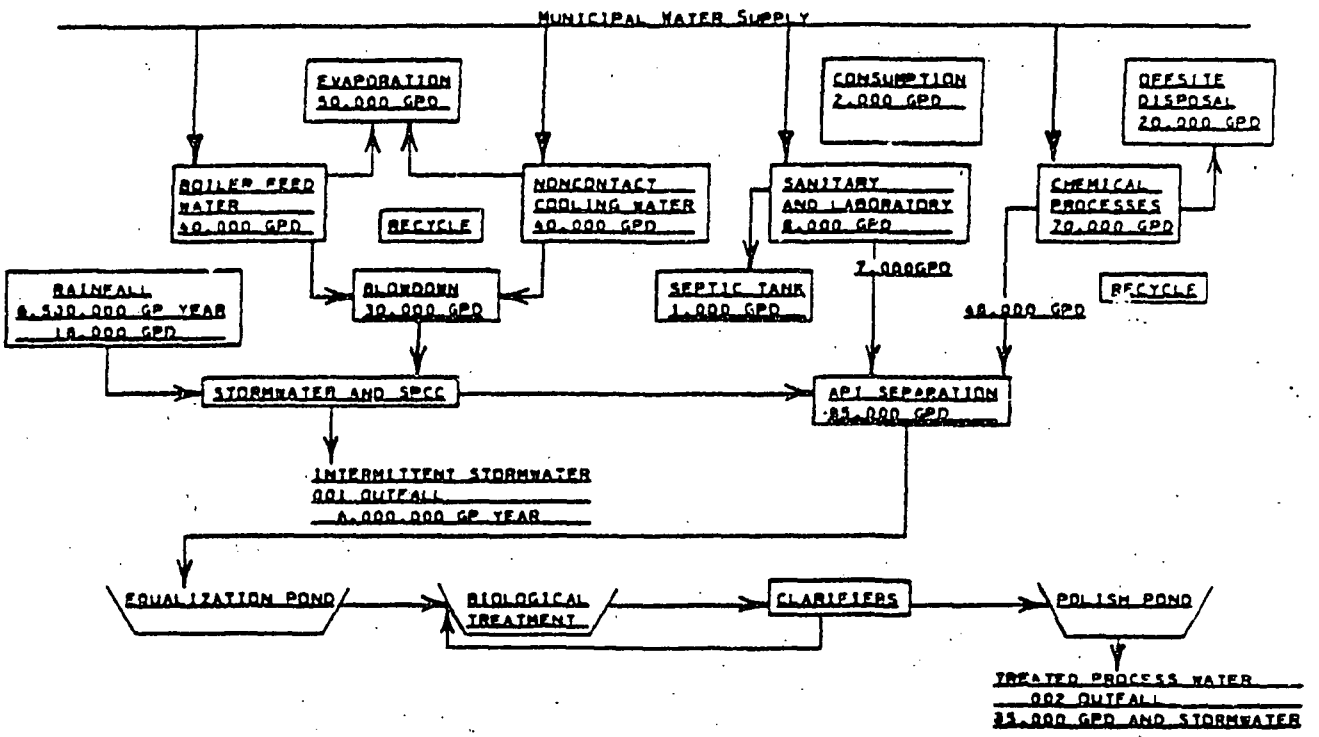


Exhibit 2-6

Schematic of Water Flow - Cedar Chemical Corporation - West Helena, Arkansas

Reference 13

Schematics of process flows for the production of permethrin, cypermethrin, propanil and the Drag Reduction Agent produced for ARCO Chemical Company are provided as Exhibits 2-7, 2-8, 2-9, and 2-10.

A list of the chemicals present at the Cedar Chemical Corporation facility in 1987, is provided in Exhibit 2.11 (47). Exhibit 2-12 also provides information on the volatility of the chemicals. Volatility of chemicals can vary depending on a variety of factors. Volatility is expressed in ordinal level measurements of "low," "moderate" and "high." Exhibit 2-12 provides information on the subsurface gas generation potential of many of the chemicals present at the facility. Exhibit 2-12a lists the major chemical groups present at the Cedar Chemical Corporation. Exhibit 2-12b lists the chemicals at the site by group. Exhibit 2-12c lists the type of potential gas generation (innocuos, toxic, or flammable) that could possibly occur if those groups were allowed to interact.

The facility does not discharge to a municipal wastewater treatment system. All potable and process water entering the plant site is either used in the formulation of the various products, treated by the onsite wastewater treatment system, or discharged through NPDES-permitted outfall. In addition to sanitary wastewater, the wastewater system treats process wastewater, shower room effluent, and laboratory effluent. Boiler blowdown and cooling tower effluent also normally enter the wastewater treatment system (47).

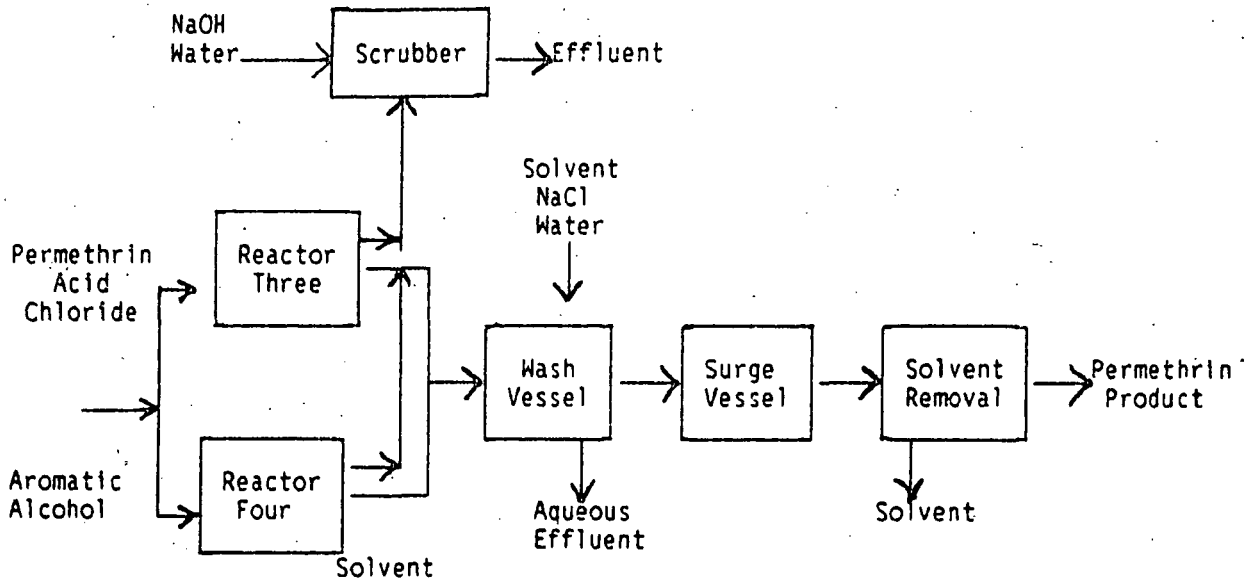


Exhibit 2-7

Process: Permethrin, Technical
(Reference 13)

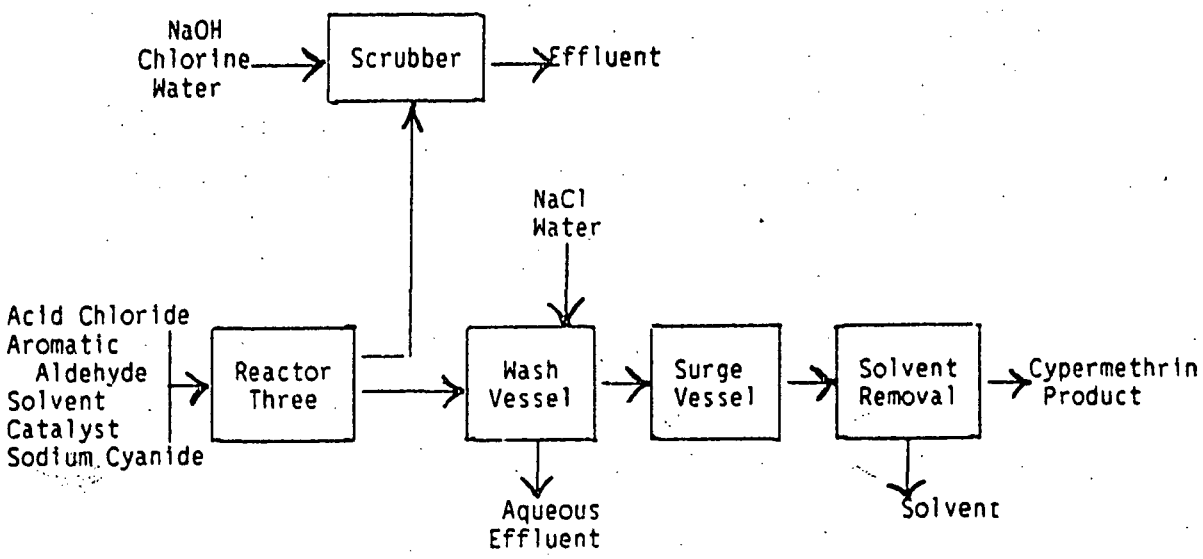


Exhibit 2-8

Process: Cypermethrin, Technical
(Reference 13)

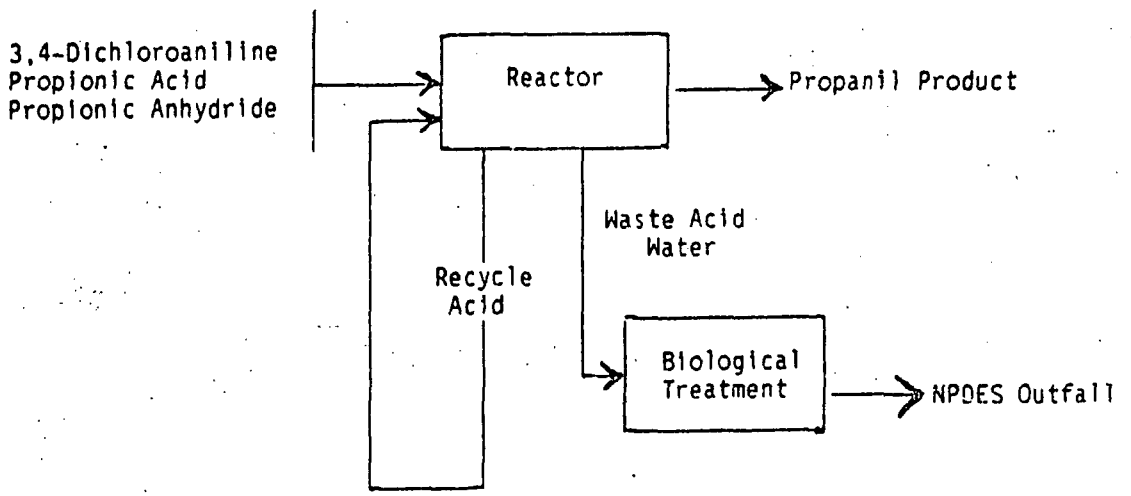


Exhibit 2-9

Process: Propanil
(Reference 13)

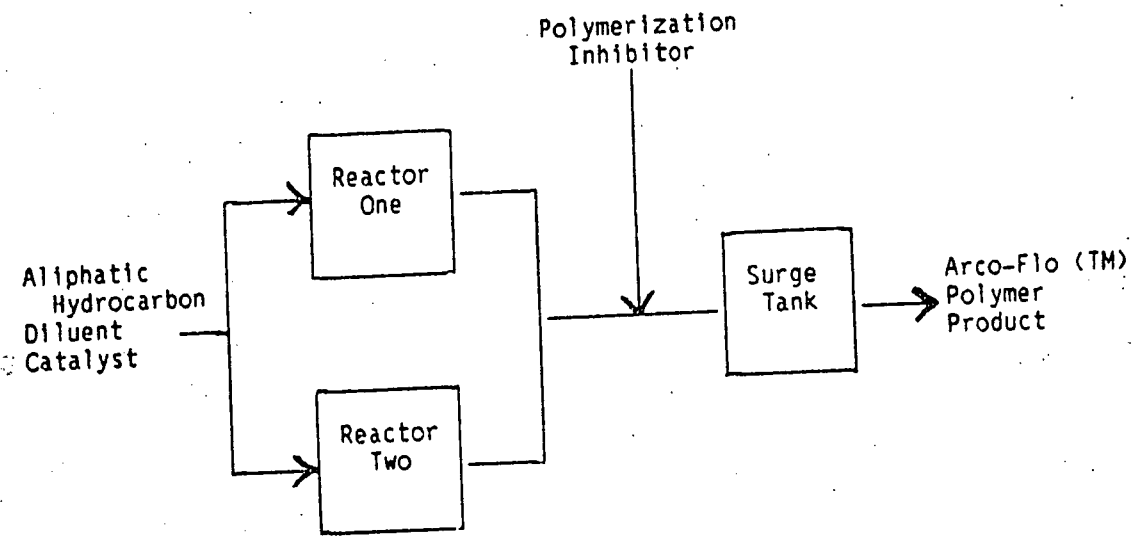


Exhibit 2-10

Process: Arco-Flo (TM) Polymer
(Reference 13)

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

Chemical		Volatility
Chemical Name:	2,6-Di-tert-butyl-4-sec-butylphenol	Low
Common Name :	Isonox - 132	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 200 F	
Health Hazard:	Irritant	
Health Reason:	Skin, Ingestion	
Chemical Name:	3,4-Dichloroaniline	Low
Common Name :	DCA; Benzeneamine, 3,4-Dichloro;	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Toxic	
Health Reason:		
Chemical Name:	3,4-Dichloropropionilide	Moderate
Common Name :	Stam M-4 HF Hercide; Propanil-4	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP108 F	
Health Hazard:	Toxic	
Health Reason:	Inhalation	
Chemical Name:	3,4-Dichloropropionanilide, Technical	Moderate
Common Name :	Propanil, Technical	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Toxic	
Health Reason:	Ingestion	
Chemical Name:	3-(hydroxymethyl) diphenyl	Low-Moderate
Common Name :	PBA; Phenoxy Benzyl Alcohol	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Allyl Chloride	High
Common Name :	3-Chloro-1-propene	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP (-25) F	
Health Hazard:	Highly Toxic	
Health Reason:		

Reference (47)

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Allyl n-butyl Trithiocarbonate	Moderate
Common Name :	ORFOM CO 300	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 135 F	
Health Hazard:	Irritant	
Health Reason:		
Chemical Name:	Anhydrous Ammonia	High
Common Name :	Ammonia	
Physical Haza:	Compressed Gas	
PHYS Reason :		
Health Hazard:	Toxic	
Health Reason:	Eye, Skin, Inhalation	
Chemical Name:	Aqua Ammonia	Moderate-High
Common Name :	NH4OH	
Physical Haza:	Corrosive	
PHYS Reason :		
Health Hazard:	Toxic	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Armul 1287	Low-Moderate
Common Name :	Propanil Emulsifier	
Physical Haza:		
PHYS Reason :		
Health Hazard:		
Health Reason:		
Chemical Name:	Butyl Mercaptan	Moderate-High
Common Name :	1-Butanethiol; Thiobutyl Alcohol	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 38 F	
Health Hazard:	Nervous System Toxin	
Health Reason:	Lung Toxin; Skin Hazard	
Chemical Name:	Calcium Oxide	Low-Moderate
Common Name :	Quicklime	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Inhalation, Ingestion	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Carbon Disulfide	High
Common Name :	Carbon Bisulfide	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP -22 F	
Health Hazard:	Nervous System Toxin	
Health Reason:	Skin Hazard	
Chemical Name:	Chlorine	Variable
Common Name :		
Physical Haza:	Oxidizer	
PHYS Reason :		
Health Hazard:	Highly Toxic	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Chlorsanthemic Acid	Moderate
Common Name :	PA; Permethrin Acid	
Physical Haza:	NA	
PHYS Reason :	Solvent may be Flammable	
Health Hazard:	Toxic	
Health Reason:	Eye, Skin, Ingestion	
Chemical Name:	Cypermethrin Concentrate (70%)	Moderate
Common Name :		
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 134 F	
Health Hazard:	Toxic	
Health Reason:	Ingestion	
Chemical Name:	Cypermethrin Process Wastewater	High
Common Name :	See Toluene	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 80 F	
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation	
Chemical Name:	Dimethylformamide	Low-Moderate
Common Name :	DMF	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 136 F	
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Dinitro-O-Cresol in Styrene	Low
Common Name :	DNOC in Styrene; DNOC; Styrene	
Physical Haza:	Flammable Liquid	
PHYS Reason :		
Health Hazard:	Highly Toxic	
Health Reason:	Skin, Inhalation, Ingestion	
Chemical Name:	Ethyl Chloride	High
Common Name :	Monochloroethane	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP (-45) F	
Health Hazard:	Acute intoxication; frost	
Health Reason:	Chronic hazard unknown	
Chemical Name:	Flomo Stam 1671	Low
Common Name :	Stam Emulsifier	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 102	
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Hydrochloric Acid	Variable
Common Name :	HCl; Muriatic Acid	
Physical Haza:	Corrosive	
PHYS Reason :		
Health Hazard:	Highly Toxic	
Health Reason:	Skin	
Chemical Name:	Isobutylene	High
Common Name :	2-Methylpropene	
Physical Haza:	Compressed Gas	
PHYS Reason :	FP (-112) F	
Health Hazard:	Irritant	
Health Reason:	Skin	
Chemical Name:	Isophorone	Low
Common Name :	Isoacetophorone; 3,5,5-trimethyl-2-cyclopropane carboxide	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 179	
Health Hazard:	Irritant	
Health Reason:	Eye, Inhalation	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	M-Phenoxybenzaldehyde	Moderate-High
Common Name :	PBA; 3-Phenoxybenzaldehyde	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Ingestion	
Chemical Name:	Methyl 3-(2,2-dichloroethenyl)	Moderate
Common Name :	PAM; DV Methyl Ester	
Physical Haza:	Combustible Liquid	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Inhalation	
Chemical Name:	Methyl Alcohol	High
Common Name :	Methanol, MeOH	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 54 F	
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Methyl Ethyl Sulfide	High
Common Name :	MES	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP (0) F est	
Health Hazard:	Target Organ Toxic	
Health Reason:	Eyes and Skin Inflammation, Lung	
Chemical Name:	Methyl Isobutyl Ketone	High
Common Name :	MIBK; 4-methyl-2-Pentanone	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 60 F	
Health Hazard:	Toxic	
Health Reason:	Lung	
Chemical Name:	Methyl Mercaptan	High
Common Name :	Methanethiol; Mercaptanmethane; MESH	
Physical Haza:	Compressed Gas; NFPA 2-4-	
PHYS Reason :	Flammable	
Health Hazard:	Irritant	
Health Reason:		

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Nitric Acid	Variable
Common Name :	HNO3	
Physical Haza:	Corrosive	
PHYS Reason :		
Health Hazard:	Toxic	
Health Reason:	Skin, Inhalation, Ingestion	
Chemical Name:	Ortho-Cresol	Moderate-High
Common Name :	2-Methyl Phenol	
Physical Haza:	Corrosive	
PHYS Reason :	Combustible Liquid	
Health Hazard:	Highly Toxic	
Health Reason:	Skin, Inhalation, Ingestion	
Chemical Name:	para-secondary Butylphenol	Low
Common Name :	PSBP	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin	
Chemical Name:	Permethrin Acid Chloride	Low-Moderate
Common Name :	PACl	
Physical Haza:	NA	
PHYS Reason :	Solvent may be Flammable	
Health Hazard:	Irritant	
Health Reason:	Corrosive Properties	
Chemical Name:	Permethrin Process Wastewater	High
Common Name :	See Toluene; See Tenneco 500/100	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 45 F	
Health Hazard:	Toxic	
Health Reason:	Eye, Skin, Ingestion	
Chemical Name:	Permethrin, Technical	Low-Moderate
Common Name :		
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Ingestion	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Propionic Acid	Low
Common Name :	Propionic acid; Pot acid; Methyl Acetic Acid	
Physical Haza:	Corrosive	
PHYS Reason :	Also Combustible FP 126 F	
Health Hazard:	Toxic	
Health Reason:	Skin	
Chemical Name:	Propionic Anhydride	Low
Common Name :	Anhydride; Propionyl Oxide; Methyl Acetic Anhydride	
Physical Haza:	Corrosive	
PHYS Reason :	FP 145 F	
Health Hazard:	Highly Toxic	
Health Reason:		
Chemical Name:	Sodium Carbonate	Low
Common Name :	Soda Ash	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Ingestion, Inhalation	
Chemical Name:	Sodium Chloride	Low
Common Name :	Salt	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	NA	
Health Reason:		
Chemical Name:	Sodium Cyanide	Low
Common Name :	Cyanide	
Physical Haza:	Corrosive	
PHYS Reason :		
Health Hazard:	Highly Toxic	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Sodium Hydroxide	Low
Common Name :	NaOH; Caustic Soda, Liquid	
Physical Haza:	Corrosive	
PHYS Reason :		
Health Hazard:	Highly Toxic	
Health Reason:	Eye, Skin, Ingestion	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Sodium Hypochlorite Solution	Low
Common Name :	Hypo; Bleach	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Styrene	High
Common Name :	Vinyl Benzene	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 88 F	
Health Hazard:	Toxic	
Health Reason:	Inhalation, Ingestion	
Chemical Name:	Tenneco 500/100	High
Common Name :	Xylenes, Mixed	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 100 F	
Health Hazard:	Toxic	
Health Reason:		
Chemical Name:	Tetraethyl Ammonium Bromide	Low
Common Name :	TEAB; Quaternary Ammonium Salt	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Skin, Ingestion	
Chemical Name:	Thionyl Chloride	High
Common Name :	Sulfur oxychloride; Sulfurous oxychloride	
Physical Haza:	Water Reactive	
PHYS Reason :	Forms SO2 and HCl	
Health Hazard:	Corrosive	
Health Reason:	Eye, Skin, Inhalation	
Chemical Name:	Toluene	High
Common Name :	Toluol; Methyl Benzene	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 45 F	
Health Hazard:	Irritant	
Health Reason:	Inhalation	

Exhibit 2-11

Chemicals Present at Cedar Chemical Corporation, 1987
West Helena, Arkansas

(Continued)

Chemical		Volatility
Chemical Name:	Toximul 804	Low
Common Name :	Propanil Emulsifier	
Physical Haza:	Combustible Liquid	
PHYS Reason :	FP 140 F	
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Ultra TX Acid	High
Common Name :	Toluene & Xylene Sulfonic Acid, Mixture	
Physical Haza:	NA	
PHYS Reason :		
Health Hazard:	Irritant	
Health Reason:	Eye, Skin, Inhalation, Ingestion	
Chemical Name:	Xylene	High
Common Name :	Xylol; methyl toluene; Dimethyl Benzene	
Physical Haza:	Flammable Liquid	
PHYS Reason :	FP 79 F	
Health Hazard:	Toxic	
Health Reason:	Eye, Skin, Inhalation, Ingestion	

Exhibit 2-12

Chemicals Present at Cedar Chemical Corporation, 1987
Gas Generation Potential by Chemical Groups

Exhibit 2-12a

Group No.	Group Name
1	Acids, Mineral, Non-oxidizing
2	Acids, Mineral, Oxidizing
3	Acids, Organic
4	Amines, Aliphatic and Aromatic
5	Caustics
6	Cyanides
7	Halogenated Organics
8	Mercaptans and Other Organic Sulfides
9	Polymerizable Compounds
10	Oxidizing Agents, Strong

Exhibit 2-12b

Group No.	Chemicals in Group
1	Hydrochloric Acid
2	Methyl Mercaptan
3	Chlorsanthemic Acid, Permethrin Acid Chloride, Propionic Acid Propionic Anhydride
4	3,4-dichloroaniline, 3,4-dichloropropionalide
5	Anhydrous Ammonia, Aqua Ammonia, Calcium Oxide, Sodium Carbonate Sodium Hydroxide
6	Sodium Cyanide
7	Allyl Chloride, Ethyl Chloride, Tetraethyl Ammonium Bromide
8	Butyl Mercaptan, Carbon Disulfide, Methyl Ethyl Sulfide Methyl Mercaptan, Ultra TX Acid
9	Styrene
10	Chlorine, Sodium Hypochlorite Solution

Exhibit 2-12c

	Interactions Between Groups		
Group No.	Innocuous Gas Generation	Toxic Gas Generation	Flammable Gas Generation
1		6, 7, 8, 10	6, 8
2	3	4, 6, 7, 8	6
3		6, 10	6
4		7, 10	
5			7
6		1, 2, 3, 10	1, 2, 3
7		1, 2, 4, 10	5
8		1, 2, 10	1
9		10	
10		1, 3, 4, 6, 7, 8, 9	

2.4 Summary of Wastes Handled

A summary of the manufactured products and wastestreams generated during their manufacture at the Cedar Chemical Corporation is provided below.

Production Area 1 - Permethrin/Cypermethrin

Permethrin/Cypermethrin are two generations of synthetic pyrethroid insecticides which have been manufactured during the period of 1980 to the present. Synthetic pyrethroids are toxic to fish; therefore, all waste from this process goes to an offsite deep well disposal. Over the years, four offsite disposal facilities have been used: Clean Land, Air, and Water, Inc. (now Rollins Environmental) in Louisiana; Chemical Resources, Inc., Tulsa, Oklahoma; CECOS International, Odessa, Texas; and Gibraltar, Winona, Texas.

Typical characteristics of this wastestream are as follows (note that the percentages do not add up to 100 percent due to rounding) (47):

Parameter	Permethrin	Cypermethrin
pH	10	9.5
Flash Point	45°F	80°F
Specific Gravity	1.07	1.08
Sodium Chloride	6.7%	9.3%
Sodium Sulfate	1.8%	1.9%
Sodium Cyanate	---	1.8%
Sodium Hypochlorite	---	Less than 0.1%
Methanol	2.1%	---
Toluene	7.7%	---
Tenneco 500	---	6.9%
Water	80.1%	80.1%
Miscellaneous Organics	1.6%	1.2%

Production Area 2 - Propanil

Propanil is a rice herbicide. The manufacture of Propanil (3,4 - dichloropropionanilide) has occurred in this production area in the period of 1980 thru 1987. The process operates for an average of five to six months per year. The process generates a weak acid before neutralization and is described as follows:

Propionic Acid	3 to 5%
Propanil	Less Than 0.5%
3,4 - Dichloroaniline	Less Than 0.5%
Water	95 to 97%
pH	2 to 4
Specific gravity	1.02
Flash Point	Greater Than 200 Degrees F

This weak acid is neutralized if necessary and treated in the wastewater treatment system. Final discharge is to the Mississippi River via NPDES Permit Outfall 002 (47).

Production Areas 2 and 3 - RP-10

RP-10 was a technical grade herbicide. The process entailed a nitration reaction generating a spent sulfuric acid. This acid was returned to Stauffer Chemical where it was recycled into virgin sulfuric acid; this wastestream had the following characteristics (47):

Sulfuric Acid	60%
Acetic Acid	25%
Nitric Acid	Less Than 1%
Ethylene Dichloride	Less Than 1%
RP-10 (Technical grade herbicide; tradename TACKLE)	Less Than 0.1%
Water	15%

A wash step following the nitration generated an aqueous weak acid which was neutralized in the manufacturing process. The resulting nonhazardous waste was then transferred to the wastewater treatment system (47); this wastestream had the following characteristics (47):

pH	6.06
RP-10 and isomers	0.2%
Ethylene Dichloride	Less Than 0.4%
Sodium Acetate	6.1%
Sodium Sulfate	1.1%
Flash Point	Greater Than 180 F
COD	25000 to 30000 mg/l

Production Area 3 - Benzene Sulfonyl Chloride

Benzene sulfonyl chloride (BSC) was manufactured as a chemical intermediate in 1980. A spent sulfuric acid generated in this process was neutralized with sodium hydroxide which was then sent to the wastewater treatment system. The last manufacture of benzene sulfonyl chloride was approximately June 1980. The wastestream consisted of approximately the following (47):

Sodium Sulfate	10 to 15%
Sodium Chloride	10 to 12%
Sodium Salt of BSC	2 to 3%
Water	70 to 80%

Production Area 3 - Alkylated Phenol

An alkylated phenol has been manufactured since 1982; the production operation has operated for about four months per year. The process alkylates para-secondary butyl phenol to form 2,6-di-tert-butylphenol. Three streams were generated with one being recycled back to the process along with laboratory samples:

- An aqueous wash is generated and treated in the biological treatment system (47); this wastestream has the following characteristics (47):

COD	58,000 mg/liter
pH	4.1
Flash Point	Greater Than 140 degrees F
Alkylated Phenols	24,000 mg/liter
Water	97%

- Distillation bottoms containing trialkylated phenol and impurities are either returned to the client company for further processing or shipped offsite for incineration. This stream is nonhazardous and contains no RCRA-listed wastes (47); this wastestream has the following characteristics (47):

pH	7.0
Specific Gravity	0.8535
Flash Point	Greater Than 150
Monoalkylated phenols	0.5%
Dialkylated phenols	2.5%
Trialkylated phenols	97%

Production Areas 3 and 4 - Methylthiopinacolone Oxide (MTPO)

Methylthiopinacolone oxide is an organic intermediate. The manufacturing process is a two-step reaction sequence where each step produces a wastestream (47).

- The first step produces an aqueous, reactive stream containing methyl mercaptide. This stream is treated in the manufacturing process with sodium hypochlorite until all mercaptide is converted to sulfate. The resulting stream is classified nonhazardous and is treated in the

wastewater treatment system; this wastestream typically has the following characteristics (47):

pH	6 to 10
Flash Point	Greater Than 140 F
Methyl Mercaptide	Non-Detectable
Monochloropinacolone and Methylthiopinacolone	Less Than 0.1%
Sodium Sulfate	10%
Water	80%

- The second process step produces a stream which is nonhazardous and is also treated in the biological treatment system. A scrubber liquor containing sodium hypochlorite is used in the neutralization of the first stream and consequently goes to the wastewater treatment system (47); this wastestream typically has the following characteristics:

pH	6 to 10
Flash Point	Greater Than 140 F
Monochloropinacolone/ Methylthiopinacolone/ Methylthiopinacolone Oxide	Less Than 0.1%
Sodium Sulfate	10%
Water	80%

Production Area 4 - Arsenical Herbicides

From 1983 through 1985 a variety of arsenical herbicides were formulated and packaged. Products included: Monosodium Methanearsonate, Disodium Methanearsonate, VERSAR-600, VERSAR-660, Bolls-Eye, Broadside, and Phytar-560. A formulation and packaging waste was generated in washing equipment and containers. The majority of this was recycled into formulations until the process was discontinued. Final washings were held in the Tank B-102 (SWMU #30) prior to disposal offsite by deep-well injection (47).

The wastestream from this production operation typically had the following waste characteristics (47):

pH	7.3
Density	8.6 lbs/gallon
Monosodium Methanearsonate/ Disodium Methanearsonate/Cacodylates measured as Arsenic	0.5 to 1.0 %
	0.1 to 0.5 %
Suspended Solids	500 to 600 mg/liter
Water	98 to 99 %

Production Area 4 - Lannate

A methomyl insecticide product (lannate) was formulated for DuPont in 1979 and 1980. In the formulation, a technical material was received in fiber drums with liners. The liners were removed and returned to the manufacturer. The remaining fiber drums were crushed and shipped to the local sanitary landfill. The last date of actual manufacturing was 1978 which pre-dates RCRA. The facility has not received any request from any regulatory agency to characterize this wastestream and had, therefore, no data readily available (47).

Production Area 4 - RP-15

RP-15 was a chemical intermediate manufactured from September 1986 through December 1986. The process generated an aqueous waste categorized by its m-Cresol content. The pH was maintained above pH 11 in order to keep the m-Cresol in solution as the potassium salt. For this reason the wastestream was also categorized as RCRA corrosive. The waste was stored in Tank B-102 (SWMU #30) prior to shipment offsite for deep-well injection disposal; the typical characteristics of this wastestream included the following (47):

pH	11 to 13
Flash Point	200 F
Specific Gravity	1.109
Potassium Chloride	13.3%
Potassium Cresolate	8.0%
Potassium Acetate	0.4%
Dimethylacetamide	0.2
Benzotrifluoride	Less Than 0.1%
RP-15	1.0%
Water	77.4%

Production Area 5

A polymer product, a drag reduction agent (DRA), was manufactured under contract with Atlantic-Richfield during the period 1980 through 1985. Samples and off-specification product were loaded directly from the Production Area to tank trucks for shipment to CECOS International for solidification and landfill. The polymer waste was characterized as follows (47):

pH	7 to 10
Density	6.6 lbs/gal
Kerosene	80 to 95%
DRA Co-polymer	11 to 12%
Ethylene Glycol	0.2 to 2%
Water	0 to 5%
Sodium Salts	Less Than 1%
Aluminum Salts	Less Than 1%
Titanium Salts	Less Than 1%
Viscoscity	73,000 cp
Flash Point	120-150 Degrees F

3.0 ENVIRONMENTAL SETTING

This section of the PR/VSI report covers meteorology and air quality, floodplain and surface water characteristics, geology and soil characteristics, groundwater quality, and receptor information.

3.1 Meteorology and Air Quality

Arkansas has the humid mesothermal climate characteristics of the southeast to southcentral United States. The area's rainfall is 50 inches per year with most precipitation occurring between February and April. Phillips County, as is the entire state of Arkansas, is an attainment area for all primary and secondary air pollutants. Site climatic data is summarized in Exhibit 3-1. A wind rose is presented as Exhibit 3-2.

Wind data is that of Memphis, Tennessee, which is located approximately 60 miles north/northeast of the facility. Data indicates that 4.48% of the time, the wind speed is 5 to 10 mph with calm winds 4.3% of the time.

Wind speed knots	Direction	% of total time	% of time at wind speed
5 - 9	south to north	4.7	10.5
10 - 14	south to north	5.1	17.8
15+	south to north	1.7	25.8

Therefore, the prevailing wind is south to north and is in that direction 12.3% of the time (13).

Exhibit 3-1

Site and Climatic Data, West Helena, Arkansas

Average Annual Temperature - 62.7°F
Winter Design - 20°F Dry Bulb
Summer Design - 95°F Dry Bulb
- 78°F Wet Bulb
Prevailing Wind, South West - Average Speed 8 mph

Climate Data from National Climatic Center

A. Rainfall and Evaporation (20 years of record)

Month	Precip (in)	Evaporation (in)	Net Accumulation (in)
January	4.72	1.29	+ 3.43
February	4.84	1.74	+ 3.10
March	5.43	3.30	+ 2.13
April	5.30	4.53	+ 0.77
May	4.25	5.78	- 1.53
June	3.23	6.79	- 3.56
July	3.73	6.85	- 3.12
August	3.07	6.59	- 3.46
September	3.27	5.01	- 1.74
October	2.91	3.47	- 0.56
November	4.09	2.10	+ 1.99
December	4.82	1.30	+ 3.52
	49.66	48.70	+ 0.96

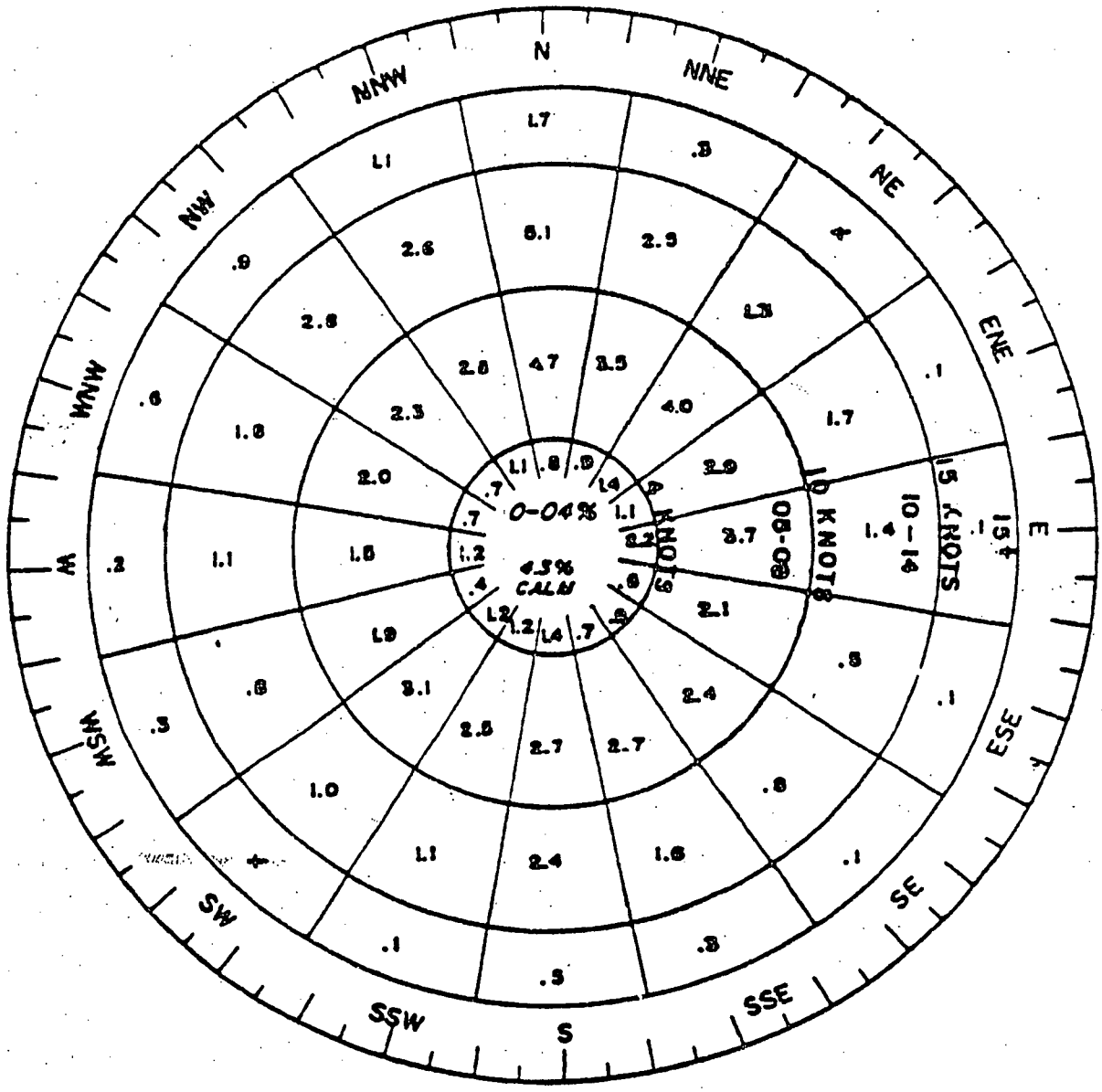
B. Summary

1. Accumulation from November to April + 14.94
2. Accumulation from May to October - 13.98

Reference (7)

Exhibit 3-2

Wind Rose, Memphis, Tennessee



0 - 4	knots	9.9%
5 - 9	knots	44.8%
10 - 14	knots	28.7%
over 15	knots	6.6%

Reference (13)

3.2 Floodplain

Ground surface elevations at Cedar Chemical Corporation vary from about 188 to 197 feet MSL. The site is approximately two miles west of the Mississippi River. The facility is not located in the 100-year floodplain (13).

3.3 Geology and Soils

The tertiary stratum underlying this region consists of the very dense and highly impermeable material of the Jackson Group. Above the Jackson are the deposits of the Mississippi River alluvial plain (3).

The near-surface soils were deposited as a result of annual overbank flow of the Mississippi River. The alluvial deposits are up to 150 feet deep and consist of coarse sand overlain by fine sand, with a top stratum of fine-grained soils. These fine-grained soils vary from silty clay and clayey silt to sandy silt and silty sand, with soil type at any specific location dependent on the nature of flood plain deposition. The fine-grained top stratum generally is 30 to 40 feet thick (3).

A 1981 hydrologic investigation report conducted for Cedar Chemical Corporation concluded that the coarse-grained sands in the area should exhibit hydraulic conductivities (coefficients of permeability) of 10^{-3} to 10^{-1} cm/sec and can serve as a groundwater supply source. The report contended that the hydraulic conductivities of the upper fine-grained soils will vary widely depending on the amount of clay in the material. These values would be

expected to range from 10^{-3} to 10^{-2} cm/sec for the silty sands and sandy silts and from 10^{-5} to 10^{-9} cm/sec and less for the predominantly clayey fractions (3).

3.4 Hydrology

Limited hydrologic information is currently available on this site. A hydrogeologic investigation was conducted for the site in 1981. However, the investigation was conjectural and speculative and drew no conclusions as to the potential for groundwater contamination (3). A groundwater monitoring program was recommended by EPA's FIT Contractor in 1986 (15) and a Consent Administrative Order issued by the Arkansas Department of Pollution Control and Ecology requires Cedar Chemical Corporation to conduct a hydrogeologic investigation and implement a monitoring program. Cedar Chemical Corporation has submitted a scope of work to the state. The investigation is scheduled to commence soon (41).

The information that is available on hydrology is presented in the discussion that follows. This discussion is divided into sections on surface water runoff, groundwater flow parameters, direction of groundwater flow and velocity estimate, and hydraulic conductivity.

Surface Water Runoff

The natural terrain in the area is generally flat. In general, the flow is southward to the Mississippi River with low overland flow velocities and some poorly drained areas where no modifications have been made to the original ground surface (3).

Ground-water Flow Parameters

The groundwater at the site is found at a depth of 12-20 feet (12). The hydrologic investigation conducted for the Cedar Chemical Corporation facility concluded that because of wide fluctuations in hydraulic conductivity with both horizontal and vertical distances in this region, laboratory tests for this factor had practically no usefulness (3).

The hydrologic investigation estimated a coefficient of permeability of 10^{-6} cm/sec for the upper 40 feet of stratum and an average porosity of 50% (3).

Direction of Ground-water Flow and Velocity Estimate

The 1981 hydrologic investigation concluded that the water table elevations in this area are related to the level of the Mississippi River. The investigation also concluded that the direction of flow will generally follow the surface flow, i.e., southward to the river (3).

Hydraulic Conductivity

The 1981 report estimated values of hydraulic conductivities based on soil properties obtained from the prior reports. The estimates range from 1×10^{-6} to 7×10^{-7} cm/sec for the clayey silt top layer of subsoil. The 1981 report concluded that these were in the lower mid-range of the values predicted by the geologic information (3).

3.5 Receptor Information

The Cedar Chemical Corporation facility is surrounded by a variety of land uses as shown in Exhibit 3-3. To the southwest and northeast of the facility are residential areas. There are no domestic wells within one mile of the site. The land immediately north of the Cedar Chemical Corporation facility is zoned for cultivation. The facility is located in an industrial park. The western and southern perimeter of the facility are bounded by industrial park property (13).

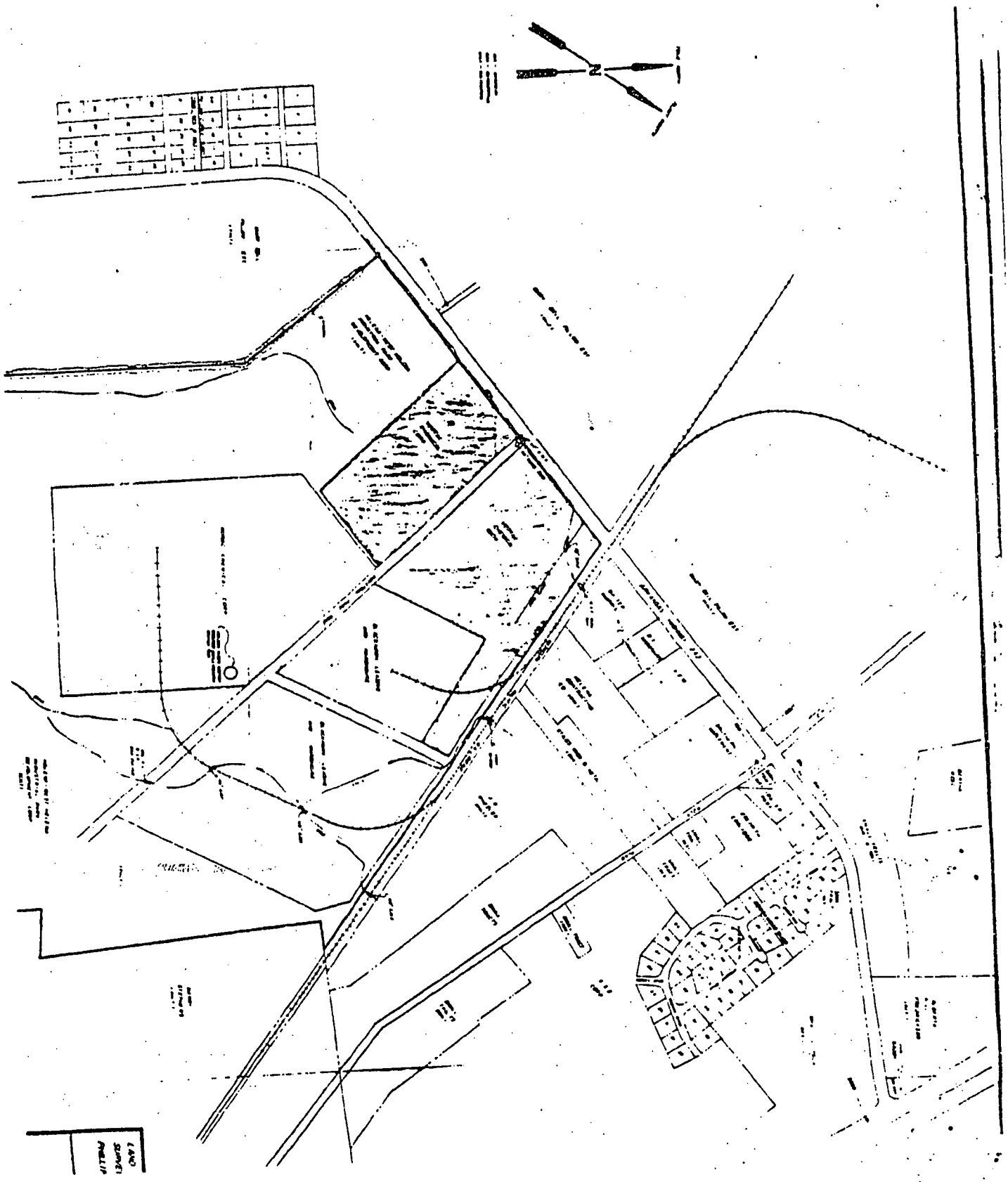


Exhibit 3-3

Surrounding Land Use
Cedar Chemical Corporation
Reference (47)

4.0 RELEASE PATHWAYS

This section provides an overview of the potential for the release of hazardous constituents to the various media. This potential is based on the combination of waste characteristics, facility characteristics and environmental setting.

4.1 Air Release Pathways

Wastes generated by the facility are organic in nature and can volatilize to some extent. Scrubbers are used in the main tank area and in the production areas primarily to control air emissions. However, there appears to be a potential pathway for air releases since much of the waste generated at Cedar Chemical Corporation is exposed to the ambient air.

4.2 Surface Water Pathways

Runoff is collected in an open Stormwater Drainage System (SWMU #59) and discharged to the Stormwater Sump (SWMU #60). Wastewater is pumped from the Stormwater Sump (SWMU #60) to the wastewater treatment system. Treated wastewater effluent is pumped from the wastewater treatment system through a 4.5 mile pipe through a NPDES-permitted outfall to the Mississippi. In the event of excessive rainfall the stormwater sump is bypassed and surface runoff is discharged offsite via a NPDES-permitted outfall to a drainage ditch (Industrial Park Ditch) adjacent to the facility. Soil contamination on the site has been documented. Thus, runoff from the facility could pick up hazardous constituents and transport them to surface waters.

4.3 Soil Pathway

During the VSI, areas of soil contamination were observed. A yellowish tint was observed at several locations at the facility. The facility representative indicated that the yellow stain areas may have been the result of Ansel Corporation, a company that manufactured a dinitro herbicide, dumping wastes on the site. Discoloration and spillage was noted along the railroad unloading area. Surface and subsurface soil sampling was conducted at the three Inactive Ponds in 1985. The sampling indicated that the subsurface material is contaminated with pesticides and other organic compounds and that the surface fill material is contaminated with pesticides (15). Thus, a pathway of wastes to soils at the facility is established.

4.4 Groundwater Pathway

A hydrogeologic investigation was conducted for the site in 1981. However, the investigation was conjectural and speculative and drew no conclusions as to the potential for groundwater contamination (3). A groundwater monitoring program was recommended by EPA's FIT Contractor in 1986 (15) and a Consent Administrative Order issued by the Arkansas Department of Pollution Control and Ecology requires Cedar Chemical Corporation to conduct a hydrogeologic investigation and implement a monitoring program (41). Releases from the facility's SWMUs to groundwater are possible.

5.0 DESCRIPTIONS OF SOLID WASTE MANAGEMENT UNITS

This section presents detailed descriptions of each solid waste management unit identified during the PR and VSI. These descriptions encompasses unit (SWMU) description, dates of operation, wastes managed, release controls, history of releases and release potential to soil/groundwater, surface water, and air, plus the potential to generate subsurface gas.

5.1 SWMUs #1 and #2 - Railroad Loading and Unloading Sumps (Photo #1 (A.2-10))

5.1.1 Information Summary

Unit Description: Two identical concrete sumps are located in an unpaved area along the railroad tracks next to the Main Tank Farm (Exhibit 2-5). The unit is located in a depressed area of soil. The units are constructed of 6-inch thick concrete and are approximately 2 feet by 3 feet by 2 feet deep. The sumps are used to contain spillage that may occur during loading and unloading of railroad tank cars. The sumps are directly underneath an outlet valve, through which product, raw material, or waste is pumped. There were no overflow controls observed during the VSI. During loading/unloading, an additional hose or piping is connected to the outlet valve. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for these units are from the 1970s to the present.

Wastes Managed: These units manage any leakage which may occur during the loading/unloading operation. These include any of the raw materials, products listed in Exhibit 2-11 or wastestreams described in Section 2-4.

Release Controls: The units are constructed of concrete. However, the integrity of these sumps could not verified during the VSI. The units are located above a depressed area of soil that appeared to have no outflow to surface water.

History of Releases: There is no documented release history for these units. There was no visible sign of release from these units observed during the VSI.

5.1.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the integrity of the unit could not be determined during the VSI.

- Surface Water: The potential for release to surface water is low because there was no evidence that wastes contained in the units had overflowed from them and any overflow that did occur would have been contained in the adjacent depressed area of soil.

- Air: The potential for release to air is moderate because of the potentially volatile nature of the constituents of the wastes managed by the units and because the units have open tops.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the integrity of the units could not be determined during the VSI.

5.2 SWMU #3 - Railroad Loading and Unloading Sump (Photo #2 (A.2-11))

5.2.1 Information Summary

Unit Description: A severely deteriorated concrete sump is located in an unpaved area along the railroad tracks next to the Main Tank Farm (Exhibit 2-5) west of the two operational sumps. The sump is approximately 2 feet by 3 feet by 2 feet deep. The unit is clearly disfunctional and is no longer used. The sides of the unit had deteriorated and crumbled inward. There were no liquids detected in the unit at the time of the VSI. The sump was used to contain spillage that had occurred during loading and unloading of railroad tank cars. The facility representative indicated that the unit was not used in its deteriorated state (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the 1980s. This unit was not in operation at the time of the VSI.

Wastes Managed: This unit managed spillage from the loading and unloading process.

Release Controls: The unit was constructed of concrete. The unit is located above a depressed area of soil that appeared to have no outflow to surface water.

History of Releases: There is no documented release history for this unit. Although severe deterioration of the unit was observed, there was no visible sign of release from this unit observed during the VSI.

5.2.2 Release Potential:

- Soil/Groundwater: The past potential for release was high due to the severe deterioration noted during the VSI. There is no present and ongoing potential for release to soil/groundwater because the unit is no longer used.

- Surface Water: The past potential for release was low because any overflow from this unit would have been contained in the adjacent depressed area of soil. There is no present and ongoing potential for release to surface water because the unit is no longer used.

- Air: The past potential for release was moderate because of the potentially volatile nature of the wastes managed and because the unit had an open top. There is no present and ongoing potential for release to air because the unit is no longer used.

- Subsurface Gas: The past potential for release was high due to the severe deterioration noted during the VSI. There is no present and ongoing potential for subsurface gas generation because the unit is no longer used.

5.3 SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

(Photo #3 (A.4-15), Photo #4 (A.4-16))

5.3.1 Information Summary

Unit Description: This unit is located in Production Areas #1 and #2. Production Areas #1 and #2 are used primarily to produce permethrin and propanil. The Production Areas run parallel to the Main Tank Farm on the northern end of the facility. The location of this unit is shown in Exhibit 2-5. The unit is a drainage system and sump that is built into the concrete floor of the Production Area. The drainage system is a channel that measures approximately 12 inches across by 6 inches deep. The drainage system runs along the floor of the Production Areas. The Production Area is surrounded with a 6-inch curb. The drainage system is covered with a metal grate and drains to a sump. The sump is constructed of concrete covered with a metal cover. The dimensions of the sump are approximately 10 feet by 10 feet by 6 feet deep. The sump is reportedly equipped with level recorders and high level alarms (2). These devices were not observed during the VSI (46).

According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The drainage system and sump receive wastes generated during the production process. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages wastes from Production Area #1 and #2. Production Areas #1 and #2 are used primarily to produce permethrin and propanil. A detailed analysis of the wastestreams produced by the manufacture of the products produced in these Production Areas is provided in Section 2-4.

Release Controls: The unit is located within a curbed Production Area. According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The sump is reportedly equipped with a level recorder and high level alarm (2). These devices were not observed during the VSI (46). The Production Area is curbed with a 6-inch to 8-inch concrete curb. The sump was covered with a metal plate. The area surrounding the Production Area is paved with concrete.

History of Releases: The concrete surface adjacent to the unit was heavily stained. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be determined during the VSI.

5.3.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a curbed Production Area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to its location within a concrete curbed Production Area. This release potential is, however, dependent on the ability of the curbed Production Area to contain any spills and thereby prevent any potential release to surface water.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes that may be managed and since the drainage system has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.4 SWMU #5 - Production Area #3 Drainage System and Sump

(Photo #5 (A.4-11), Photo #6 (A.4-12))

5.4.1 Information Summary

Unit Description: This unit is located in Production Area #3. Production Area #3 is currently used primarily for the production of an alkylated phenol. The Production Areas run parallel to the Main Tank Farm on the northern end of the facility. The location of this unit is shown in Exhibit 2-5. The unit is a drainage system and sump that is built into the concrete floor of the Production Area. The drainage system is approximately 12 inches across by 6 inches deep. The drainage system runs along the floor of the Production Area. The Production Area is surrounded with a 6-inch curb. The drainage system is covered with a metal grate and drains to a sump. The sump is constructed of concrete and covered with a metal cover. The dimensions of the sump are 10 feet by 10 feet by 6 feet deep. The sump is reportedly equipped with a level recorder and a high level alarm (2). These devices were not observed during the VSI (46).

According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The drainage system and sump receive wastes generated during the production process. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the mid-1970s to present.

Wastes Managed: This unit manages wastes generated during the production process. Production Area #3 is currently used primarily for the production of alkylated phenol. Wastes generated during the production process for products manufactured in this Production Area are summarized in Section 2-4.

Release Controls: The unit is located within a curbed Production Area. According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The Production Area is curbed with a 6-inch to 8-inch concrete curb. The sump was covered with a metal plate (13). The area surrounding the Production Area is paved with concrete. The sump is reportedly equipped with a level recorders and a high level alarm (2). These devices were not observed during the VSI (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the sump could not verified during the VSI.

5.4.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a curbed Production Area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to its location within a concrete curbed Production Area. This release potential is, however, dependent on the ability of the curbed Production Area to contain any spills and thereby prevent any potential release to surface water.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes that may be managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.5 SWMU #6 - Production Area #4 Drainage System and Sump

(Photo #7 (A.4-6), Photo #8 (A.4-8))

5.5.1 Information Summary

Unit Description: This unit is located in Production Area #4. Production Area #4 was used for the production of arsenicals and lannate. The area is now used for the production of methylthiopinacolone oxide. The Production Areas run parallel to the Main Tank Farm on the northern end of the facility. The location of this unit is shown in Exhibit 2-5. The unit is a drainage system and sump that is built into the concrete floor of the Production Area. The drainage system is approximately 12 inches across by 6 inches deep. The drainage system runs along the floor of the Production Area. The drainage system is covered with a metal grate. The system drains to a sump, which is constructed of concrete and covered with a metal grate. The dimensions of the sump are approximately 4 feet by 4 feet by 4 feet. The sump is reportedly equipped with a level recorder and a high level alarm (2). These devices were not observed during the VSI (46).

According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The drainage system and sump receive wastes generated during the production process. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the mid 1970s to present.

Wastes Managed: This unit manages wastes generated during the production process. Production Area #4 was previously used for the production of arsenicals and lannate. The area is now used for the production of methylthiopinacolone oxide. Wastes generated during the production process for products manufactured in this Production Area are summarized in Section 2-4.

Release Controls: The unit is located within a curbed Production Area. The Production Area is curbed with a 6-inch to 8-inch concrete curb (13). According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The area surrounding the Production Area is paved with concrete. The sump is reportedly equipped with a level recorder and a high level alarm (2). These devices were not observed during the VSI (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.5.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a curbed Production Area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to its location within a concrete curbed Production Area. This release potential is, however, dependent on the ability of the curbed Production Area to contain any spills and thereby prevent any potential release to surface water.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes that may be managed and because the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.6 SWMU #7 - Production Area #5 Drainage System and Sump (Not operational)

(Photo #9 (A.4-4), Photo #10 (A.4-5))

5.6.1 Information Summary

Unit Description: This unit is located in Production Area #5. Production Area #5 is not currently operational. It was used for the production of Drag Reduction Agent. The production areas run parallel to the main tank farm on the northern end of the facility. The location of this unit is shown in Exhibit 2-5. The unit is a drainage system and sump that is built into the concrete floor of the Production Area. The drainage system is approximately 12 inches across by 6 inches deep. The drainage system runs along the floor of the Production Area. The drainage system is covered with a metal grate. The system drains to a sump which is constructed of concrete and covered with a metal cover. The dimensions of the sump are approximately 12 feet by 8 feet by 4 feet to 6 feet deep. The sump is reportedly equipped with a level recorder and a high level alarm (2). These devices were not observed during the VSI (46).

According to the facility representative, the curbed Production Area was capable of holding the contents of the largest tank located within it (47). The drainage system and sump received wastes generated during the production process (46). According to a facility representative, wastes collected in the unit were analyzed on a regular basis. Wastes that were suitable for treatment in the wastewater treatment system were pumped into it. Wastes that were not suitable for treatment in the wastewater treatment system were shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the mid 1970s to 1985.

Wastes Managed: This unit previously managed wastes generated during the production process. Production Area #5 is not currently operational. It was used for the production of a polymer product manufactured for Atlantic Richfield Corporation. A summary of the wastrstream for this product is provided in Section 2-4.

Release Controls: The unit is located within a curbed Production Area. The Production Area is curbed with a 6-inch to 8-inch concrete curb. The sump was covered with a metal plate (13). The area surrounding the Production Area is paved with concrete. The sump is reportedly equipped with level recorders and high level alarms (2). These devices were not observed during the VSI (46). According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.6.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was low because of the design and construction of the unit and its location within a curbed Production Area. There is no potential for ongoing release because the unit is not currently operational.

- Surface Water: The past potential for release was low due to its location within a concrete curbed Production Area. This release potential was, however, dependent on the ability of the curbed Production Area to contain any spills and thereby, prevent any potential release to surface water. There is no potential for ongoing release to surface water because the unit is not currently operational.

- Air: The past potential for release to air was moderate because there were volatile constituents in the wastes that may have been managed. There is no potential for ongoing release because the unit is not currently operational.

- Subsurface Gas: The past potential for subsurface gas generation was low because of the design and construction of the unit. There is no potential for ongoing release because the unit is not currently operational.

5.7 SWMU #8 - Boiler Blowdown Area Sump #1 (Photo #11 (A.1-9))

5.7.1 Information Summary

Unit Description: This unit is a below-ground sump located immediately to the east of the boiler house north of Boiler Blowdown Area Sump #2 (SWMU #9). The location of this unit is shown in Exhibit 2-5. The dimensions of this unit are 2 feet by 4 feet by 4 feet deep. This unit is constructed of concrete and receives wastewater and surface runoff from the boiler blowdown area. Overflow from the sump drains directly to the Stormwater Drainage System (SWMU #59) onto the wastewater treatment system. The area adjacent to the sump is paved with concrete (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages boiler blowdown and surface runoff. Surface runoff could contain the dilluted residues of spillage of any of the chemicals used or produced on site. A list of chemicals present on the site in 1987 is provided in Exhibit 2-11.

Release Controls: The unit and the area surrounding the unit is concrete. The surrounding area is sloped to the sump. The sump overflow drains to the wastewater treatment system.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the sump could not be evaluated at the time of the VSI.

5.7.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the unit is located in a paved area that is sloped to the unit.

- Air: The potential for release to air is moderate because of the dilluted concentration of volatiles present in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.8 SWMU #9 - Boiler Blowdown Area Sump #2 (Photo #12 (A.1-8))

5.8.1 Information Summary

Unit Description: This unit is a below-ground sump located immediately to the east of the Boiler House south of Boiler Blowdown Area Sump #1 (SWMU #8). The location of this unit is shown in Exhibit 2-5. The dimensions of this unit are 4 feet by 6 feet by 2 feet deep. The unit is constructed of concrete. This unit receives wastewater and surface runoff from the boiler blowdown area. Overflow from the sump drains directly to the Stormwater Drainage System (SWMU #59) and onto the wastewater treatment system (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages boiler blowdown and surface runoff. Surface runoff could contain the dilluted residues of spillage of any of the chemicals used or produced on site. A list of chemicals present on the site in 1987 is provided in Exhibit 2-11.

Release Controls: The unit and the area surrounding the unit is concrete. The surrounding area is sloped to the sump. The sump overflow drains to the wastewater treatment system.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the sump could not be evaluated at the time of the VSI.

5.8.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the unit is located in a paved area that is sloped to the unit.

- Air: The potential for release to air is moderate because of the dilluted concentration of volatiles present in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.9 SWMU #10 - Laboratory Sump (Photo #13 (A.1-2))

5.9.1 Information Summary

Unit Description: This unit is a below-ground sump located adjacent to the laboratory building in the northwest corner of the facility. The location of this unit is shown in Exhibit 2-5. This unit has an approximate capacity of 6000 gallons. The dimensions of this unit are approximately 12 feet by 6 feet by 4 feet. This unit is constructed of concrete. The laboratory sump is equipped with a level controlled automatic pump. This unit receives wastewaters from the laboratory, shower room, washing machines and the front office. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: This unit began operation in the mid 1970s. The unit was enlarged in the late 1970s and is currently operational.

Wastes Managed: This unit manages laboratory wastes and domestic wastes. Any raw material or product wastes absorbed unto clothes would be present in the wastes managed by this unit. Any of the chemical constituents listed in Exhibit 2-11 could be present in the wastes managed by the unit (46).

Release Controls: The unit is concrete and covered with a metal top, equipped with a level controlled pump.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be determined during the VSI.

5.9.2 Release Potential

- The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the unit is equipped with a level controlled pump.

- Air: The potential for release to air is moderate because of the diluted concentration of volatiles in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.10 SWMU #11 - Sump Near Main Tank Farm (Photo #14 (A.1-16))

5.10.1 Information Summary

Unit Description: This unit is located in the Main Tank Farm area. The location of this unit is shown in Exhibit 2-5. The dimensions of this unit are 3 feet by 3 feet by 3 feet deep. This unit is constructed of concrete. Deterioration of the concrete pad surrounding the unit was noted during the VSI. This unit receives surface runoff and cooling tower blowdown. Overflow from the sump drains to the Stormwater Drainage System (SWMU #59) and onto the wastewater treatment system (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages cooling tower blowdown and surface runoff. Surface runoff could contain the diluted residues of spillage of any of the chemicals used or produced on the site. Any of the chemical constituents listed in Exhibit 2-11 could be present in the wastes managed by the unit.

Release Controls: The unit is concrete. The area adjacent to the unit is concrete and is sloped to the unit.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. Deterioration of the adjacent concrete pad (i.e., surface cracking) was observed during the VSI.

5.10.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the area adjacent to the unit is concrete and is sloped toward the unit.

- Air: The potential for release to air is moderate because of the diluted concentration of the volatile constituents in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.11 SWMU #12 - Maintenance Shop Drainage System and Sump

(Photo #15 (A.4-2), Photo #16 (A.4-3))

5.11.1 Information Summary

Unit Description: The drainage system is located in the maintenance shop. The location of this unit is shown in Exhibit 2-5. The drainage system is a concrete channel approximately 1 foot across by 6 inches deep and approximately 40 feet long. The system drains to a sump adjacent to the outside of the maintenance building. The sump is approximately 5 feet by 5 feet by 3 feet deep and is covered with a metal grate. This unit receives floor spillage from maintenance shop operations including oils, and paints (low volatility wastes). There were no containers in the maintenance facility, observed during the VSI, which contained wastes of sufficient capacity to overfill the Drainage System and Sump. Wastes contained in the unit are drained to the wastewater treatment system (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages floor spillage from maintenance shop operations. Typical wastes present in the maintenance shop include fuels, oils, and paints.

Release Controls: This unit is constructed of concrete. The area immediately adjacent to the unit is constructed of concrete. The unit drains to the wastewater treatment system.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.11.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the capacity of the sump exceeds the volume of waste material likely to be released to it.

- Air: The potential for release to air is moderate because of the low volatility of the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit and because of the low volatility of the wastes managed. However, the integrity of the concrete could not be verified during the VSI.

5.12 SWMU #13 - Truck Scale Sump (Photo #17 (A.2-18))

5.12.1 Information Summary

Unit Description: This unit is a below-ground sump located in the western portion of the facility. The location of this unit is shown in Exhibit 2-5. The dimensions of this unit are approximately 3 feet by 3 feet by 3 feet deep. This unit is constructed of concrete. This unit receives wastes generated as incoming and outgoing trucks containing various materials are weighed. There was no evidence of large spills to the sump. The facility representative indicated that the unit receives a small volume of wastes. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages occasional spillage of various chemicals (either raw materials or products listed in Exhibit 2-11) from incoming and outgoing trucks.

Release Controls: This unit is constructed of concrete and the adjoining area is paved with concrete and slopes downward to the unit. No other release controls are present.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.12.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because the unit is below-grade and manages a low volume of wastes and the adjoining paved area slopes downward to the unit.

- Air: The potential for release to air is low because of the low volume of wastes managed at this unit.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. However, the integrity of the concrete could not be verified during the VSI.

5.13 SWMU #14 - Packaging Building Sump (No Photo Available)

5.13.1 Information Summary

Unit Description: This unit is located adjacent to the Packaging Building. The location of this unit is shown in Exhibit 2-5. This unit is constructed of concrete. The dimensions of this unit are 3 feet by 3 feet by 2 feet deep. Products produced by the facility that are shipped in 55-gallon drums are packaged in the Packaging Building. If there were a spill in the building, the spill would drain to the unit. The sump is equipped with a level controlled automatic pump. There was no evidence of spillage observed at the time of the VSI. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages spills in the Packaging Building. The spills could be any of the product chemicals listed in Section 2.4 depending on what was being packaged.

Release Controls: This unit and its surrounding area is constructed of concrete. The sump is equipped with a level controlled automatic pump.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the sump could not be determined during the VSI.

5.13.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because any spillage that is likely to occur during the packaging process would not exceed the capacity of the sump.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes that may be managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.14 SWMUs #15, #16, #17 - Air Emissions Scrubbers #01, #02 and #03

(Photo #18 (A.4-18))

5.14.1 Information Summary

Unit Description: These units are located in Production Areas #1, #2 and #3. The general location of the unit is shown in Exhibit 2-5. These units are used to scrub air emissions vented to them from assorted tanks. These units are constructed of steel. The dimensions of each of these units are approximately 18 inches by 18 feet. Four tanks are vented to Air Emissions Scrubber #01 (SWMU #15) PE-204 (Recycled Brine), PE-205 (Recycled Toluene), PE-209 (Wastewater Tank - SWMU #23) and PE-212 (Hydrochloric Acid). Scrubber liquor is held in Tank PE-206. Two tanks are vented to Air Emissions Scrubber #02 (SWMU #16), Tank PE-213 (Detox Tank/Cypermethrin), and Tank PE-218 (Sodium Cyanide). No tanks are currently vented to Air Emissions Scrubber #03 (SWMU #17), which is not currently operational.

Dates of Operation: The dates of operation for SWMUs #15 and #16 are from the 1970s to the present. SWMU #17 was operational from the 1970s to the mid 1980s.

Wastes Managed: These units manage gaseous emissions from tanks of chemicals used in the production process. The tanks of chemicals include brine, toluene, hydrochloric acid, and sodium cyanide.

Release Controls: The units are closed process units and are located within curbed Production Areas.

History of Releases: There is no documented release history for these units. There were no visible signs of releases from these units observed during the VSI.

5.14.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because the units are closed process units and located within curbed, concrete Production Areas.

- Surface Water: The potential for release to surface water is low because the units are closed process units and located within curbed, concrete Production Areas.

- Air: The potential for release to air is low because the units are closed process units.

- Subsurface Gas: The potential for subsurface gas generation is low because the units are closed process units and located within curbed, concrete Production Areas.

5.15 SWMU #18 - Air Emissions Scrubber #04 (Photo #19 (A.4-9))

5.15.1 Information Summary

Unit Description: This unit is located in the Main Tank Farm. The Production Area is curbed with 6-inch concrete. The general location of this unit is shown in Exhibit 2-5. This unit is used to scrub air emissions vented to it from the production process. Four tanks dedicated to the RP-10 Production Process are vented to Air Emissions Scrubber #04, Tank N-202 (wash/hold tank), Tank N-204 (SWMU #33), Tank N-205 (SWMU #35), Tank N-206 (SWMU #36). This unit is constructed of steel. The dimensions of the unit are 24 inches by 24 feet.

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages waste gaseous emissions from the production of RP-10. The production process and associated wastestream for RP-10 is described in Section 2-4.

Release Controls: The unit is a closed process unit and is located within a curbed production area.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.15.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because the unit is a closed process unit and located within a curbed, concrete Production Area.

- Surface Water: The potential for release to surface water is low because the unit is a closed process unit and located within a curbed, concrete Production Area.

- Air: The potential for release to air is low because the unit is closed process unit.

- Subsurface Gas: The potential for subsurface gas generation is low because the unit is a closed process unit and located within a curbed, concrete Production Area.

5.16 SWMU #19 - Sump In Main Tank Farm Diked Area #1 (North)

(Photo #20 (A.1-7), Photo #21 (A.5-4))

5.16.1 Information Summary

Unit Description: The unit is a sump located within a diked containment area. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the Diked Area. The dimensions of the sump are approximately 2 feet by 2 feet by 2 feet deep.

The sump is located within Diked Area #1 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The Main Tank Farm is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform is located

in the center of the diked area. The diked area contains Tank PE-219 which is currently used to store thionyl chloride. The concrete showed some sign of deterioration with the surfaces being eroded and minor cracking being present. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tank located within the diked area. The tank within the diked area contains thionyl chloride.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.16.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.17 SWMU #20 - Sump in Main Tank Farm Diked Area #1 (South)

(Photo #22 (A.1-6), Photo #23 (A.5-3))

5.17.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #1 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 2 feet by 2 feet by 2 feet deep.

The Main Tank Farm is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 20 feet by 20 feet. A 6-inch high concrete platform is located in the center of the diked area. The platform presently supports

Tank PE-215, which is currently used to store Tenneco 500 (mixed xylenes). The concrete showed some sign of deterioration with the surface being eroded and minor cracking being present. The unit receives spills from the tank located within the diked area. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tank located within the diked area. The tank within the diked area contains Tenneco 500 (mixed xylenes).

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.17.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.18 SWMU #21 - Sump in Main Tank Farm Diked Area #2

(Photo #24 (A.1-5), Photo #25 (A.5-2))

5.18.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #2 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 2 feet by 2 feet by 2 feet deep.

The Main Tank Farm is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 40 feet by 20 feet. Concrete platforms are located in the unit. The platforms presently support two tanks (Tank PE-207 and Tank PE-205), which are currently used to store methyl alcohol and toluene. The

concrete showed some sign of deterioration with the surface being eroded and minor cracking being present. The unit receives spills from the tanks located within the diked area. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility. Standing water was observed in the sump during the VSI (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tanks located within the diked area. The tanks within the diked area contain methyl alcohol and toluene.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.18.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.19 SWMU #22 - Sump in Main Tank Farm Diked Area #3

(Photo #26 (A.1-11), Photo #27 (A.1-10), Photo #28 (A.5-1))

5.19.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #3 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump could not be determined during the VSI.

The Main Tank Farm is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 20 feet by 40 feet. Concrete platforms are located in the diked area. The platforms presently support Tanks PR-205, PR-206,

PR-207, PR-208, PR-209, PR-210, PR-211 and PR-212, which are currently used to store propionic acid, propionic anhydride, dichloroaniline, isophorone, and emulsifier. The concrete showed deterioration with the surface being severely eroded and minor cracking being present. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility. During the VSI standing water was observed covering the unit (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tank located within the diked area. The tank within the diked area contains propionic acid, propionic anhydride, dichloroaniline, isophorone, and emulsifier (46).

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.19.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low because of the low volatility of the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.20 SWMU #23 - Waste Storage Tank PE-209 in Main Tank Farm Diked Area #4

(Photo #29 (A.1-12), Photo #30 (A.1-13), Photo #31 (A.4-37))

5.20.1 Information Summary

Unit Description: This unit is a waste storage tank located in Diked Area #4. The location of this unit is shown in Exhibit 2-5. The unit has a capacity of 12,000 gallons. The approximate dimensions of the unit are 10 feet in diameter by 24 feet in length. The tank is constructed of glass and steel, structurally supported in four places on legs and is mounted horizontally. The supports are secured to the concrete slab by rods and ties. The unit is secured with bolts at each leg.

The unit is located in a diked area that is approximately 50 feet long and 30 feet wide in the facility's Main Tank Farm. The Main Tank Farm is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area containing the unit also contains numerous other tanks containing saturated sodium chloride (Tank PE-210), 9% sodium chloride (Tank PE-211) and 32% hydrochloric acid (Tank PE-212). The pad is designed for loads of 250 pounds per square inch. The diked area also contains a sump (13, 46, 47).

The unit receives wastewaters from Production Areas #1 and #2. Wastestreams produced in these Production Areas are summarized in Section 2-4. The wastes are transferred from the unit into tank trucks or to a rail car for shipment offsite (13).

The unit is a Pfaudler Chemstor tank, lined with glass, and is used in the neutralization process step and storage of permethrin and cypermethrin wastewater. Movement of waste into and out of the tank are controlled manually. Two process streams neutralize each other with supplemental sodium hydroxide or ammonia added as necessary. The unit is equipped with a sight glass and a high level alarm. The unit is operated under a slight negative pressure and is vented to an Air Emission Scrubber #01 (SWMU #15). Ignitable wastes stored in tanks are maintained under inert gas pads and electrical equipment is designed for use in a hazardous environment (13).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages wastewater from Production Areas #1 and #2. Wastestreams generated by each production area are summarized in Section 2.4. Wastes from Production Area #1 are ignitable and corrosive (pH 2) until neutralized in the unit. The waste is then classified ignitable. Wastes from Production Areas #1 and #2 are the only wastes placed in this unit (13).

Release Controls: Release controls for this unit include an underlying concrete slab. The unit is in a diked area 50 feet by 30 feet with a sump to collect spillage. The unit is equipped with a liquid level monitor and a high level alarm (13). According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it.

History of Releases: There is no documented release history for this unit. However, the unit appeared stained and discolored liquid was observed in the secondary containment area. The integrity of the sump could not be determined during the VSI.

5.20.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater appears to be low because the unit is equipped with a level monitor and high level alarm and is located in a diked containment area with a sump. However, the integrity of the sump could not be determined during the VSI.

- Surface Water: The potential for release to surface water is low because the unit is equipped with a level monitor and high level alarm and is located in a diked containment area with a sump. The diked area is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low because the unit is vented to an Air Emissions Scrubber #01 (SWMU #15).

- Subsurface Gas: The potential for subsurface gas generation appears to be low because the unit is equipped with a level monitor and high level alarm and is located in a concrete diked containment area with a sump.

5.21 SWMU #24 - Waste Storage Tank 002 in Main Tank Farm Diked Area #5

(Photo #32 (A.1-14), Photo #33 (A.1-15))

5.21.1 Information Summary

Unit Description: The unit is a 17,000-gallon, stainless storage tank for permethrin and cypermethrin wastewater. The dimensions of this unit are approximately 15 feet by 30 feet. This tank is a vertical tank with weakened seams around the perimeter of the roof at the side joint to afford emergency pressure relief. The unit is equipped with audible high level alarms.

This unit is located in the Main Tank Farm in Diked Area #5. The location of this unit is shown in Exhibit 2-5. The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The approximate dimensions of the diked area are 30 feet by 20 feet. The diked area is equipped with a sump. During the VSI, standing discolored water was observed covering the sump in the diked containment area. Deterioration of the concrete containment area with the surface being eroded and minor cracking being present was noted during the VSI. According to the facility representative, wastes collected in the sump are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are pumped into drums, stored in the Hazardous Waste Storage Area (SWMU #44) and then shipped offsite by a licensed carrier for disposal at a licensed facility. All waste transfers from Tank 002 to railcars or trucks are by manual operation (13, 46, 47).

Dates of Operation: The dates of operation for this unit are from the 1970s to the present.

Wastes Managed: This unit manages permethrin and cypermethrin wastewater. Wastestreams generated by the production of permethrin and cypermethrin are summarized in Section 2.4.

Release Controls: Release controls for this unit include a diked secondary containment area. The diked area contains a sump. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46). The unit is equipped with audible high level alarms.

History of Releases: There is no documented release history for this unit. Severe staining of the unit and associated piping was noted during the VSI. Standing discolored water was observed in the containment area for this unit. In addition, staining of the outside of the containment was noted; however, this could not be attributed to overtopping of the unit. The stains appeared to be located directly under associated piping.

5.21.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater appears to be low because the unit is equipped with a level monitor and high level alarm and is located in a concrete diked containment area with a sump. However, the integrity of the concrete sump could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low because the unit is equipped with a level monitor and high level alarm and is located in a diked concrete containment area with a sump.

- Air: The potential for release to air is moderate because of the volatility of the wastes managed. Staining was evident on the entire unit at the time of the VSI.

- Subsurface Gas: The potential for subsurface gas generation appears to be low because the unit is equipped with a level monitor and high level alarm and is located in a diked containment area with a sump. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.22 SWMU #25 - Sump in Main Tank Farm Diked Area #6

(Photo #34 (A.1-17), Photo #35 (A.4-35))

5.22.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #6 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 2 feet by 2 feet by 2 feet deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 15 feet by 20 feet. A concrete platform is located in the center of the diked area. The platform supports Tank PE-217 which is

currently used to store sodium hypochlorite (bleach). The concrete showed signs of deterioration with the surface being eroded and minor cracking being present. The unit receives spills from the tank located within the diked area. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility. During the VSI standing discolored water was observed in the unit (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tank located within the diked area. The tank within the diked area contains sodium hypochlorite.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, there were visible signs of deteriorated concrete observed during the VSI.

5.22.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is moderate since there are volatile constituents present in the wastes managed and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.23 SWMU #26 - Sump in Main Tank Farm Diked Area #7

(Photo #36 (A.1-19), Photo #37 (A.4-34))

5.23.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #7 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The open-topped sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform is located in the unit. A platform presently

supports Tanks B-104, B-105, and B-109 (SWMU #27) which are currently used to store 45% sodium hydroxide, 17% sodium hydroxide, and scrubber liquor, respectively. The concrete showed signs of deterioration with the surface being eroded and minor cracking being present. The unit receives spills from the tanks located within it. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tanks located within the diked area. The tanks within the diked area contains sodium hydroxide and scrubber liquor.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, there were visible signs of deteriorated concrete observed during the VSI.

5.23.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low because of the low volatility of the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.24 SWMU #27 - Tank B-109 in Main Tank Farm Diked Area #7

(No Photo Available)

5.24.1 Information Summary

Unit Description: The unit is a 6,000-gallon capacity, carbon steel tank, which was used to hold scrubber liquor for Air Emissions Scrubber #03 (SWMU #17). The dimensions of the unit are approximately 12 feet in diameter by 12 feet high. The unit is located within Diked Area #7 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform is located in the diked area. The platform presently supports Tanks B-104 and B-105 in addition to Tank B-109 (SWMU #27). Tanks B-104 and B-105 are currently used to store 45% sodium hydroxide and 17% sodium hydroxide, respectively. The concrete diked containment area showed signs of deterioration with the surface being eroded and minor cracking being present (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the mid 1980s. The unit is not currently operational.

Wastes Managed: The unit managed scrubber liquor.

Release Controls: The unit is constructed of carbon steel and is located in a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.24.2 Release Potential

- Soil/Groundwater: The past potential for release to soil and groundwater appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no present and ongoing release potential since the unit is not operational.

- Surface Water: The past potential for release to surface water appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area that was capable of containing the contents of all the tanks located within it. There is no present and ongoing release potential since the unit is not operational.

- Air: The past potential for release to air appears to have been low since the wastes managed had a low volatility and the unit was a closed tank. There is no present and ongoing release potential since the unit is not operational.

- Subsurface Gas: The past potential for subsurface gas generation appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no present and ongoing release potential since the unit is not operational.

5.25 SWMU #28 - Waste Storage Tank B-112 in Main Tank Farm Diked Area #8

(Photo #38 (A.1-20), Photo #39 (A.1-21), Photo #40 (A.4-33))

5.25.1 Information Summary

Unit Description: This is a RCRA-regulated unit. The facility has filed for closure on this unit. The unit is currently empty. The unit is a 20,000-gallon carbon steel tank. The dimensions of the unit are approximately 12 feet by 24 feet. The unit received wastes generated in Production Area #3. The wastestreams generated by production processes occurring in Production Area #3 are summarized in Section 2.4. This unit is located in the Main Tank Farm Diked Area #8.

The Main Tank Farm is constructed of 6-inch concrete and subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

This unit was constructed in 1976. The unit is a vertical tank with a weakened seam around the perimeter of the roof at the side joint. In addition, the cone roof metal thickness is less than that of the sidewall construction. This unit is operated at a slightly negative pressure. The unit is located in a diked area on a slightly elevated pad. The unit is equipped with an audible high level alarm. All waste transfers from the unit to railcars or trucks are by manual operation. The tank is grounded to prevent buildup of static charge. During the VSI, standing discolored water was observed covering the base of the diked area. The concrete diked containment area showed signs of deterioration with the surface being eroded and minor cracking being present (13, 46, 47).

Dates of Operation: Tank B-112 was operational from 1976 to 1985.

Wastes Managed: This unit managed wastes from Production Area #3. An analysis of the wastestreams produced by the manufacture of products produced in Production Area #3 is provided in Section 2.4.

Release Controls: The unit is located in a diked secondary containment area. A sump is located in the secondary containment area. The tank is equipped with audible high level alarms. The integrity of the concrete could not be observed due to the standing water.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the unit appeared corroded and the concrete diked area showed signs of deterioration.

5.25.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater appears to have been low because of the construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm. However, the integrity of the concrete diked area could not be verified during the VSI. There is no present and ongoing potential for release because the unit is not currently operational.

- Surface Water: The potential for release to surface water appears to have been low because of the construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm. There is no present and ongoing potential for release because the unit is not currently operational.

- Air: The past potential for release to air appears to have been low because the unit was vented to an Air Emissions Scrubber (SWMU #17). There is no present and ongoing potential for release because the unit is not currently operational.

- Subsurface Gas: The past potential for subsurface gas generation appears to have been low because of the construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm. However, the integrity of the concrete diked area could not be verified during the VSI. There is no present and ongoing potential for release because the unit is not currently operational.

5.26 SWMU #29 - Sump in Main Tank Farm Diked Area #9

(Photo #41 (A.4-32), Photo #42 (A.1-22))

5.26.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #9 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 15 feet by 20 feet. A concrete platform is located in the unit. The platform presently supports Tank B-103 (currently not in service). The tank was used to store RP-10, a finished product. The concrete showed signs of deterioration with

the surface being eroded and minor cracking being present. During the VSI, standing discolored water was observed covering the sump in the diked containment area (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to 1985.

Wastes Managed: The unit has managed waste from the tank located within the diked area. According to the facility representative, the tank was used to store RP-10, a finished product.

Release Controls: The unit is constructed into a concrete diked area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.26.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was low because of the concrete construction of the unit and its location within a diked containment area. This release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for present and ongoing release because the unit is not currently in service.

- Surface Water: The past potential for release to surface water was low due to the concrete construction of the unit and its location within a diked containment area. There is no potential for present and ongoing release because the unit is not currently in service.

- Air: The past potential for release to air was low because there were volatile constituents present in the wastes managed and the unit was an open-topped sump. There is no potential for present and ongoing release because the unit is not currently in service.

- Subsurface Gas: The past potential for subsurface gas generation was low because of the concrete construction of the unit and its location within a diked containment area. The release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for present and ongoing release because the unit is not currently in service.

5.27 SWMU #30 - Waste Water Storage Tank B-102 in Main Tank Farm Diked Area #10 (Photo #43 (A.1-23), Photo #44 (A.1-24), Photo #45 (A.4-31))

5.27.1 Information Summary

Unit Description: Tank B-102 is 12 foot wide by 24 foot high carbon steel tank manufactured by Holland Welding. The unit has a capacity of 20,000 gallons. The unit is used to store wastewater from Production Areas #3 and #4. The wastestreams generated by these Production Areas are discussed in Section 2-4.

Tank B-102 is located in the Main Tank Farm Diked Area #10 (Exhibit 2-5). The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between the diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The tank is mounted on a raised concrete platform inside a diked containment area. The diked containment area is approximately 20 feet by 20 feet. A sump

is located in the diked containment area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot. The unit is equipped with an audible high level alarm. During the VSI discoloration was noted on Tank B-102. Standing water was observed in the diked containment area. The concrete showed signs of deterioration with the surface being eroded and minor cracking being present.

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit currently manages methylthiopinacolone oxide wastewater. The unit is used to store wastewater from Production Areas #3 and #4. An analysis of the wastestreams produced by the manufacture of products in these Production Areas is provided at Section 2.4.

Release Controls: The unit is located in diked secondary containment area constructed of concrete and equipped with a sump. The tank is equipped with an audible high level alarm.

History of Releases: There is no documented release history for this unit. Staining was noted on the tank during the VSI.

5.27.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm. However, the integrity of the concrete diked area could not be verified during the VSI.

- Surface Water: The potential for release to surface water is low because of the construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm.

- Air: The potential for release to air is moderate because staining was noted on the tank and the wastes managed contain volatile constituents.

- Subsurface Gas: The potential for subsurface gas generation is low because of the steel construction of the unit, the location of the unit in concrete diked area, and the presence of a level monitor and high level alarm. However, the integrity of the concrete diked area could not be verified during the VSI.

5.28 SWMU #31 - Sump in Main Tank Farm Diked Area #11

(Photo #46 (A.1-25), Photo #47 (A.4-30))

5.28.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #11 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between the diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 15 feet by 20 feet. A concrete platform is located in the diked area. The platform presently supports Tank N-213 which is used for caustic storage. The concrete

showed signs of deterioration with the surface being eroded and minor cracking being present. The unit receives spills from the tank located within the diked area. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the tank located within the diked area. The tank within the diked area contains caustics.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, there were visible signs of deteriorated concrete observed during the VSI.

5.28.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low because of the low volatility of the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the low volatility of the inorganic wastes managed, the concrete construction of the unit, and its location within a diked containment area.

5.29 SWMU #32 - Sump in Main Tank Farm Diked Area #12

(Photo #48 (A.1-26), Photo #49 (A.4-29))

5.29.1 Information Summary

Unit Description: The unit is a sump located within a diked area. The sump is located within Diked Area #12 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 15 feet by 20 feet. A concrete platform was located in the center of the diked area. The

platform formerly supported Tank N-111 which was used to store acidic anhydride. The concrete showed some sign of deterioration with the surface being eroded and minor cracking being present. The unit received spills from the tank located within the diked area. According to the facility representative, wastes collected in the unit were analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system were manually pumped into it. Wastes that were not suitable for treatment in the wastewater treatment system were shipped offsite by a licensed transporter for disposal in a licensed facility (46). During the VSI standing water was observed in the unit (46, 47).

Dates of Operation: The unit has been in operation since the 1970s. The unit is not currently operational.

Wastes Managed: The unit does not currently manage waste but formerly managed the leaks and spills from the tank located within the diked area. The tank within the diked area contained acetic acid.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.29.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was low due to the concrete construction of the unit and its location within a diked containment area. The past release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for present and ongoing release because the unit is not currently operational.

- Surface Water: The past potential for release to surface water was low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it. There is no potential for present and ongoing release because the unit is not currently operational.

- Air: The past potential for release to air was low because of the low volatility of the wastes managed. There is no potential for present and ongoing release because the unit is not currently operational.

- Subsurface Gas: The past potential for subsurface gas generation was low due to the concrete construction of the unit and its location within a diked containment area. The past release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for present and ongoing release because the unit is not currently operational.

5.30 SWMU #33 - Tank N-204 in Main Tank Farm Diked Area #13

(Photo #50 (A.1-30), Photo #51 (A.1-27), Photo #52 (A.4-28))

5.30.1 Information Summary

Unit Description: The unit is a 3,000-gallon stainless steel tank. The tank contains spent sulfuric acid. The tank is vented to Air Emissions Scrubber #04 (SWMU #18). The unit is located within Diked Area #13 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. A sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between the diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform supports the unit. During the VSI, standing water was observed in the diked area (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages spent sulfuric acid, which is sent offsite to Stauffer Chemical for reprocessing.

Release Controls: The unit is located in a diked concrete containment area which contains a sump.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.30.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential is, however, dependent on the integrity of the steel and concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the steel construction of the unit and its location within a diked concrete containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low since the unit is a closed tank and no visible sign of release was observed during the VSI.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential is, however, dependent on the integrity of the steel and concrete which could not be evaluated during the VSI.

5.31 SWMU #34 - Tank N-201 in Main Tank Farm Diked Area #14

(Photo #53 (A.1-29), Photo #54 (A.4-27))

5.31.1 Information Summary

Unit Description: The unit is a 10,000-gallon capacity carbon steel tank manufactured by Holland Welding. The tank is used to store scrubber liquor for Air Emissions Scrubber #04 (SWMU #18). The dimensions of the unit are 12 feet in diameter by 12 feet high. The unit is located within Diked Area #14 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. A sump is constructed into the concrete floor of diked area. The dimensions of the sump could not be determined during the VSI.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between the diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform located in the center of the diked area supports the unit. The concrete in the diked area showed signs of deterioration with the surface being eroded and minor cracking being present. During the VSI, standing water was observed in the sump (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages scrubber liquor.

Release Controls: The unit is constructed of steel and is located in a diked concrete containment area, equipped with a sump.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, there were visible signs of deteriorated concrete in the diked area observed during the VSI.

5.31.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential is, however, dependent on the integrity of the steel and concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the steel construction of the unit and its location within a diked concrete containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low since the unit is a closed tank.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.32 SWMU #35 - Tank N-205 in Main Tank Farm Diked Area #15

(Photo #55 (A.1-34), Photo #56 (A.1-28), Photo #57 (A.4-26))

5.32.1 Information Summary

Unit Description: The unit is a 17,000-gallon capacity stainless steel tank manufactured by Holland Welding. The dimensions of the tank are approximately 14 feet by 16 feet. The tank is used to store spent acid which is recycled back into the production process. The tank vents to Air Emissions Scrubber #04 (SWMU #18). The unit is located within Diked Area #15 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

A sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep. The diked area is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform supports the unit. The concrete in the diked area showed signs of deterioration. During the VSI, a substantial amount of standing water was observed in the diked area and sump (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages spent acid generated during the RP-10 production process.

Release Controls: The unit is constructed of steel and is located in a diked concrete containment area.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.32.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the steel construction of the unit and its location within a diked concrete containment area that is capable of containing the contents of all the tanks located within it.

- Air: The potential for release to air is low since the unit has a closed top and is vented to Air Emissions Scrubber #04.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the steel construction of the unit and its location within a diked concrete containment area. The release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.33 SWMU #36 - Tank N-206 in Production Area #4 (No Photo Available)

5.33.1 Information Summary

Unit Description: The unit is a 5,000-gallon capacity glass-lined steel wastewater hold tank manufactured by Pfaudler. The dimensions of the tank are approximately 8 feet by 11 feet. The tank is a wastewater hold tank. The tank vents to Air Emissions Scruber #04 (SWMU #18). The unit is located within Production Area #4 (Exhibit 2-5). The Production Areas run parallel to the Main Tank Farm on the northern end of the facility. The unit receives wastes generated by the production process in Production Areas #3 and #4. The wastestreams generated in those areas is summarized in Section 2-4.

The Production Area is curbed and constructed of concrete. Spills in the Production Area are contained by the Production Area #4 Drainage System and Sump (SWMU #6) that is built into the concrete floor of the Production Area. The drainage system is approximately 12 inches across by 6 inches deep. The drainage system runs along the floor of the Production Area. The system drains to a sump, which is constructed of concrete and covered with a metal grate.

According to the facility representative, the curbed Production Area is capable of holding the contents of the largest tank located within it (47). The drainage system and sump receive wastes generated during the production process.

Dates of Operation: The dates of operation for this unit are from the mid 1970s to present.

Wastes Managed: This unit manages neutralized acid wastes.

Release Controls: The unit is constructed of steel and is located within a curbed Production Area. The Production Area is curbed with a 6-inch to 8-inch concrete curb. Drainage System and Sump (SWMU #6) are located in the Production Area.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.33.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the steel construction of the unit and its location within a curbed concrete Production Area. This release potential is, however, dependent on the integrity of the steel and concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the steel construction of the unit and its location within a curbed concrete Production Area that is capable of containing the contents of the largest tank located within it.

- Air: The potential for release to air is low since the unit has a closed top and is vented to Air Emissions Scrubber #04.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the steel construction of the unit and its location within a curbed concrete Production Area. The release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.34 SWMU #37 - Sump in Main Tank Farm Diked Area #16

(Photo #58 (A.1-35), Photo #59 (A.4-25))

5.34.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #16 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 2 feet by 2 feet by 2 feet deep. The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 20 feet by 20 feet. A concrete platform is located in the center of the diked area. The platform presently supports Tank N-202 (a wash/hold tank) used in the RP-10 production process. The concrete showed some sign of deterioration. The unit

receives spills from the tank located within it. During the VSI standing water was observed in the unit. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from the wash/hold tank located within the diked area.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.34.2 Release Potential

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area.

- Air: The potential for release to air is moderate due to the volatility of constituents present in the wash hold tank and the unit is open top.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.35 SWMU #38 - Sump in Main Tank Farm Diked Area #17

(Photo #60 (A.1-37), Photo #61 (A.4-24))

5.35.1 Information Summary

Unit Description: The unit is a sump located within a diked area. The sump is located within Diked Area #17 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 30 feet by 30 feet. A concrete platform located in the diked area supports Tanks M-105 and M-106. Tank M-105 contained spent sulfuric acid from 1975 to 1980 and dodocene from 1980 to January 1986. The tank is now empty. Tank M-106 contained ammonium sulfate from 1975 to 1980. The tank contained kerosene from 1980 to 1985. The tank is now empty. The concrete showed signs of deterioration with the surface being severely eroded and minor cracking being present. The facility representative attributed this deterioration to nitric acid spills from the tanks located within it. During the VSI, standing water was observed in the sump. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: The unit managed the leaks and spills from Tanks M-105 and M-106. Tanks M-105 and M-106 are now empty.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.35.2 Release Potential

- Soil/Groundwater: The past potential for release to soil and groundwater appears to have been low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for release because the tanks located in the diked area are empty.

- Surface Water: The past potential for release to surface water appears to have been low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it. There is no potential for release because the tanks located in the diked area are empty.

- Air: The past potential for release to air is moderate since there were volatiles present in the wastes managed and the unit had an open top. There is no potential for release because the tanks located in the diked area are empty.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for release because the tanks located in the diked area are empty.

5.36 SWMU #39 - Tank M-105 in Main Tank Farm Diked Area #17

(No Photo Available)

5.36.1 Information Summary

Unit Description: The unit is a steel tank located within a diked area. The tank is located within Diked Area #17 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. A sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is rectangular with approximate dimensions of 30 feet by 30 feet. A concrete platform located in the diked area supports the unit. Tank M-105 contained spent sulfuric acid from 1975 to 1980 and dodocene from 1980

to January 1986. The tank is now empty. Tank M-106 is located within the same diked area. The concrete showed signs of deterioration with the surface being severely eroded and minor cracking being present. The facility representative attributed this deterioration to nitric acid spills from the tanks located within it. During the VSI, standing water was observed in the sump (46, 47).

Dates of Operation: The unit was used to store spent sulfuric acid from 1975 to 1980.

Wastes Managed: The unit managed spent sulfuric acid.

Release Controls: The unit is constructed of steel and located in a diked concrete containment area. The diked area contains a sump. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within them (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.36.2 Release Potential

- Soil/Groundwater: The past potential for release to soil and groundwater appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area. This release potential was, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. There is no potential for release because the tank in the diked area is empty.

- Surface Water: The past potential for release to surface water appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area that is capable of containing the contents of all the tanks located within it. Their is no potential for release because the tank in the diked area is empty.

- Air: The past potential for release to air is low since the unit managed low volatility wastes and the unit was closed. Their is no present potential for release because the tank in the diked area is empty.

- Subsurface Gas: The past potential for subsurface gas generation appears to have been low due to the steel construction of the unit and its location within a diked concrete containment area. Their is no present potential for release because the tank in the diked area is empty.

5.37 SWMU #40 - Sump in Main Tank Farm Diked Area #18

(Photo #62 (A.2-3), Photo #63 (A.4-23))

5.37.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #18 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked area is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch concrete. The diked area is rectangular with approximate dimensions of 30 feet by 20 feet. A concrete platform is located in the diked area. The platform presently supports Tanks

M-108 and M-110. Tank M-108 contained kerosene but has been empty since January of 1986. Tank M-110 contained dodocene until January of 1986. The tank is now empty. The concrete showed signs of deterioration with the surface being severely eroded and minor cracking being present. The unit received spills from the tanks located within it. During the VSI, standing water was observed in the sump. According to a facility representative, wastes collected in the unit are analyzed on a regular basis. Wastes that are suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that are not suitable for treatment in the wastewater treatment system are shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: *The unit has been in operation since the 1970s to 1986.*

Wastes Managed: The unit managed the leaks and spills from Tanks M-108 and M-110. Tank M-108 contained kerosene and Tank M-110 contained dodocene. The tanks are now empty.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.37.2 Release Potential

- Soil/Groundwater: The past potential for release to soil and groundwater appears to have been low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI. The present potential for release is low since the tanks are empty and the unit no longer manages spillage.

- Surface Water: The past potential for release to surface water appears to have been low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it. The present potential for release is low since the tanks are empty and the unit no longer manages spillage.

- Air: The past potential for release to air was low since the volatility of the constituents present in the tanks was low. The present potential for release is low since the tanks are empty and the unit no longer manages spillage.

- Subsurface Gas: The past potential for subsurface gas generation appeared to be low due to the concrete construction of the unit and its location within a diked containment area. The leakage managed by the unit was not volatile. The present potential for release is low since the tanks are empty and the unit no longer manages spillage.

5.38 SWMU #41 - Sump in Main Tank Farm Diked Area #19

(Photo #64 (A.2-4), Photo #65 (A.4-22))

5.38.1 Information Summary

Unit Description: The unit is a sump. The sump is located within Diked Area #19 (Exhibit 2-5), which is part of the facility's Main Tank Farm. The tank farm runs parallel to the railroad spur along the northern perimeter of the facility. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 1 foot by 1 foot by 1 foot deep.

The Main Tank Farm is constructed of 6-inch concrete. It is subdivided into smaller diked areas. The outside perimeter walls of the Main Tank Farm are approximately 4.5 feet deep. The interior walls which separate individual diked areas are approximately 3.5 feet deep. According to the facility representative, in most cases, the individual diked areas can contain the contents of the largest tank located within it. If the contents of a tank were not contained within the individual diked area, the contents would spill into an adjacent diked area since the wall between diked areas is lower than the perimeter walls. According to the facility representative, the entire Main Tank Farm Area is capable of containing the contents of all the tanks located within it. During the VSI, there was no evidence that the perimeter walls of the Main Tank Farm Area had been breeched (46).

The diked area is constructed of 6-inch thick concrete. The diked area is rectangular with approximate dimensions of 10 feet by 15 feet. A concrete platform is located in the diked area. The platform presently supports Tank

M-109. Tank M-109 was used to store kerosene until January of 1986. The tank is now empty. The concrete showed signs of deterioration with the surface being eroded and minor cracking being present. The unit received spills from the tank located within it. According to a facility representative, wastes collected in the unit were analyzed on a regular basis. Wastes that were suitable for treatment in the wastewater treatment system are manually pumped into it. Wastes that were not suitable for treatment in the wastewater treatment system were shipped offsite by a licensed transporter for disposal in a licensed facility (46, 47).

Dates of Operation: The unit has been in operation from the 1970s to 1986.

Wastes Managed: The unit managed the leaks and spills from Tank M-109. Tank M-109 was used to store kerosene until 1986. The tank is now empty.

Release Controls: The unit is constructed into a diked concrete containment area. According to the facility representative, the diked containment areas in the Main Tank Farm are capable of containing the contents of all the tanks located within it (46).

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, the integrity of the unit could not be verified during the VSI.

5.38.2 Release Potential

- Soil/Groundwater: The past potential for release to soil and groundwater appears to have been low due to the concrete construction of the unit and its location within a diked containment area. There is no present potential for release from the unit because the tank is empty.

- Surface Water: The past potential for release to surface water appears to have been low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of all the tanks located within it. There is no present potential for release from the unit because the tank is empty.

- Air: The past potential for release to air was low since the contents of the tank were not highly volatile. There is no present potential for release from the unit low because the tank is empty.

- Subsurface Gas: The past potential for subsurface gas generation appears to have been low due to the concrete construction of the unit and its location within a diked containment area. There is no present potential for release from the unit because the tank is empty.

5.39 SWMU #42 - Sump in Second Tank Farm Diked Area #1

(Photo #66 (A.3-22), Photo #67 (A.5-7))

5.39.1 Information Summary

Unit Description: The unit is a sump located within a diked area. The sump is located in the Second Tank Farm in Diked Area #1 (Exhibit 2-5). The Second Tank Farm is located to the south of the Production Areas. The sump is constructed into the concrete floor of the diked area. The dimensions of the sump are approximately 3 feet by 3 feet by 3 feet deep.

The diked area is constructed of 6-inch concrete. It is rectangular with approximate dimensions of 25 feet by 45 feet by 3.5 feet high and, according to the facility representative, has a capacity greater than the capacity of any single tank located within it. Presently, Tanks PR-202 and PR-203 are located within the diked area. These tanks are Propanil Blend Tanks. During the VSI, standing water was observed in the sump. The concrete showed some signs of deterioration. The unit receives spills from the tanks located within it (46, 47).

Dates of Operation: The unit has been in operation from the 1970s to the present.

Wastes Managed: The unit manages the leaks and spills from Tanks PR-202 and PR-203 which are Propanil Blend Tanks.

Release Controls: The unit is constructed into a diked concrete containment area.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. However, there were visible signs of deteriorated concrete observed during the VSI.

5.39.2 Release Potential:

- Soil/Groundwater: The potential for release to soil and groundwater appears to be low due to the concrete construction of the unit and its location within a diked containment area. This release potential is, however, dependent on the integrity of the concrete which could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water appears to be low due to the concrete construction of the unit and its location within a diked containment area that is capable of containing the contents of the tanks located within it.

- Air: The potential for release to air is moderate because of the volatility of the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation appears to be low due to the concrete construction of the unit. Although the wastes managed contain volatile constituents which could result in subsurface gas release, the release potential is dependent on the integrity of the concrete which could not be evaluated during the VSI.

5.40 SWMU #43 - Wastewater Tank 014 in Second Tank Farm Diked Area #3

(Photo #68 (A.3-21))

5.40.1 Information Summary

Unit Description: The unit is a Wastewater Storage Tank located in the facility's Second Tank Farm. The Second Tank Farm is located to the south of the Production Areas (Exhibit 2-5). The unit is located in a secondary containment area which also contains two nonwaste tanks. The unit is equipped with an audible high level alarm. The horizontally mounted cylindrical steel tank is approximately 30 feet long by 10 feet in diameter. Secondary containment for the unit includes a concrete floor and diked area. No sump could be located in the secondary containment area during the VSI. The diked area is rectangular with approximate dimensions of 60 feet by 40 feet by 3 feet high and has a capacity greater than the capacity of any single tank located within it. The unit is used to store wastewaters generated during the production of Schenectady Chemicals, Inc. (SCI) in Production Area #3. Wastewater held in this unit is shipped offsite for disposal (46, 47).

Dates of Operation: The unit has been in operation from the 1970s to the present.

Wastes Managed: The unit manages the wastestream from Production Area #3. Production Area #3 currently produces SCI. The wastestream for SCI is provided in Section 2-4.

Release Controls: Release controls for the unit include a diked concrete secondary containment area. No sump could be located in the secondary containment area during the VSI.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.40.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the steel construction of the unit, the location of the unit in a concrete diked area, and the presence of a high level alarm. However, the integrity of the concrete diked area could not be verified during the VSI.

- Surface Water: The potential for release to surface water is low because of the steel construction of the unit, the location of the unit in a concrete diked area, and the presence of a high level alarm.

- Air: The potential for release to air is low because of the closed construction of the unit.

- Subsurface Gas: The potential for subsurface gas generation is low because of the steel construction of the unit and the location of the unit in a concrete area. However, the integrity of the concrete could not be verified during the VSI.

5.41 SWMU #44 - Hazardous Waste Storage Area

(Photo #69 (A.3-28), Photo #70 (A.3-32), Photo #71 (A.3-26))

5.41.1 Information Summary

Unit Description: This unit is RCRA-regulated. The unit is in the process of closure. This unit is located to the south of the warehouse (Exhibit 2-5). This unit is used to store hazardous materials contained in 55-gallon drums. The dimensions of this unit are approximately 12 feet by 40 feet. This unit is constructed of concrete. The base is sloped to the middle and down to a sump on one end. An asphalt pad approximately 10 feet wide surrounds the east side of concrete pad. The sump has a capacity of 500 gallons (13) with approximate dimensions of 4 feet by 4 feet by 5 feet deep. The sump is covered by a grate (46).

The concrete portion of the unit is curbed on three sides with 6-inch curbing. The south end is open to facilitate operations at the unit. A corrugated metal roof covers the area and extends out beyond the perimeter of the concrete curbing. The facility representative noted that, during a recent rain, water had backed up from the facility Stormwater Drainage System, almost to the open edge of the Hazardous Waste Storage Area (46).

Dates of Operation: The dates of operation for this unit are from July 1984 to present.

Wastes Managed: This unit manages hazardous waste generated at the facility prior to shipment offsite. At the time of the VSI, 20 55-gallon drums were stored on the pad. Six were marked "Mineral Spirits," seven "Toluene," four

"MO," and three "Nitrobenzene." A large yellow tank marked "KBH" was also present on the pad. The drums all appeared to be in good condition.

Release Controls: Release controls for this unit include a 500-gallon sump and a concrete slab floor, which is sloped to the middle to a drainage channel which leads to a sump at the north end of the unit. There is a concrete curb around three sides, and the unit is covered with a corrugated metal roof.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.41.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the unit is constructed of concrete, curbed and sloped to a concrete sump and the wastes are stored in sealed containers.

- Surface Water: The potential for release to surface water is low because the unit is constructed of concrete, curbed and sloped to a concrete sump and the wastes are stored in sealed containers.

- Air: The potential for release to air is low because wastes are stored in sealed containers.

- Subsurface Gas: The potential for subsurface gas generation is low because the unit is constructed of concrete, curbed and sloped to a concrete sump and the wastes are stored in sealed containers.

5.42 SWMU #45 - Nonhazardous Waste Storage Area (Photo #72 (A.2-22))

5.42.1 Information Summary

Unit Description: This unit is located on the north side of the nitrogen storage tank (Exhibit 2-5). This unit is a section of a flat uncovered concrete surface. The dimensions of this unit are approximately 40 feet by 40 feet. This unit receives waste stored in 55-gallon drums from the production processes at the facility (17). At the time of the VSI, there were approximately 100 55-gallon drums stored on wooden skids, four to a skid. The drums appeared to be in fair to good condition. There was no visible deterioration of the pad observed during the VSI (46).

Dates of Operation: The dates of operation for this unit are from 1981 to present.

Wastes Managed: This unit manages nonhazardous wastes stored in drums generated by the production processes at the facility. An inventory of waste stored in the area was not available at the time of the VSI. However, in general, off specification chemicals are stored in the area (47).

Release Controls: The unit is a section of a concrete pad. No other release controls were evident.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.42.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the wastes managed are stored in sealed containers.

- Surface Water: The potential for release to surface water is low because the wastes managed are stored in sealed containers.

- Air: The potential for release to air is low because the wastes managed are stored in sealed containers.

- Subsurface Gas: The potential for subsurface gas generation is low because the wastes managed are stored in sealed containers.

5.43 SWMU #46 - Drum Storage Area (Photo #73 (A.3-37))

5.43.1 Information Summary

Unit Description: This Drum Storage Area is a asphalt and concrete section of the facility that is located to the east of the loading dock (Exhibit 2-5). During the VSI, the unit contained approximately 200 to 250 drums stored on wooden skids. The facility representative indicated that the drums were empty and had contained product or raw materials. The drums were located in an area approximately 100 feet by 100 feet. The drums appeared to be intact and in average to good condition (46).

Operation: The facility representative was unaware of the beginning date of operation of the unit. The unit is currently operational.

Wastes Managed: The unit manages empty drums which had contained raw chemicals or product (47).

Release Controls: The unit is constructed of asphalt and concrete and is sloped to drain to the facility's Stormwater Drainage System (SWMU #59).

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI.

5.43.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater appears to be low because the unit is asphalt and concrete.

- Surface Water: The potential for release to surface water appears to be low because the drums appeared intact and the unit is sloped to the Stormwater Drainage System.

- Air: The potential for release to the air appears to be low to moderate because the drums are empty and appeared intact.

- Subsurface Gas: The potential for subsurface gas generation appears to be low because the unit is asphalt and concrete.

5.44 SWMU #47 - Drum Crushing Area (Photo #74 (A.3-19))

5.44.1 Information Summary

Unit Description: This unit is located to the west of the packaging building (Exhibit 2-5). The unit is a section of concrete which contains a facility-made hydraulic press used to crush empty drums. According to the facility representative, the drums are rinsed prior to crushing and runoff from the area drains to the facility's Stormwater Drainage System (SWMU #59). Staining was evident on the concrete throughout the area and cracks were observed in the concrete.

Dates of Operation: The unit has been operational from the mid 1970s to the present.

Wastes Managed: The unit manages waste drums prior to shipment offsite.

Release Controls: The unit's floor is constructed of concrete and has concrete secondary containment walls on two sides. The area drains into the Stormwater Drainage System (SWMU #59).

History of Releases: The history of releases at the unit could not be determined. Staining was evident throughout the area.

5.44.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is high because of the cracks present in the concrete floor of the unit, and the lack of containment to prevent runoff onto adjacent soils. Staining was observed during the VSI.

- Surface Water: The potential for release to surface water is low because the surface is sloped to the facility's Stormwater Drainage System.

- Air: The potential for release to the air is moderate because of the potentially volatile constituents present in the wastes and the stains observed during the VSI.

- Subsurface Gas: The potential for subsurface gas generation is high because of the volatile constituents present in the wastes, the cracks present in the concrete floor of the unit, and the stains observed during the VSI.

5.45 SWMU #48 - Waste Drum Staging Area (Photo #75 (A.3-35))

5.45.1 Information Summary

Unit Description: The unit is an unlined section of ground on which empty drums are stored. The drums covered an area approximately 20 feet by 20 feet. The unit is located near the eastern perimeter of the facility (Exhibit 2-5). Drums are stored here after rinsing and prior to shipment offsite. Approximately 20 drums were observed in the area during the VSI. There was no evidence of leakage from the drums and they appeared to be in good condition (46).

Dates of Operation: The unit has been in operation since the 1970s to the present.

Wastes Managed: This unit manages various empty drums that could have contained any raw materials and products associated with this facility.

Release Controls: No release controls were observed during the VSI.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit.

5.45.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the drums were empty, appeared to be in good condition and no evidence of release was observed during the VSI.

- Surface Water: The potential for release to surface water is low because the drums were empty, appeared to be in good condition and no evidence of release was observed during the VSI.

- Air: The potential for release to air is low because the drums were empty, appeared to be in good condition and no evidence of release was observed during the VSI.

- Subsurface Gas: The potential for subsurface gas generation is low because the drums were empty, appeared to be in good condition and no evidence of release was observed during the VSI.

5.46 SWMU #49 - Scrap Drum Storage Wagons

(Photo #76 (A.3-34), Photo #77 (A.3-36))

5.46.1 Information Summary

Unit Description: Crushed scrap drums are stored on cotton wagons at several locations on the facility (Exhibit 2-5). The wagons are approximately 10 feet by 30 feet with wood planking and chain link sides. The chain link sides of the unit are approximately 8 feet high. According to the facility representative, the drums are cleaned, crushed, and stored on the wagon prior to shipment offsite (46).

Dates of Operation: The units have been used since the 1970s to the present.

Wastes Managed: The units manage scrap drums after they have been crushed and prior to shipment offsite.

Release Controls: The drums are contained on the wagons by chain link sides which are are eight feet high. No other release controls were evident.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.46.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the inert nature of the empty drums on the wagons and the low amounts of residue, if any, in the drums.

- Surface Water: The potential for release to surface water is low because of the inert nature of the empty drums on the wagons and the low amount of residue, if any, in the drums.

- Air: The potential for release to air is low because of the inert nature of the empty drums on the wagons and the low amount of residue, if any, in the drums.

- Subsurface Gas: The potential for subsurface gas generation is low because of the inert nature of the empty drums on the wagons and the low amount of residue, if any, in the drums.

5.47 SWMU #50 - Waste Drum Staging Area in Main Tank Farm Area

(Photo #78 (A.1-36))

5.47.1 Information Summary

Unit Description: The unit is a section of concrete containing numerous empty drums which contained raw chemicals stored on skids in between two diked areas in the Main Tank Farm Area (Exhibit 2-5). At the time of the VSI, approximately 17 55-gallon drums were observed. The drums appeared to be in good condition. There was no evidence of staining or leakage observed during the VSI. The facility representative indicated the area was a staging area for empty drums which would either be shipped offsite or reused (46).

Dates of Operation: The area has probably been used since the 1970s.

Wastes Managed: The unit manages empty drums.

Release Controls: The area was constructed of concrete.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.47.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because the drums appeared to be in good condition and no visible signs of release were observed during the VSI.

- Surface Water: The potential for release to surface water is low because the drums appeared to be in good condition and no visible signs of release were observed during the VSI.

- Air: The potential for release to air is low because the drums appeared to be in good condition and no visible signs of release were observed during the VSI.

- Subsurface Gas: The potential for subsurface gas generation is low because the drums appeared to be in good condition and no visible signs of release were observed during the VSI.

5.48 SWMU #51 - Waste Oil Drum (Photo #79 (A.2-27))

5.48.1 Information Summary

Unit Description: The unit is a 55-gallon drum containing waste oil. The drum was located adjacent to the southeast corner of the Maintenance Shop (Exhibit 2-5). The drum receives waste oils from maintenance operations (46). The uni is located on a concrete pad that appeared to have cracks in it. The pad was heavily stained. The concrete pad is sloped to the facility's Stormwater Drainage System (SWMU #59). (46)

Dates of Operation: The date this particular drum became operational was not known. The unit is currently operational.

Wastes Managed: The units manages waste oils.

Release Controls: The unit is stored on a concrete pad which was observed to be cracked during the VSI.

History of Releases: Staining of the pad was evident during the VSI.

5.48.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is moderate because the unit is located on a cracked concrete pad that was stained at the time of the VSI.

- Surface Water: The potential for release to surface water is low because the unit is located on a concrete pad and contains a small amount of waste. The concrete pad is sloped to the facility's Stormwater Drainage System (SWMU #59).

- Air: The potential for release to air is low because of the low volatility of the waste managed.

- Subsurface Gas: The potential for subsurface gas generation is moderate because the unit is located on a cracked concrete pad that was stained at the time of the VSI and the wastes managed are organic chemicals.

5.49 SWMU #52 - Drums (Photo #80 (A.3-4))

5.49.1 Information Summary

Unit Description: Two 50-gallon drums are located in a field northwest of the Stormwater Sump (SWMU #60) within 50 feet of and sloped to the facility's Stormwater Drainage System (SWMU #59). The drums were marked "unknown," were open, and appeared to be in good condition. The facility representative was unaware of their origin or method of disposal. The contents of the drums were noted during the VSI. The drums contained what appeared to be ceramic beads (46).

Dates of Operation: The dates of operation could not be determined.

Wastes Managed: The drums contained ceramic beads. It was uncertain if the beads were contaminated with process residue.

Release Controls: No release controls were observed during the VSI.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.49.2 Release Potential:

- Soil/Groundwater: The release potential to soil and groundwater is unknown and depends on the presence of process residue on the ceramic beads. If residue is present, the potential is moderate since the drums were open.

- Surface Water: The release potential to surface water is low since the drums were located in an area that drains to the facility's Stormwater Drainage System.

- Air: The release potential to air is unknown and depends on the process residue on the ceramic beads. If residue is present, the potential is moderate since the drums were open and the residue likely contained volatile constituents.

- Subsurface Gas: The release potential to subsurface gas generation is dependent on the presence of process residue on the ceramic beads. If residue is present, the potential is moderate since the drums were open and the residue likely contained volatile constituents.

5.50 SWMU #53 - Solvent Cleaner Tank (Photo #81 (A.3-12))

5.50.1 Information Summary

Unit Description: The unit is a solvent cleaner tank located on a concrete floor along the east wall of an enclosed maintenance shop (Exhibit 2-5). The unit is a 2 feet by 3 feet by 2 1/2 feet deep metal tank with a metal cover mounted on metal legs. The unit is used to clean miscellaneous parts. The solvent used in the unit is unknown but most solvents are relatively volatile (46).

Dates of Operation: The exact startup date of operation is unknown. The unit is currently operational.

Wastes Managed: The unit is used to clean miscellaneous parts. The solvents used were not determined at the time of the VSI.

Release Controls: The unit is constructed of metal with a metal top and located inside a building with a concrete floor.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.50.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the construction of the unit, its location in an enclosed building and the small amount of waste managed.

- Surface Water: The potential for release to surface water is low because of the construction of the unit, its location in an enclosed building and the small amount of waste managed.

- Air: The potential for release to air is moderate because the wastes managed have volatile constituents and the unit's top was open at the time of the VSI.

- Subsurface Gas: The potential for subsurface gas release is low because of the construction of the unit, its location in an enclosed building and the small amount of waste managed.

5.51 SWMU #54 - Miscellaneous Drum Storage

(Photo #82 (A.3-13), Photo #83 (A.3-30))

5.51.1 Information Summary

Unit Description: Miscellaneous marked and unmarked drums are located in general disarray throughout the facility. The location of the drums that were photographed are shown in Exhibit 2-5. Several drums were located south of the maintenance shop. Other drums are located south of the Hazardous Waste Drum Storage Area (SWMU #44).

Dates of Operation: The dates of operation are unknown.

Wastes Managed: Contents of the drums were undetermined.

Release Controls: No release controls were observed during the VSI.

History of Releases: There is no documented release history. There was no evidence of release observed during the VSI.

5.51.2 Release Potential:

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the nature of the material in the drums and management practices regarding the ultimate disposition of the drums are unknown.

- Surface Water: The potential for release to surface water is unknown because the nature of the material in the drums and management practices regarding the ultimate disposition of the drums are unknown.

- Air: The potential for release to air is unknown because the nature of the material in the drums and management practices regarding the ultimate disposition of the drums are unknown.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the nature of the material in the drums and management practices regarding the ultimate disposition of the drums are unknown.

5.52 SWMU #55 - Dumpsters (Photo #84 (A.1-32), Photo #85 (A.2-17), Photo #86 (A.2-26), Photo #87 (A.4-10))

5.52.1 Information Summary

Unit Description: Approximately five Dumpsters were observed located throughout the facility. The capacity of the dumpsters varied ranged from an estimated 2 to 6 cubic yards with dimensions varying accordingly. The open-top dumpsters were constructed of steel and appeared to be in average to good condition. The units are used to dispose of inert materials generated by activities at the facility (46).

Dates of Operation: The units have been in operation since the 1970s to the present.

Wastes Managed: The units manage nonhazardous waste material consisting primarily of paper, scrap wood, and metal.

Release Controls: The units are constructed of steel. No other release controls were evident.

History of Releases: There is no documented release history from these units. There were no visible sign of releases.

5.52.2 Release Potential

- Soil/Groundwater: There is no potential for release to soil/groundwater because of the inert nature of the waste stored in the unit.

- Surface Water: There is no potential for release to surface water because of the inert nature of the waste stored in the unit.

- Air: There is no potential for release to air because of the inert nature of the waste stored in the unit.

- Subsurface Gas: There is no potential for subsurface gas generation because of the inert nature of the waste stored in the unit.

5.53 SWMU #56 - Laboratory Waste Rack Area (Photo #88 (A.1-4))

5.53.1 Information Summary

Unit Description: The Laboratory Waste Rack Area is located outside and adjacent to the southern end of the laboratory. Racks of varying dimensions hold containers of differing dimensions. Laboratory wastes were stored in a variety of containers from 5-gallon plastic bottles to 55-gallon drums. Most of the racks are located on a concrete pad with approximate dimensions of 10 feet by 15 feet. One rack was located adjacent to the paved area. The unit receives wastes generated by laboratory activities. The wastes that can be treated in the wastewater treatment system facility are sent to it. Wastes that cannot be treated in the wastewater treatment system are shipped offsite for disposal in a licensed facility (46).

Dates of Operation: The dates of operation for this unit are from 1982 to present.

Wastes Managed: This unit manages wastes generated by laboratory activities. These include samples of products, raw chemicals, and waste streams generated by the production process at the facility. Section 2-4 describes the product chemicals produced at the facility. Exhibit 2-11 lists a majority of chemicals present at the facility and potentially present in the wastes generated by the laboratory.

Release Controls: The surface area is lined with concrete, but has no curbing or other secondary containment.

History of Releases: There is no documented history of releases. There was some evidence of staining on the rack, but no evidence of staining on the concrete.

5.53.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low to moderate based on the lack of secondary containment and the staining noted on the waste rack.

- Surface Water: The potential for release to surface water is low to moderate based on the lack of secondary containment and the staining noted on the waste rack.

- Air: The potential for release to air is low to moderate based on the staining noted on the waste rack and the presence of volatile constituents in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation is low to moderate based on the lack of secondary containment, the staining noted on the waste rack, and the presence of volatile constituents in the wastes managed.

5.54 SWMU #57 - Warehouse Drum Storage Area *(No Photo Available)*

5.54.1 Information Summary

Unit Description: The Warehouse Drum Storage Area is a section inside of the warehouse where drummed wastes are stored prior to transfer to the Loading/Unloading Dock Area (SWMU #58) for offsite shipment. The unit is not used continuously. The warehouse has a concrete floor and corrugated metal walls and roof. The number of drums in the warehouse and the condition of them were not verified during the VSI (46).

Dates of Operation: The unit has been in operation from the mid 1970s to present.

Wastes Managed: This unit manages various wastes stored primarily in 55-gallon drums including off specification products and raw materials.

Release Controls: The floor of the unit is concrete. The unit is enclosed and roofed. No other release controls were evident.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.54.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the construction of the unit and its location inside a building and because the wastes are stored in sealed containers.

- Surface Water: The potential for release to surface water is low because of the construction of the unit and its location inside a building and because the wastes are stored in sealed containers.

- Air: The potential for release to air is low because of the construction of the unit and because the wastes are stored in sealed containers.

- Subsurface Gas: The potential for subsurface gas generation is low because of the construction of the unit and its location inside a building and because the wastes are stored in sealed containers.

5.55 SWMU #58 - Loading/Unloading Dock Area (Photo #89 (A.3-33))

5.55.1 Information Summary

Unit Description: The Loading/Unloading Dock Area is located adjacent to the Packaging Building. The unit is a raised concrete platform. The unit extends out from the packaging building to form an approximately 50 feet by 50 feet raised surface. The platform is approximately 4 feet high. Wastes include closed 55-gallon drums of off specification products and raw materials. Wastes stored in drums in the Warehouse Drum Storage Area (SWMU #57) are transferred to the unit and then to vehicles for shipment offsite. The surface areas of the Loading/Unloading Area are sloped so that spills would drain to the facility's Stormwater Drainage System (SWMU #59) (46, 47).

Dates of Operation: The unit has been in operation from the mid 1970s to present.

Wastes Managed: The unit manages waste drums and miscellaneous wastes. Wastes include 55-gallon drums of off specification products and raw materials. The products produced at the facility are discussed in Section 2-4. The majority of chemicals that may be present at the site are listed in Exhibit 2-11.

Release Controls: The unit is constructed of concrete. The surface of the unit is sloped to the facility's Stormwater Drainage System.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI.

5.55.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the unit is constructed of concrete and wastes are stored in closed containers.

- Surface Water: The potential for release to surface water is low because the unit is constructed of concrete and wastes are stored in closed containers and the surface of the area is sloped to drainage.

- Air: The potential for release to air is low because wastes are stored in closed containers.

- Subsurface Gas: The potential for subsurface gas generation is low because the unit is constructed of concrete and wastes are stored in closed containers.

5.56 SWMU #59 - Stormwater Drainage System (Photo #90 (A.3-5), Photo #91 (A.3-6), Photo #92 (A.3-7), Photo #93 (A.3-8), Photo #94 (A.3-9), Photo #95 (A.3-11), Photo #96 (A.3-15))

5.56.1 Information Summary

Unit Description: The Stormwater Drainage System drains the entire facility. The system consists of ditches and corrugated metal pipe. The ditches and pipe converge and drain to the Stormwater Sump (SWMU #60). The ditches are unlined and vary in width from approximately 3 feet to 6 feet and in depth from 2 feet to 5 feet. One of the unlined ditches is within 10 feet of the Yellow Stain Areas (AOC #1). The system drains to the Stormwater Sump. In the event of excessive rainfall, the first 100,000 gallons are drained to the Stormwater Sump. The remainder is diverted through a manually operated gate to NPDES-permitted outfall #001 that drains offsite to Industrial Park Ditch. Industrial Park Ditch drains to Beaver Bayou to Big Creek and onto the White River (46).

Dates of Operation: The dates of operation for this unit are from the mid to late 1970s to the present.

Wastes Managed: The unit manages stormwater runoff. The runoff draining to the Stormwater Drainage System could conceivably contain any of the chemicals named in Exhibit 2-11. However, since Production Areas are curbed and storage areas are diked, the volume of chemical wastes relative to total runoff is likely to be low.

Release Controls: No release controls were evident.

History of Releases: The unit periodically discharges offsite through the NPDES-permitted outfall during excessive rainfall events. During the VSI, an oily film was observed on the water near the control gate.

5.56.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is high because the unit is unlined and an only film was observed on the water.

- Surface Water: Releases to adjacent surface water occur through NPDES-permitted outfall #001 during heavy rains.

- Air: The potential for release to air is high because of the potentially volatile nature of many of the constitutes of the waste managed by the unit.

- Subsurface Gas: The potential for subsurface gas generation is high because the unit is unlined, an only film was observed on the water, and potentially volatile constituents may be present in the wastes managed.

5.57 SWMU #60 - Stormwater Sump (Photo #97 (A.3-3))

5.57.1 Information Summary

Unit Description: This unit (Photo A.3-3) is a component of the wastewater treatment system and is located on the north side of Industrial Park Road (Exhibit 2-5). This unit is an earthen basin approximately 50 feet by 12 feet deep with 3:1 side slopes. The capacity of the unit is approximately 200,000 gallons. This unit receives stormwater runoff, boiler blowdown, and noncontact cooling water. In the event of a heavy rainfall, the first 100,000 gallons of runoff will be received by this unit (2). When the capacity of the unit is reached, the remainder or the runoff in the ditch is directed to NPDES outfall #001 bypassing the wastewater treatment system and, therefore, preventing overflow of this unit. Outfall #001 is an NPDES-permitted point source discharge. Under normal operating conditions, stormwater stored in the unit from the sump is pumped to the API Separator (SWMU #62) (46).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages stormwater runoff, boiler blowdown and noncontact cooling water. The runoff draining to the Stormwater Drainage System could conceivably contain any of the chemicals named in Exhibit 2-11. However, since Production Areas are curbed and storage areas are diked, the volume of chemical wastes relative to total runoff is likely to be low.

Release Controls: The unit is unlined. In the event of excessive rainfall once this unit reaches capacity, the remaining runoff is discharged directly through NPDES-permitted outfall #001.

History of Releases: *In periods of excessive rainfall this unit backs up the* Stormwater Drainage System which is then discharged through the NPDES-permitted outfall.

5.57.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is high because the unit is unlined.

- Surface Water: The potential for release to surface water is low *because excessive inflow into the unit is prevented by diversion* to Outfall 001.

- Air: The potential for release to air is high because of the potentially volatile nature of the constituents of the waste managed by the unit.

- Subsurface Gas: The potential for subsurface gas generation is high because the unit is unlined and potentially volatile constituents may be present in the wastes managed.

5.58 SWMU #61 - Wastewater Tank #1 Wastewater Treatment System

(Photo #98 (A.2-37))

5.58.1 Information Summary

Unit Description: The unit is a tank of approximately 10,000-gallon capacity constructed of carbon steel and mounted horizontally on a concrete pad approximately 20 feet by 30 feet. A 2-foot high, six-inch thick concrete wall around the perimeter of the concrete base provides secondary containment. The unit is located on the southside of Industrial Park Road (Exhibit 2-5). The unit is heavily streaked, apparently with rust. The unit receives separated heavy and light oils directly from the API Separator (SWMU #62). If the oils are reusable, they are pumped back to the Production Areas for reuse, if not, they are shipped offsite for disposal (46, 47).

Dates of Operation: The unit has been operational from 1977 to the present. The unit is only used intermittently.

Wastes Managed: This unit manages separated oils and solvents from the API Separator.

Release Controls: The unit is located on a concrete pad approximately 20 feet by 30 feet which is diked with a 2-feet high, 6-inch thick concrete wall.

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI.

5.58.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the unit is a closed tank in a concrete containment area.

- Surface Water: The potential for release to surface water is low because the unit is a closed tank in a concrete containment area.

- Air: The potential for release to air is low because the unit is a closed tank.

- Subsurface Gas: The potential for subsurface gas generation is low because the unit is a closed tank in a concrete containment area.

5.59 SWMU #62 - API Separator (Photo #99 (A.2-35), Photo #100 (A.2-36))

5.59.1 Information Summary

Unit Description: This unit is a component of wastewater treatment system. The unit is located on the south side of Industrial Park Road (Exhibit 2-5). This unit is used to separate solvents and organic liquids which are not soluble in water (13). The unit is manufactured by Heil Process Corporation. It is epoxy-lined and constructed of carbon steel. The dimensions of this unit are approximately 8 feet by 8 feet by 12 feet high. Freeboard in the unit is regulated automatically. This unit can receive wastes directly from each of the Production Area Drainage Systems and Sumps (SWMUs #4, #5, #6 and #7) or from the Stormwater Sump (SWMU #60). Wastewater leaving this unit goes to the Flow Equalization Basin (SWMU #64) and separated oils go to Wastewater Tank #1 (SWMU #61) (46). According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. A soil sampling program is currently underway in the general vicinity of the wastewater treatment system (47).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages stormwater runoff and some of the waste streams generated in the production of propanil, RP-10, benzene sulfonyl chloride, alkylated phenols and methylthiopinacolone oxide that occurs in the Production Areas 1 through 5. Wastes that can be treated in the wastewater treatment system are pumped to this unit. The waste streams generated in each Production Area are summarized in Section 2-4.

Release Controls: The unit is constructed of epoxy-lined carbon steel. The facility representative indicated that freeboard in the unit is from 8 inches to 12 inches. Flow to the unit is regulated automatically to insure freeboard is maintained. The flow to the unit is regulated automatically.

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI.

5.59.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because of the design and construction of the unit and its release controls.

- Surface Water: The potential for release to surface water is low because of the design and construction of the unit and its release controls.

- Air: The potential for release to air is low because of the design and construction of the unit and its release controls.

- Subsurface Gas: The potential for subsurface gas generation is low because of the design and construction of the unit and its release controls.

5.60 SWMU #63 - Wastewater Tank #2 Wastewater Treatment System

(Photo #101 (A.2-30), Photo #102 (A.2-31))

5.60.1 Information Summary

Unit Description: The unit is a steel tank. The approximate capacity of the unit is 13,000 gallons. The dimensions of the tank are approximately 12 feet in diameter by 15 feet high. The unit is a component of the wastewater treatment system. The unit is located on the south side of Industrial Park Road (Exhibit 2-5) on an earthen dike that separates and is sloped to the Aeration Basin (SWMU #65) and the Polish Pond (SWMU #68). The tank receives waste directly from the Production Areas. Effluent from the tank is then pumped to the Aeration Basin (SWMU #65) bypassing the Flow Equalization Basin (SWMU #64). The unit is equipped with a sampling valve. According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. Staining of the soil surface was observed adjacent to and around the sampling valve (47).

Dates of Operation: The dates of operation for this unit are from 1977 to present.

Wastes Managed: This unit receives some of the wastestreams generated in Production Area #1 through #5. The wastestreams generated in each Production Area are summarized in Section 2-4.

Release Controls: The unit is located on a concrete pad, surrounded by bare ground. No other release controls were evident.

History of Releases: Staining was noted on the soil from leaks from the sampling valve.

5.60.2 Release Potential

- Soil/Groundwater: The soil was stained under and adjacent to the sampling valve. The potential for ongoing release to soil is high based on the observed leakage.

- Surface Water: The potential for release to surface water is low because the tank is located on an earthen dike which would drain either to the Aeration Basin or Polish Pond.

- Air: The potential for release to air is moderate because volatile constituents are present in the wastes managed by the unit and because of the observed leakage.

- Subsurface Gas: The potential for subsurface gas generation is moderate because of the volatile constituents of the waste managed by the unit and because of the observed leakage.

5.61 SWMU #64 - Flow Equalization Basin (Photo #103 (A.2-34))

5.61.1 Information Summary

Unit Description: This unit is a component of the wastewater treatment system. The unit is located on the south side of Industrial Park Road (Exhibit 2-5). This unit is an 8,000,000-gallon basin. This unit is used to equalize flows and concentrations prior to aerated biological treatment. The dimensions of this unit are 295 feet by 353 feet by 15 feet deep with 3:1 side slope. This unit is lined with American Colloid Company Volclay Saline Seal-100 (bentonite clay). Clay was applied at a minimum of 2.5 pounds of clay to each square foot of soil, spread evenly, mixed into the top 4 inches of soil and compacted at optimum moisture to a minimum of 85 modified proctor for a permeability of 1×10^{-7} cms/sec (4). This unit receives wastes from the API Separator (SWMU #62) (2, 46).

The unit has a maximum capacity of 7.3 million gallons but is operated at about 2,000,000 gallons or 40 days retention at an 8-foot water depth for normal operating conditions (2). The unit has a 25 hp Ashbrook aerator near the entrance of the influent pipe. According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. A soil sampling program is currently underway in the general vicinity of the wastewater treatment system (47).

The effluent is pumped from the Flow Equalization Basin to the Aeration Basin (SWMU #65) with a return line from the pump back to the entrance of the Flow Equalization Basin that allows the return and recirculation of the waste (2).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages effluent from the API Separator (SWMU #62).

Release Controls: The Equalization Basin is lined with bentonite clay. Three feet to 5 feet of freeboard were noted during the VSI.

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI. The integrity of the clay liner could not be evaluated during the VSI.

5.61.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the integrity of the clay liner could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because no evidence of breaching or overflow was observed during the VSI.

- Air: The potential for release to air is moderate because of the potentially volatile nature of the constituents of the waste managed by the unit and aeration operations.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the integrity of the clay liner could not be evaluated during the VSI.

5.62 SWMU #65 - Aeration Basin (Photo #104 (A.2-29))

5.62.1 Information Summary

Unit Description: This unit is a component of the wastewater treatment system. The unit is located on the south side of Industrial Park Road (Exhibit 2-5). This unit is 600,000-gallon pond. The dimensions of this unit 127 feet by 262 feet by 15 feet with 3:1 side slope. This unit is lined with American Colloid Company Volclay Saline Seal-100 (bentonite clay). Clay was applied at a minimum of 2.5 pounds of clay to each square foot of soil, spread evenly, mixed into the top 4 inches of soil and compacted at optimum moisture to a minimum of 85 modified proctor for a permeability of 1×10^{-7} cms/sec (4). This unit receives wastes from the Flow Equalization Basin (SWMU #64) and from Wastewater Tank #2 (SWMU #63). The return line to the Flow Equalization Basin has a static aerator for mixing in the Flow Equalization Basin. The aeration basin has nine days detention time, is completely mixed, and originally contained eight 7 1/2 H.P. floating aerators. The floating aerators have been replaced by bottom aerators (2, 46). According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. A soil sampling program is currently underway in the general vicinity of the wastewater treatment system (47).

Following treatment in the Aeration Basin, wastewater is pumped to two rectangular Clarifiers (SWMUs #66 and 67) (2).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages the effluent from the Flow Equalization Basin or Wastewater Tank #2. The characteristics of the waste streams generated in each Production Area are summarized in Section 2-4.

Release Controls: The unit is lined and 3 feet to 5 feet of freeboard were observed during the VSI.

History of Releases: There is no documented release history for this unit. There was no visible sign of release from this unit observed during the VSI. The integrity of the clay liner could not be evaluated during the VSI.

5.62.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the integrity of the clay liner could not be evaluated during the VSI.

- Surface Water: The potential for release to surface water is low because no evidence of breaching or overflow was observed during the VSI.

- Air: The potential for release to air is moderate because of the potentially volatile nature of the constituents of the waste managed by the unit and the nature of the aeration operations that occur in this unit.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the integrity of the clay liner could not be evaluated during the VSI.

5.63 SWMU #66 - Clarifier #1 (Photo #105 (A.2-28), Photo #106 (A.2-32))

5.63.1 Information Summary

Unit Description: This unit is a component of wastewater treatment system. This is one of two side-by-side clarifiers located on the south side of Industrial Park Road between the Polish Pond and the Aeration Basin (Exhibit 2-5). This unit is a chain and flight clarifier used to facilitate sludge return. The dimensions of this unit are 12 feet by 34 feet with 8-foot water depth. This unit is constructed of concrete. According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. A soil sampling program is currently underway in the general vicinity of the wastewater treatment system (47). This unit receives wastes from the Aeration Basin (SWMU #65). Effluent from the Clarifier is pumped to the Polish Pond (SWMU #68) (2, 46).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages waste effluent from the Aeration Basin.

Release Controls: The unit is constructed of 8-inch concrete. The freeboard was approximately 12 inches during the VSI.

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI.

5.63.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is low because the unit is constructed of concrete with no evidence of deterioration and no indication that the unit had ever been overtopped.

- Surface Water: The potential for release to surface water is low because the unit is constructed of concrete with no evidence of deterioration and no indication that the unit had ever been overtopped.

- Air: The potential for release to air is low because of the low volume of volatile materials present in the wastes managed.

- Subsurface Gas: The potential for subsurface gas generation is low because the unit is constructed of concrete with no evidence of deterioration and no indication that the unit had ever been overtopped.

5.64 SWMU #67 - Clarifier #2 (Photo #106 (A.2-32))

5.64.1 Information Summary

Unit Description: This unit is a component of wastewater treatment system. This is one of two side by side clarifiers located on the south side of Industrial Park Road between the Polish Pond (SWMU #68) and the Aeration Basin (SWMU #65) (Exhibit 2-5). This unit is a chain and flight clarifier used to facilitate sludge return. The dimensions of this unit are 12 feet by 34 feet with 8-foot water depth. This unit is constructed of concrete. According to the facility representative, water samples from the unit are analyzed for different parameters on a daily, weekly and monthly basis. A soil sampling program is currently underway in the general vicinity of the wastewater treatment system (47). This unit receives wastes from the Aeration Basin. Effluent from the Clarifier is pumped to the Polish Pond (2, 46).

Dates of Operation: The dates of operation for this unit are from 1977 to the present.

Wastes Managed: This unit manages effluent from the Aeration Basin.

Release Controls: The unit is constructed of 8-inch concrete. The freeboard was approximately 12 inches during the VSI.

History of Releases: There is no documented release history for this unit. There were no visible signs of release observed during the VSI.

5.64.2 Release Potential

- Soil/Groundwater: The potential for release i
  is low because the unit is constructed of con
  evidence of deterioration and no indication t
  been overtopped.

- Surface Water: The potential for release to
  because the unit is constructed of concrete w
  deterioration and no indication that the unit
  overtopped.

- Air: The potential for release to air is lo
  volume of volatile materials present in the

- Subsurface Gas: The potential for subsurfac
  low because the unit is constructed of concr
  of deterioration and no indication that the
  overtopped.

5.65 SWMU #68 - Polish Pond (Photo #107 (A.2-33))

5.65.1 Information Summary

Unit Description: This unit is a component of wastewater t
The unit is located on the south side of Industrial Park Rc
This unit is the final hold area before discharge to the M
has a capacity of 4,000,000 gallons. The dimensions of th
by 262 feet by 15 feet with 3:1 side slope. This unit is
Colloid Company, Volclay Saline Seal-100 (bentonite clay).
at a minimum of 2.5 pounds of clay to each square foot of
mixed into the top 4 inches of soil and compacted at optim
minimum of 85 modified proctor for a permeability of 1 x 1
unit receives wastes from the Clarifiers (SWMUs #66 and #6
has a detention time of nine days . According to the faci
water samples from the unit are analyzed for different par
weekly and monthly basis. A soil sampling program is curr
the general vicinity of the wastewater treatment system (4
from the Polish Pond is pumped 4.5 miles through an 8-inch
to NPDES-permitted outfall #002 at the Mississippi River (

Dates of Operation: The dates of operation for this unit
present.

Wastes Managed: This unit manages the effluent from the (

Release Controls: This unit is lined with bentonite clay. Five to eight feet of freeboard were noted during the VSI. The integrity of the clay liner could not be evaluated during the VSI.

History of Releases: Effluent from this unit is pumped 4.5 miles through an epoxy-lined pipe to an NPDES-permitted outfall to the Mississippi River. There was no other documented or visible sign of release from this unit.

5.65.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the integrity of the clay liner could not be verified during the VSI

- Surface Water: The potential for release to surface water is low because no evidence of breaching or overtopping was observed. However, the unit does release through NPDES-permitted outfall.

- Air: The potential for release to air is moderate because of the potentially volatile nature of the constituents of the wastes managed by the unit and the unit has an open top.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the integrity of the clay liner could not be verified during the VSI.

5.66 SWMU #69 - Inactive Pond #1 (Photo #108 (A.2-19), Ph

5.66.1 Information Summary

Unit Description: This unit is located in the southwest p facility (Exhibit 2-5). This unit is one of three ponds u construction of the wastewater treatment system. This uni surface impoundment. The dimensions of this unit are estin 150 feet. This unit was constructed of earthen fill. The wastes from onsite production processes and some wastes ger Contamination of the surface and subsurface of the unit ha EPA's FIT Contractor (15, 46).

Dates of Operation: The dates of operation for this unit a 1970s to 1978.

Wastes Managed: The pond received the propionic acid waste biodegraded in Cedar Chemical Corporation's wastewater trea calcium chloride brine stream from an insecticide process a waste which was neutralized over the lime bed. In addition Company, which for a time was partially owned by Vertac, al wastes in the pond. Helena Chemical formulated some 100 to Cedar Chemical Corporation has no knowledge of what type of produced. In 1978, the pond effluent was shipped offsite f pond was filled with dirt; pond sediments were never analyz

Release Controls: There were no release controls for this

History of Releases: Releases from this unit have not been documented by sampling although surface and subsurface contamination at the location of the unit has been documented (15).

5.66.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was high because the unit was unlined. Present and ongoing potential is high because contaminated soils were left in place when the unit was closed.

- Surface Water: The past potential for release to surface water was low to moderate because the unit was belowgrade. The present and ongoing potential is low to moderate for the same reason.

- Air: The past potential for release to air was high because of the volatile nature of the wastes. The present and ongoing release potential is low to moderate because the unit is covered.

- Subsurface Gas: The potential for subsurface gas generation was high because the unit was unlined. Present and ongoing potential is high because contaminated soils were left in place when the unit was closed and the wastes contained volatile constituents that may be entrapped in the soil pores.

5.67 SWMU #70 - Inactive Pond #2 (Photo #108 (A.2-19

5.67.1 Information Summary

Unit Description: This unit is located in the southw facility (Exhibit 2-5). This unit is one of three po construction of the wastewater treatment system. Thi surface impoundment. The dimensions of this unit wer by 150 feet. This unit was constructed of earthen fi wastes from onsite production processes and some wast Contamination of the surface and subsurface of the uni EPA's FIT Contractor (15, 46).

Dates of Operation: The dates of operation for this u to 1978.

Wastes Managed: The pond received the propionic acid biodegraded in Cedar Chemical Corporation's wastewater calcium chloride brine stream from an insecticide proc waste which was neutralized over the lime bed. In add Company, which for a time was partially owned by Verta wastes in the pond. Helena Chemical formulated some 1 Cedar Chemical Corporation has no knowledge of what ty produced. In 1978, the pond effluent was shipped offs pond was filled with dirt; pond sediments were never an

Release Controls: There were no release controls for t

History of Releases: Releases from this unit have not been documented by sampling although surface and subsurface contamination in the location of the unit has been documented (15).

5.67.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was high because the unit was unlined. Present and ongoing potential is high because contaminated soils were left in place when the unit was closed.

- Surface Water: The past potential for release to surface water was low to moderate because the unit was belowgrade. The present and ongoing potential is low to moderate for the same reason.

- Air: The past potential for release to air was high because of the volatile nature of the wastes. The present and ongoing release potential is low to moderate because the unit is covered.

- Subsurface Gas: The potential for subsurface gas generation was high because the unit was unlined. Present and ongoing potential is high because contaminated soils were left in place when the unit was closed and the wastes contained volatile constituents that may be entrapped in the soil pores.

5.68 SWMU #71 - Inactive Pond #3 (Photo #110 (A.2-21))

5.68.1 Information Summary

Unit Description: This unit is located in the southwest portion of the facility (Exhibit 2-5). This unit was one of three ponds used prior to construction of the wastewater treatment system. Limestone was added for acid neutralization. The dimensions of this unit are estimated as 30 feet by 120 feet. This unit was constructed of earthen fill. The unit received wastes from onsite production processes and some wastes generated offsite. The pond was closed by pumping the water which was disposed offsite and placing a cap of bentonite and native soil over the unit. Contamination of the surface and subsurface of the unit has been confirmed by EPA's FIT Contractor (15, 46).

Dates of Operation: The dates of operation for this unit are from the mid 1970s to 1978.

Wastes Managed: The pond received the propionic acid waste stream (presently biodegraded in Cedar Chemical Corporation's wastewater treatment system), a calcium chloride brine stream from an insecticide process and a sulfuric acid waste which was neutralized over the lime bed. In addition, Helena Chemical Company, which for a time was partially owned by Vertac, also disposed of wastes in the pond. Helena Chemical formulated some 100 to 200 compounds. Cedar Chemical Corporation has no knowledge of what type of wastes these produced. In 1978, the pond effluent was shipped offsite for disposal. In 1978, the pond was filled with dirt (15).

Release Controls: There were no release controls for this unit.

History of Releases: Releases from this unit have not been documented by sampling although surface and subsurface contamination in the location of the unit has been documented (15).

5.68.2 Release Potential

- Soil/Groundwater: The past potential for release to soil/groundwater was high because the unit was unlined. Present and ongoing potential is high because contaminated soils were left in place when the unit was closed.

- Surface Water: The past potential for release to surface water was low to moderate because the unit was belowgrade. The present and ongoing potential is low to moderate for the same reason.

- Air: The past potential for release to air was high because of the volatile nature of the wastes. The present and ongoing release potential is low to moderate because the unit is covered.

- Subsurface Gas: The potential for subsurface gas generation was high because the unit was unlined Present and ongoing potential is high because contaminated soils were left in place when the unit was closed and the wastes contained volatile constituents that may be entrapped in the soil pores.

5.69 SWMU #72 - Drum Vault (No Photo Available)

5.69.1 Information Summary

Unit Description: An underground Drum Vault is located at the facility underneath the warehouse. The location of the unit is shown in Exhibit 2-5. Approximately 250 drums containing solidified herbicide wastes are stored in the vault. The sidewalls of the vault are poured concrete. In the late 1970s the vault was filled with sand and gravel or possibly cement. The top of the vault is the concrete floor of the warehouse encasing the drums (12).

Dates of Operation: The unit was operational from the early 1970s to the late 1970s.

Wastes Managed: The unit manages solidified herbicide wastes. No other information about these wastes was available in the data or from the facility representative (12).

Release Controls: The sidewalls are concrete. It is not clear from the information available whether the vault was filled with sand and gravel or cement.

History of Releases: There is no documented release history for this unit. There was no visible sign of release observed during the VSI.

5.69.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the integrity of the unit could not be determined during the VSI.

- Surface Water: The potential for release to surface water is unknown because the integrity of the unit could not be determined during the VSI.

- Air: The potential for release to air is unknown because the integrity of the unit could not be determine during the VSI.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the integrity of the unit could not be determined during the VSI.

5.70 SWMU #73 - Buried Drums (No Photo Available)

5.70.1 Information Summary

Unit Description: Drums containing unknown potentially hazardous materials are reportedly buried onsite. The total number and exact location of the drum burial sites is not known (46).

Dates of Operation: The drums were buried sometime in the early 1970s.

Wastes Managed: The contents of the drums are not known.

Release Controls: The drums are buried. There are no other confirmed release controls.

History of Releases: There is no documented history of release. There was no visible evidence of release at the time of the VSI.

5.70.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is unknown because the condition of the drums is unknown.

- Surface Water: The potential for release to surface water is unknown because the condition of the drums is unknown.

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IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

- Air: The potential for release to air is unknown because the condition of the drums is unknown.

- Subsurface Gas: The potential for subsurface gas generation is unknown because the condition of the drums is unknown.

5.71 SWMU #74 - Loading/Unloading Area (Railroad Spur)

(Photo #111 (A.2-6), Photo #112 (A.2-9))

5.71.1 Information Summary

Unit Description: This unit is an unlined section of ground underlying the railroad spur. This unit is located near the northern perimeter of the facility along the Main Tank Farm between the operating Production Areas and the rail spur (13). This unit is a crushed stone surface. The dimensions of this unit are approximately 20 feet by 300 feet. This unit receives wastes from unloading of raw materials and loading of product and waste by-products. There was visible evidence of spillage along the entire length of the Loading and Unloading Area (46).

Dates of Operation: The unit has been in operation from the 1970s to the present.

Wastes Managed: This unit could receive spillage of any of the chemicals entering or leaving the facility so sny of the chemical constituents listed in Exhibit 2-11 could be present in the wastes managed by the unit.

Release Controls: The unit is unlined. No release controls were observed during the VSI.

History of Releases: There was visible evidence of staining along the entire length of the unit.

5.74.2 Release Potential

- Soil/Groundwater: The potential for release to soil/groundwater is high because the unit is unlined.

- Surface Water: The potential for release to surface water is low because the unit drains to the facility's Stormwater Drainage System.

- Air: The potential for release to air is moderate because there are volatile chemicals shipped to and from the facility.

- Subsurface Gas: The potential for subsurface gas generation is high because there are chemicals shipped to and from the facility which have a high subsurface gas generation capability.

6.0 AREAS OF CONCERN

This section of the PR/VSI report identifies an area of concern that was observed during the VSI.

6.1 Yellow Stain Areas (Photo #113 (A.2-25), Photo #114 (A.3-31))

Areas of the facility's ground surface are covered with a yellow stain. One stained area was located to the north and east of the warehouse (Exhibit 2-5). The facility representative indicated that for several years (1970-1973) the plant was operated by Ansel Corporation. The facility representative indicated the yellow stain areas may have been caused by Ansel, dumping wastes onsite. The facility representative indicated that the yellow stain may be wastes from the compound dinitrobutylphenol manufactured by Ansel but could not confirm the exact chemical composition of the stained area (46).

7.0 CONCLUSIONS AND RECOMMENDATIONS

SWMU #1 and #2 - Railroad Loading and Unloading Sumps

Suggested Action: No further action.

Reasons: The units are used to collect spillage from loading and unloading operations. There was no visible evidence of release noted during the VSI. Routine verification of the integrity of the sump is suggested.

SWMU #3 - Railroad Loading and Unloading Sump

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The units are used to collect spillage from loading and unloading operations. There was no visible evidence of release noted during the VSI, although severe deterioration of the unit was observed. Further investigation appears to be warranted based on the likelihood of hazardous constituents being present in the spillage and the deteriorated condition of the unit.

SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

Suggested Action: No further action.

Reasons: This unit receives spillage from the operations in the Production Area. The integrity of the sump could not be evaluated during the VSI because access to the sump was not possible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #5 - Production Area #3 Drainage System and Sump

Suggested Action: No further action.

Reasons: This unit receives spillage from the operations in the Production Area. The integrity of the sump could not be evaluated during the VSI because access to the sump was not possible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #6 - Production Area #4 Drainage System and Sump

Suggested Action: No further action.

Reasons: This unit receives spillage from the operations in the Production Area. The integrity of the sump could not be evaluated during the VSI because access to the sump was not possible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #7 - Production Area #5 Drainage System and Sump

Suggested Action: No further action.

Reasons: This unit has received spillage from previous manufacturing operations in the Production Area. However, the unit is not currently being used. The integrity of the sump could not be evaluated during the VSI because access to the sump was not possible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #8 - Boiler Blowdown Area Sump #1

Suggested Action: No further action.

Reasons: This unit receives boiler blowdown and surface runoff. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #9 - Boiler Blowdown Area Sump #2

Suggested Action: No further action.

Reasons: This unit receives boiler blowdown and surface runoff. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #10 - Laboratory Sump

Suggested Action: No further action.

Reasons: This unit receives wastes from laboratory operations. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #11 - Sump Near Main Tank Farm

Suggested Action: No further action.

Reasons: This unit receives cooling tower blowdown and surface runoff. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #12 - Maintenance Shop Drainage System and Sump

Suggested Action: No further action.

Reasons: This unit receives floor spillage from Maintenance Shop operations. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #13 - Truck Scale Sump

Suggested Action: No further action.

Reasons: This unit receives spillage from incoming and outgoing trucks. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #14 - Packaging Building Sump

Suggested Action: No further action.

Reasons: This unit receives spills from packaging operations. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMUs #15, #16 and #17 - Air Emissions Scrubbers #01, #02, and #03

Suggested Action: No further action.

Reasons: These units manage gaseous emissions from the production process. Air Emissions Scrubber #03 is no longer operational. There was no evidence of release observed during the VSI.

SWMU #18 - Air Emissions Scrubber #04

Suggested Action: No further action.

Reasons: This unit manages gaseous emissions from the production process. There was no evidence of release observed during the VSI.

SWMU #19 - Sump in Main Tank Farm Diked Area #1 (North)

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was filled with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #20 - Sump in Main Tank Farm Diked Area #1 (South)

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #21 - Sump in Main Tank Farm Diked Area #2

Suggested Action: No further action.

Reasons: This unit receives spillage from the tanks located within it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #22 - Sump in Main Tank Farm Diked Area #3

Suggested Action: No further action.

Reasons: This unit receives spillage from the tanks located within it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #23 - Waste Storage Tank PE-209 in Main Tank Farm Diked Area #4

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #24 - Waste Storage Tank 002 in Main Tank Farm Diked Area #5

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #25 - Sump in Main Tank Farm Diked Area #6

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #26 - Sump in Main Tank Farm Diked Area #7

Suggested Action: No further action.

Reasons: This unit receives spillage from the tanks located within it. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. There was visual evidence of deterioration at the time of the VSI. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #27 - Tank B-109 in Main Tank Farm Diked Area #7

Suggested Action: No further action.

Reasons: This unit previously received scrubber liquor generated by Air Emissions Scrubber #03 (SWMU #17). The unit is no longer operational. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #28 - Waste Storage Tank B-112 in Main Tank Farm Diked Area #8

Suggested Action: No further action.

Reasons: This unit previously received wastewaters generated by production activities. The unit is no longer operational. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #29 - Sump in Main Tank Farm Diked Area #9

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #30 - Waste Water Storage Tank B-102 in Main Tank Farm Diked Area #10

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #31 - Sump in Main Tank Farm Diked Area #11

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #32 - Sump in Main Tank Farm Diked Area #12

Suggested Action: No further action.

Reasons: This unit collected spills from the tank previously located in the containment area. However, the unit is not currently operational. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #33 - Tank N-204 in Main Tank Farm Diked Area #13

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #34 - Tank N-201 in Main Tank Farm Diked Area #14

Suggested Action: No further action.

Reasons: This unit receives scrubber liquor generated by Air Emissions Scrubber #04 (SWMU #18). The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #35 - Tank N-205 in Main Tank Farm Diked Area #15

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #36 - Tank N-206 in Production Area #4

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #37 - Sump in Main Tank Farm Diked Area #16

Suggested Action: No further action.

Reasons: This unit collects spillage from the tank located in it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #38 - Sump in Main Tank Farm Diked Area #17

Suggested Action: No further action.

Reasons: This unit previously received spillage from the tanks located within it. However, the unit is not currently operational. The integrity of the unit could not be determined during the VSI because the unit was covered with water. There was visual evidence of deterioration at the time of the VSI. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #39 - Tank M-105 in Main Tank Farm Diked Area #17

Suggested Action: No further action.

Reasons: This unit previously received wastewaters generated by production activities. However, the unit is not currently operational. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #40 - Sump in Main Tank Farm Diked Area #18

Suggested Action: No further action.

Reasons: This unit previously received spillage from the tanks located within it. However, the unit is not currently operational. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #41 - Sump in Main Tank Farm Diked Area #19

Suggested Action: No further action.

Reasons: This unit collected spillage from the tanks located in it. However, the unit is no longer operational. The integrity of the unit could not be determined during the VSI because the unit was inaccessible. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #42 - Sump in Second Tank Farm Diked Area #1

Suggested Action: No further action.

Reasons: This unit receives spillage from the tanks located within it. The integrity of the unit could not be determined during the VSI because the unit was covered with water. Therefore, it is suggested that the integrity of the unit be verified.

SWMU #43 - Wastewater Tank 014 in Second Tank Farm Diked Area #3

Suggested Action: No further action.

Reasons: This unit receives wastewaters generated by production activities. The unit appeared intact at the time of the VSI and had secondary release controls.

SWMU #44 - Hazardous Waste Storage Area

Suggested Action: No further action.

Reasons: This unit receives hazardous waste prior to shipment offsite. The wastes are stored in sealed containers and the unit has secondary release controls. There was no evidence of past or indication of probable future release.

SWMU #45 - Nonhazardous Waste Storage Area

Suggested Action: No further action.

Reasons: This unit receives nonhazardous wastes stored in drums. The unit appear intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #46 - Drum Storage Area

Suggested Action: No further action.

Reasons: The unit managed empty drums that appeared to be intact and in average to good condition. Release potential from the unit to all media appeared to be low.

SWMU #47 - Drum Crushing Area

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: In this unit, drums that previously contained raw materials and products are crushed. These materials contained hazardous constituents. Staining of this area and cracks in the integrity of the unit were noted during the VSI. Release to the media is likely.

SWMU #48 - Waste Drum Staging Area

Suggested Action: No further action.

Reasons: The unit managed empty drums that appeared to be intact and in average to good condition. Release potential from the unit to all media appeared to be low.

SWMU #49 - Scrap Drum Storage Wagons

Suggested Action: No further action.

Reasons: The units appeared intact and functional at the time of the VSI. Release potential from the units to all media appeared to be low.

SWMU #50 - Waste Drums Staging Area in Main Tank Farm Area

Suggested Action: No further action.

Reasons: The unit manages empty drums that appeared to be intact and in average to good condition. Release potential from the unit to all media appeared to be low.

SWMU #51 - Waste Oil Drum

Suggested Action: No further action.

Reasons: The unit appeared functional at the time of the VSI. Staining of the concrete pad surface was noted during the VSI, although no release to soils was observed. It is suggested that better management practices be initiated to prevent staining and possible release of waste oil to the media.

SWMU #52 - Drums

Suggested Action: No further action.

Reasons: A determination of release potential cannot be made until the contents of the drums are verified. This unit has no release controls.

SWMU #53 - Solvent Cleaner Tank

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #54 - Miscellaneous Drum Storage

Suggested Action: No further action.

Reasons: A determination of release potential cannot be made until the contents of the drums are verified. The units have no release controls.

SWMU #55 - Dumpsters

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #56 - Laboratory Waste Rack Area

Suggested Action: No further action.

Reasons: The unit appeared functional at the time of the VSI. Staining of the concrete pad surface near this unit was noted during the VSI, although no staining of the soils was noted. It is suggested that better management practices be initiated to prevent staining and possible release of wastes to the media.

SWMU #57 - Warehouse Drum Storage Area

Suggested Action: No further action.

Reasons: The unit manages wastes stored in closed containers and empty containers. Release potential from the unit to all media appeared to be low.

SWMU #58 - Loading/Unloading Dock Area

Suggested Action: No further action.

Reasons: The unit manages wastes stored in closed containers and empty containers. Release potential from the unit to all media appeared to be low.

SWMU #59 - Stormwater Drainage System

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit receives stormwater runoff which may be contaminated with any of the raw materials and products from the facility. In addition, the Yellow Stain Areas (AOC #1) are located less than 10 feet from one of the unlined channels. The unit has no release controls and has a high release potential to soil/groundwater and subsurface gas.

SWMU #60 - Stormwater Sump

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit receives stormwater runoff which may be contaminated with any of the raw materials and products from the facility. The unit has no release controls and has a high release potential to soil/groundwater and subsurface gas.

SWMU #61 - Wastewater Tank #1 Wastewater Treatment System

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #62 - API Separator

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. No evidence of release was noted during the VSI.

SWMU #63 - Wastewater Tank #2 Wastewater Treatment System

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit manages waste from the Production Area Sumps. Hazardous constituents are being released to soils, as during the VSI. wastes were dripping from the sampling valve on the soils below the valve. Staining was observed on the soils adjacent to the sampling valve.

SWMU #64 - Flow Equalization Basin

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit has an unknown release potential to soils and groundwater as the integrity of the clay liner is unknown. A sampling program is currently underway at the unit under a Consent Order Agreement. Evaluation of the adequacy and results of that program may be warranted to determine the scope of any further sampling.

SWMU #65 - Aeration Basin

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit has an unknown release potential to soils and groundwater as the integrity of the clay liner is unknown. A sampling program is currently underway at the unit under a Consent Order Agreement. Evaluation of the adequacy and results of that program may be warranted to determine the scope of any further sampling.

SWMU #66 - Clarifier #1

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #67 - Clarifier #2

Suggested Action: No further action.

Reasons: The unit appeared intact and functional at the time of the VSI. Release potential from the unit to all media appeared to be low.

SWMU #68 - Polish Pond

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The unit has an unknown release potential to soils and groundwater as the integrity of the clay liner is unknown. A sampling program is currently underway at the unit under a Consent Order Agreement. Evaluation of the adequacy and results of that program may be warranted to determine the scope of any further sampling.

SWMU #69 - Inactive Pond #1

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: A release of hazardous constituents in the unit has been confirmed (15). Additional sampling is necessary to determine the extent of vertical and horizontal contamination.

SWMU #70 - Inactive Pond #2

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: A release of hazardous constituents in the unit has been confirmed (15). Additional sampling is necessary to determine the extent of vertical and horizontal contamination.

SWMU #71 - Inactive Pond #3

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: A release of hazardous constituents in the unit has been confirmed (15). Additional sampling is necessary to determine the extent of vertical and horizontal contamination.

SWMU #72 - Drum Vault

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: Hazardous wastes have been buried in this unit. The current condition of the unit is unknown and hazardous constituents are potentially being released to the media.

SWMU #73 - Buried Drums

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: The location of the drums is not known. The current condition of the drums are unknown and hazardous constituents are potentially being released to the media.

SWMU #74 - Loading/Unloading Area (Railroad Spur)

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: There was visible evidence of staining observed during the VSI. It is suggested that the vertical and horizontal extent of contamination be determined.

AOC #1 - Yellow Stain Areas

Suggested Action: An RFI appears to be warranted for this unit.

Reasons: There were visible signs of soil contamination observed during the VSI. It is suggested that the nature and extent of the contamination be verified.

8.0 REFERENCES

1. River Chemical Corporation Soil Laboratory Engineering Report, 6/76.

2. Engineer's Report to Eagle River Chemical Company, West Helena, Arkansas on Proposed Wastewater Treatment System by Shreeve Engineering, Ltd., 4/20/77.

3. Hydrogeological Investigation of Vertac Chemical Corporation Facility, West Helena, Arkansas. Prepared by Developers, International Services Corporation, 12/15/81.

4. Vertac Chemical Corporation Wastewater Treatment System - Construction Details, 9/29/81.

5. Vertac Chemical Corporation Existing Monitoring Wells - Location and Structure, 9/29/81.

6. Vertac Chemical Corporation Monitoring Wells - Analytical Data, 9/29/81.

7. Vertac Chemical Corporation Site and Climatic Data, 9/29/81.

8. Vertac Chemical Corporation Groundwater Monitoring Plan, 10/1/81.

9. Vertac, Inc. Aquatic Organism Bioassay of an Industrial Wastewater, 3/17 - 3/21/82.

10. Vertac Chemical Corporation Groundwater Monitoring Plan (Revised June 1983).

11. Ecology and Environment, Inc. Field Investigation Team Site Safety Plan, 7/24/84.

12. Renewal Report on Vertac Chemical Corporation, Vicksburg, Mississippi and West Helena, Arkansas by Environmental Risk Assessment Service (USA), Ltd., 7/25/84.

13. Vertac Chemical Corporation Resource Conservation and Recovery Act Part B Permit Application, 8/14/84.

14. Draft of Supplemental Environmental Impact Statement, Binary Program Alternatives, Production of QL at the Newport Army Ammunition Plant, Indiana or Vertac Chemical Corporation, West Helena, Arkansas Plant Site, Department of the Army, 4/19/85.

15. Letter from Miles Bolton, Groundwater Hydrologist, Ecology and Environment, Inc., Region VI, to Keith Bradley, Region VI RPO Regarding Sampling Mission Results from the Vertac-West Helena Site, West Helena, Arkansas (AR-361) TDD# R06-8507-13, 7/29/86.

16. Proposal for Environmental Action at Cedar's West Helena Site, 1/23/87.

17. Cedar Chemical Corporation Management of Containerized Waste, 6/87.

18. Letter from Joe E. Porter, Environmental Engineer for Cedar Chemical Corporation, to Karen Deere, Enforcement Coordinator, Arkansas Department of Pollution Control and Ecology Regarding Consent Administrative Order, LIS 86-027, 8/13/87.

19. U.S. Environmental Protection Agency Potential Hazardous Waste Site Identification and Preliminary Assessment, 7/24/80.

20. U.S. Environmental Protection Agency Form 3510-1, General Information, Consolidated Permits Program, 11/19/80.

21. U.S. Environmental Protection Agency Potential Hazardous Waste Site Tentative Disposition, 3/8/84.

22. Letter from U.S. Environmental Protection Agency Regarding Potential Hazardous Waste Site, 8/2/84.

23. U.S. Environmental Protection Agency Application for Permit to Discharge Wastewater, Existing Manufacturing, Commercial, Mining and Silvicultural Operations.

24. U.S. Environmental Protection Agency National Dioxin Study, Statement of Work for Contract Procurement, 1984.

25. U.S. Environmental Protection Agency NPDES Compliance Inspection Report, 5/1/85.

26. U.S. Environmental Protection Agency NPDES Compliance Inspection Report, 11/5/85.

27. Summary Report of Closure and Post-Closure Plan for Vertac Chemical Corporation, West Helena Plant, ARD 990660649, 9/22/84.

28. Potential Hazardous Waste Site, Tentative Disposition, 6/17/85.

29. U.S. Environmental Protection Agency NPDES Compliance Inspection Report, 5/27/86.

30. Potential Hazardous Waste Site, Tentative Disposition, 9/8/86.

31. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, M.2 - Site Maintenance Form, 4/27/87.

32. U.S. Environmental Protection Agency Region VI Questionnaire.

33. Permit No. ARD0036412. Authorization to Discharge Under the National Pollutant Discharge Elimination System. Authorizing Vertac Incorporated, West Helena Plant, P.O. Box 2648, West Helena, Arkansas 72390 to discharge from Eagle River Chemical Company, Highway 242, West Helena, Arkansas, 2/22/77.

34. Permit No. ARD0036412. Authorization to Discharge Under the National Pollutant Discharge Elimination System.

35. RCRA Inspection, Site Identification, 2/28/83.

36. Closure and Post-Closure Compliance Review Checklist, 9/30/83.

37. RCRA Inspection, Site Identification, 5/23/84.

38. RCRA Inspection, Site Identification, 8/22/85.

39. RCRA Inspection, Site Identification, 5/30/86.

40. RCRA Inspection, Site Identification, 8/6/87.

41. Arkansas Department of Pollution Control and Ecology Consent Administrative Order in the Matter of Cedar Chemical Corporation, 1986.

42. Arkansas Department of Pollution Control and Ecology Notice of Violation, 12/86.

43. Selected Correspondence, Cedar Chemical Corporation.

    43a. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology, 11/789.

    43b. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding RCRA Inspection - February 9, 1983, 5/25/83.

43c. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding Application for Modification of Arkansas Air Pollution Control Code Permit No. 126A, 7/9/84.

43d. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding an Addendum to Hazardous Waste Management Permit Application, 11/1/84.

43e. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding NPDES Permit No. ARD 0036412, 5/31/85.

43f. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding RCRA Inspection of August 22, 1985, 10/14/85.

43g. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology, 11/4/85.

43h. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology, 2/5/86.

43i. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology, 2/24/87.

43j. Letter from Vertac Chemical Corporation to U.S. Environmental Protection Agency, 1/2/86.

43k. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding Inspection Report Information, 7/3/86.

43l. Letter from Vertac Chemical Corporation to Arkansas Department of Pollution Control and Ecology Regarding Additional Information to Complete RCRA Inspection, 9/8/87.

44. Selected Correspondence, Arkansas Department of Pollution Control and Ecology.

44a. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation Regarding Financial Assurance of Closure and Post-Closure Care and Liability Coverage for Student and Non-Student Accidents, 4/1/83.

44a. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation Regarding RCRA Inspection Conducted at Vertac, West Helena, on February 9, 1983, 4/27/83.

44b. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation Regarding State Air Permit, 7/16/84.

44c. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation, 7/16/84.

44d. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation Regarding Request for Deletion of NPDES Treatment Lagoon from List of Interim Status Facilities Requiring a RCRA Permit, 7/16/84.

44e. Letter from Arkansas Department of Pollution Control and Ecology to Vertac Chemical Corporation Regarding Inspection of Vertac Chemical Corporation, West Helena, 9/16/85.

44f. Letter from Arkansas Department of Pollution Control and Ecology to Bob Blanz, Ph.D., Deputy Director Regarding Request for Case Referral, 8/14/86.

44g. Letter from Arkansas Department of Pollution Control and Ecology In the Matter of Cedar Chemical Corp and Vertac Chemical Corp, West Helena, Arkansas (ARD990660649), 12/19/86.

44g. Letter from Arkansas Department of Pollution Control and Ecology to Cedar Chemical Corporation Regarding Consent Administrative Order, 8/20/87.

45. Selected Correspondence, Environmental Protection Agency.

45a. Letter from the U.S. Environmental Protection Agency to Oscar Ramirez, Acting Director, Surveillance and Analysis Division, 6ASA Regarding Laboratory Report of Vertac, Inc., 11/27/79.

45b. Letter from the U.S. Environmental Protection Agency to Vertac Chemical Corporation Regarding Inspection Report Prepared by Ecology and Environment, Inc., 4/6/84.

45c. Letter from the U.S. Environmental Protection Agency to Arkansas Department of Pollution Control and Ecology Regarding Vertac's Reconnaissance Inspection, 7/18/84.

45d. Letter from the U.S. Environmental Protection Agency to Arkansas Department of Pollution Control and Ecology Regarding Vertac's Summary Report of the Closure and Post-Closure Plan, 9/22/84.

45e. Letter from the U.S. Environmental Protection Agency to Martha McKee, Compliance Section Regarding Vertac's Potential Hazardous Waste Site, 2/20/85.

45f. Letter from the U.S. Environmental Protection Agency to James Stiebing, Surveillance Branch Regarding Vertac Chemical's Performance Audit Inspection, 2/25/86.

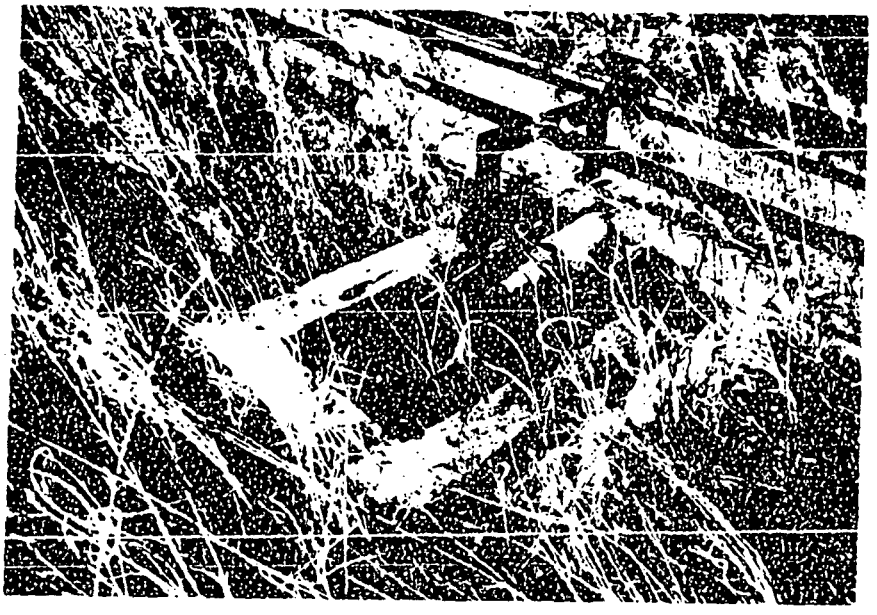
45g. Letter from the U.S. Environmental Protection Agency to Mr. John H. Mills, Plant Manager, Cedar Chemical Corporation Regarding Facility's Violation of NPDES Permit No. AR0036412, 6/18/87.

46. VSI Notes.

47. Background information provided by Cedar Chemical Corporation during Visual Site Inspection, 12/16-17/1987.

Appendix A

VSI PHOTO LOG



#1 (A.2-10) Cedar Chemical Corporation, 12/16/87, 4:01 p.m.
SWMU #1 and #2 - Railroad Loading and Unloading Sumps

#2 (A.2-11) Cedar Chemical Corporation, 12/16/87, 4:03 p.m.
SWMU #2 - Railroad Loading and Unloading Sumps
Unit is no longer operational

#3 (A.4-15) Cedar Chemical Corporation, 12/17/87, 11:15 a.m.
SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

Photo of Drainage System

#4 (A.4-16) Cedar Chemical Corporation, 12/17/87, 11:16 a.m.
SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

Photo of Sump

#3 (A.4-15) Cedar Chemical Corporation, 12/17/87, 11:15 a.m.
SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

Photo of Drainage System

#4 (A.4-16) Cedar Chemical Corporation, 12/17/87, 11:16 a.m.
SWMU #4 - Production Areas #1 and #2 Drainage System and Sump

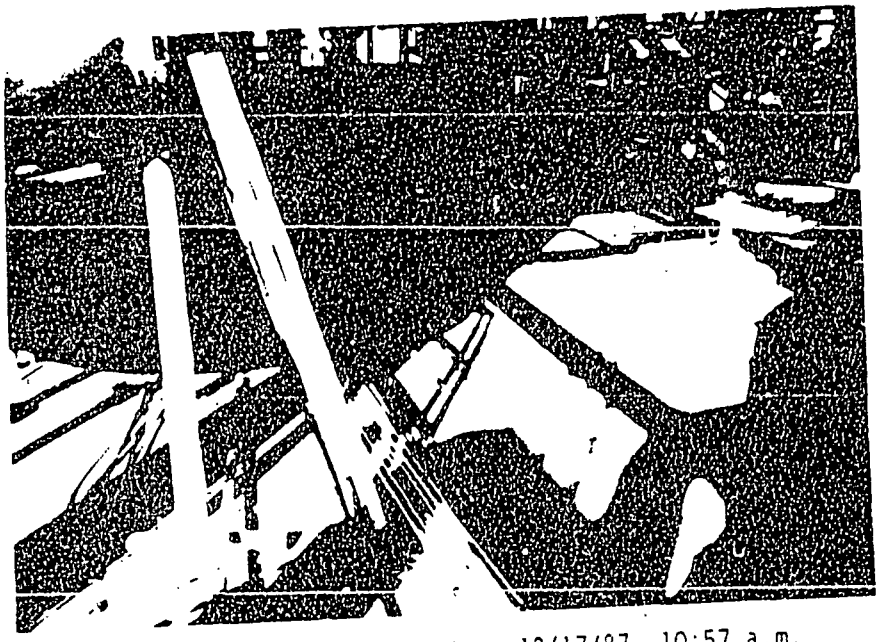
Photo of Sump

#5 (A.4-11) Cedar Chemical Corporation, 12/17/87, 11:08 a.m.
SWMU #5 - Production Area #3 Drainage System and Sump

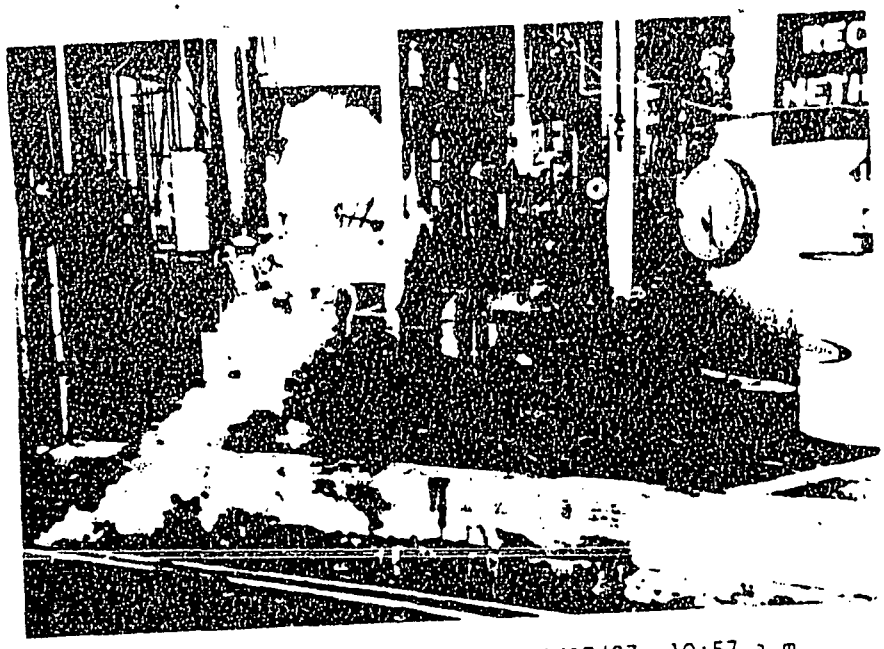
Photo of Sump

#6 (A.4-12) Cedar Chemical Corporation, 12/17/87, 11:08 a.m.
SWMU #5 - Production Area #3 Drainage System and Sump

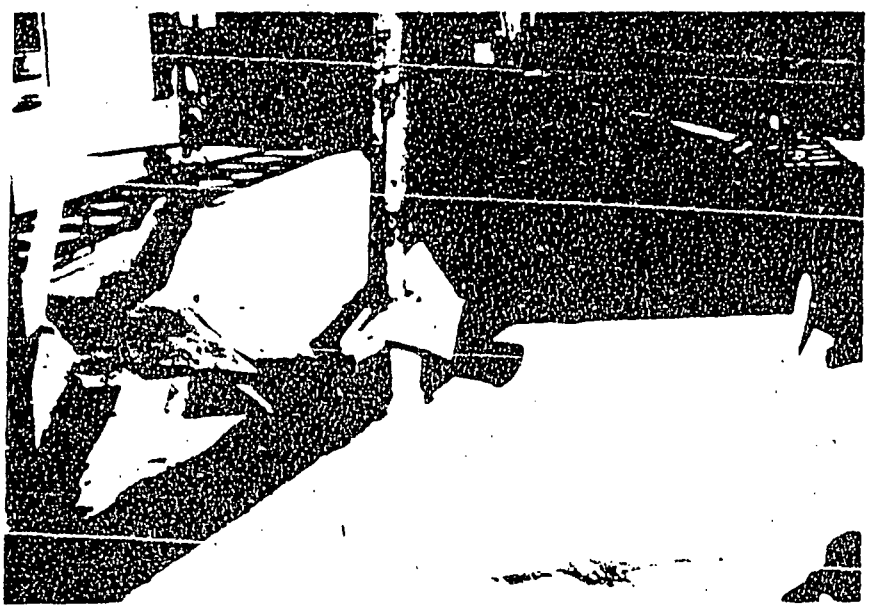
Photo of Drainage System



#7 (A.4-6) Cedar Chemical Corporation, 12/17/87, 10:57 a.m.
SWMU #6 - Production Area #4 Drainage System and Sump



#8 (A.4-8) Cedar Chemical Corporation, 12/17/87, 10:57 a.m.
SWMU #6 - Production Area #4 Drainage System and Sump

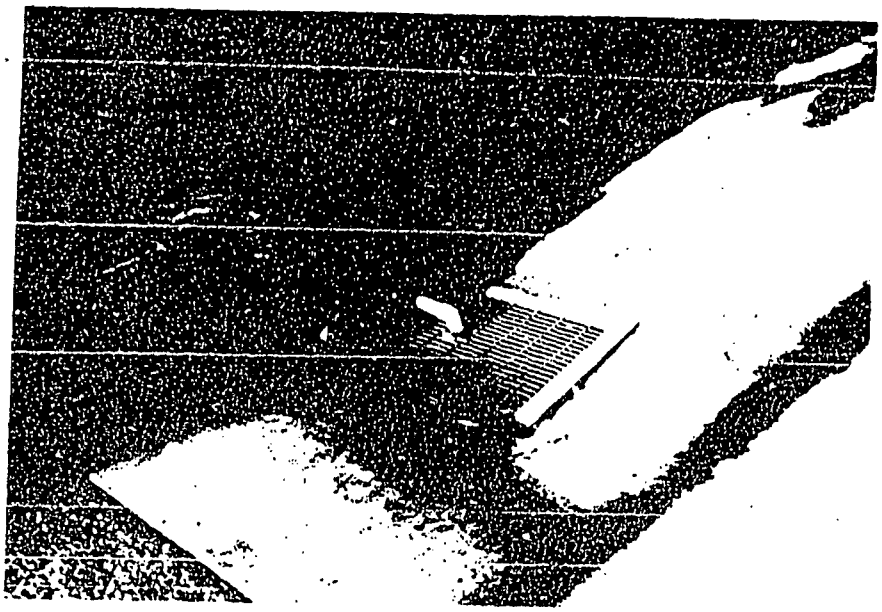


#9 (A.4-4) Cedar Chemical Corporation, 12/17/87, 10:52 a.m.
SWMU #7 - Production Area #5 Drainage System and Sump
Unit is no longer operational

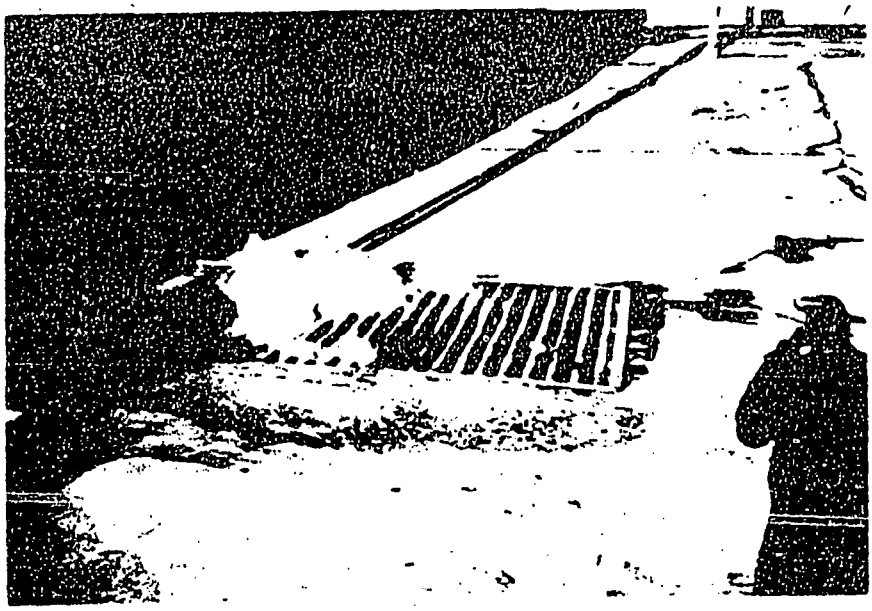
Photo of Sump

#10 (A.4-5) Cedar Chemical Corporation, 12/17/87, 10:52 a.m.
SWMU #7 - Production Area #5 Drainage System and Sump
Unit is no longer operational

Photo of Drainage System

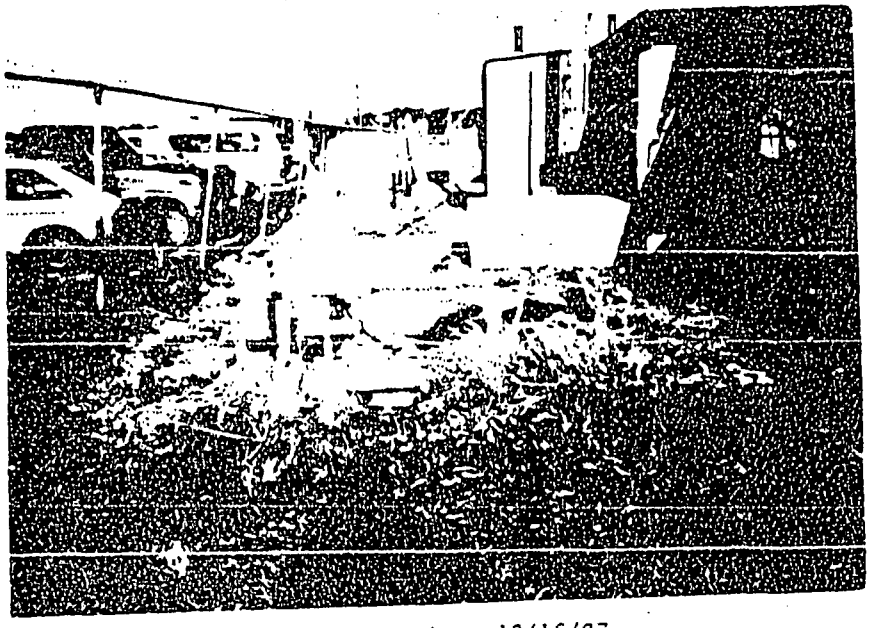


#11 (A.1-9) Cedar Chemical Corporation, 12/16/87, 2:48 p.m.
SWMU #8 - Boiler Blowdown Area Sump #1

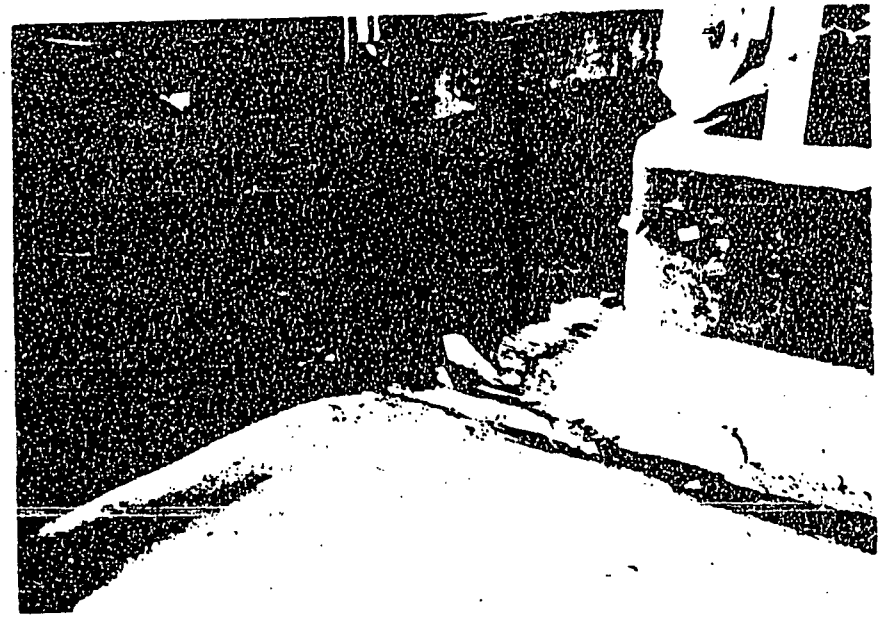


#12 (A.1-8) Cedar Chemical Corporation, 12/16/87, 2:49 p.m.
SWMU #9 - Boiler Blowdown Area Sump #2

Note: Staining adjacent to sump



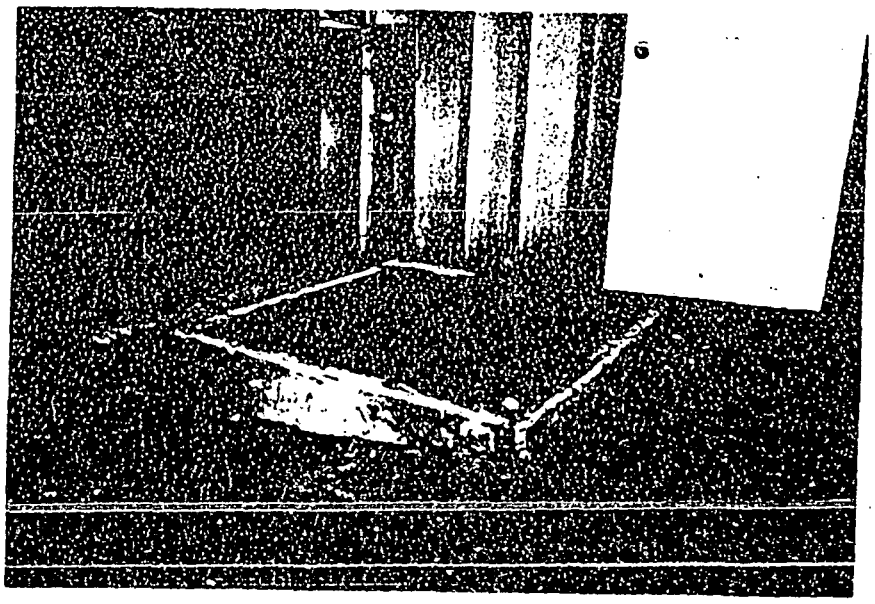
#13 (A.1-2) Cedar Chemical Corporation, 12/16/87
SWMU #10 - Laboratory Sump



#14 (A.1-16) Cedar Chemical Corporation, 12/16/87, 4:01 p.m.
SWMU #11 - Sump Near Main Tank Farm

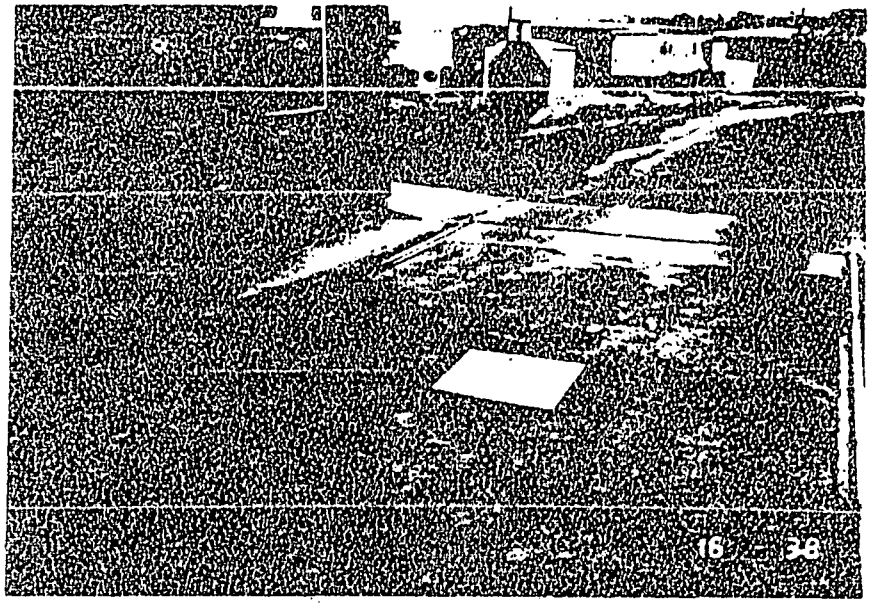
#15 (A.4-2) Cedar Chemical Corporation, 12/17/87, 10:48 a.m.
SWMU #12 - Maintenance Shop Drainage System and Sump

Photo of Drainage inside of Shop

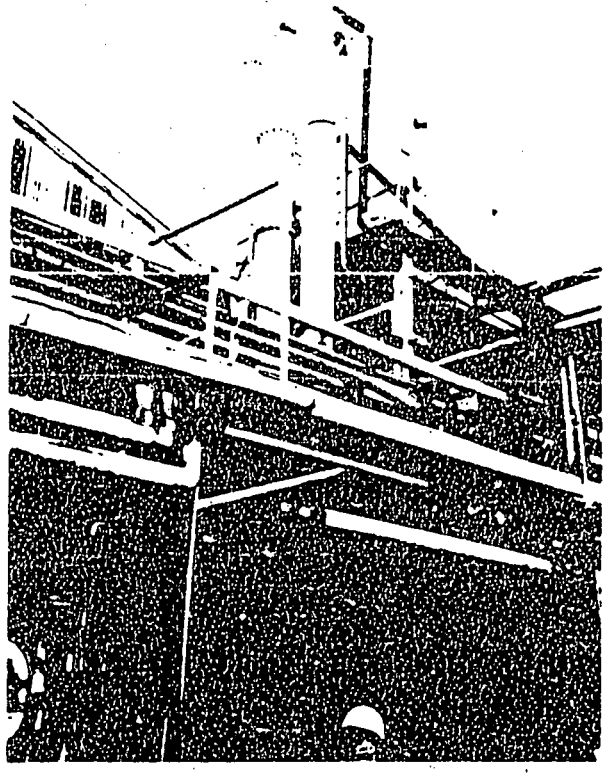


#16 (A.4-3) Cedar Chemical Corporation, 12/17/87, 10:49 a.m.
SWMU #12 - Maintenance Shop Drainage System and Sump

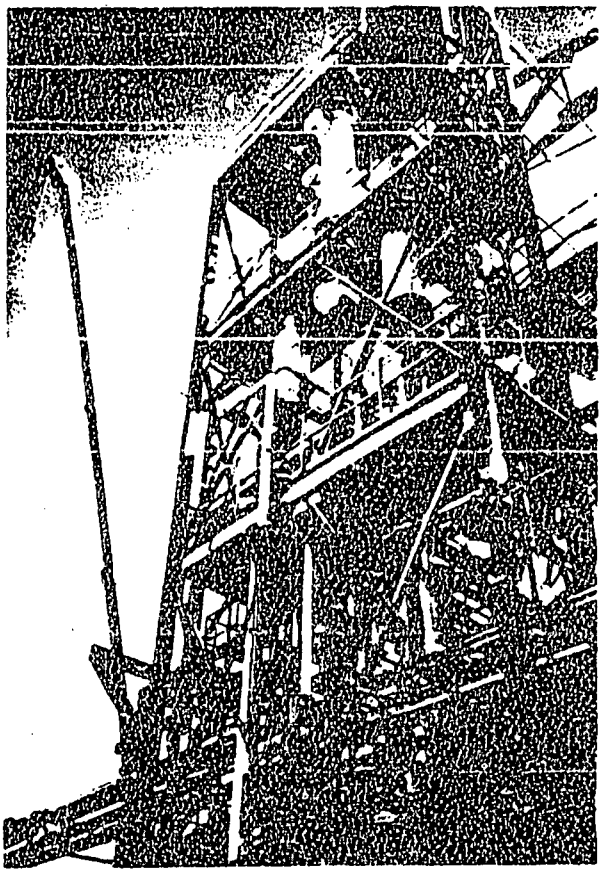
Photo of Sump outside of Shop



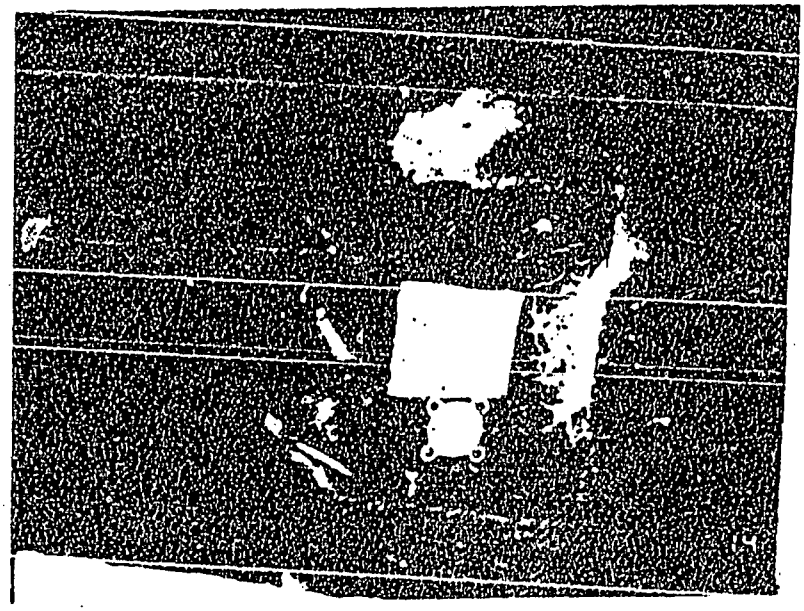
#17 (A.2-18) Cedar Chemical Corporation, 12/17/87, 4:38 p.m.
SWMU #13 - Truck Scale Sump



#18 (A.4-18) Cedar Chemical Corporation, 12/17/87, 11:25 a.m.
SWMUs #15, #16, #17 - Air Emissions Scrubbers #01, #02 and #03

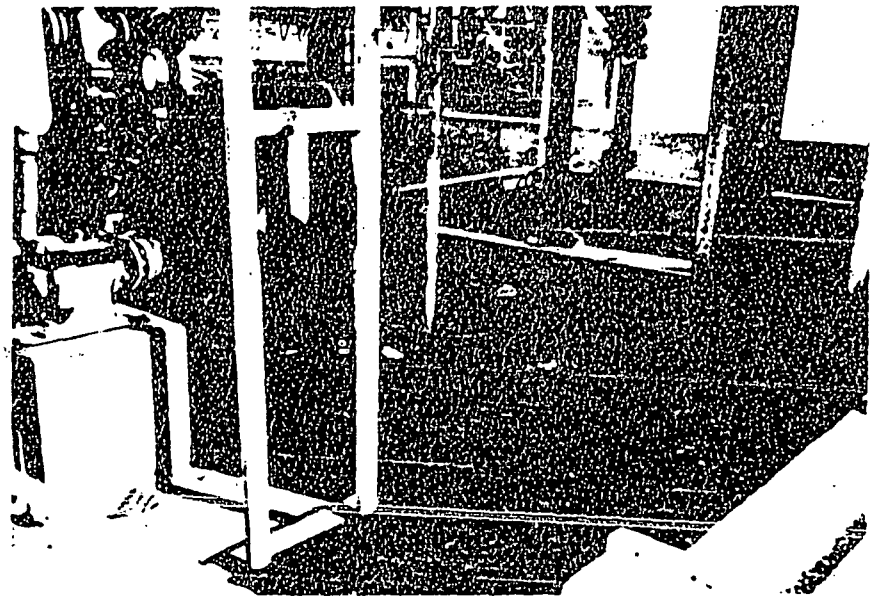


#19 (A.4-9) Cedar Chemical Corporation, 12/17/87, 11:09 a.m.
SWMU #18 - Air Emissions Scrubber #04

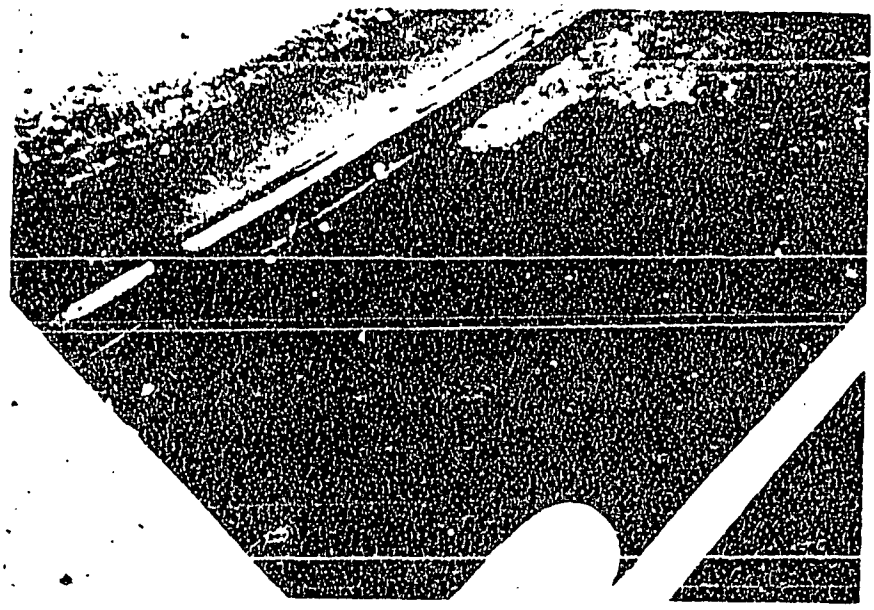


#20 (A.1-7) Cedar Chemical Corporation, 12/17/87, 2:46 p.m.
SWMU #19 - Sump in Main Tank Farm Diked Area #1 (North)

Note: Standing water in the sump

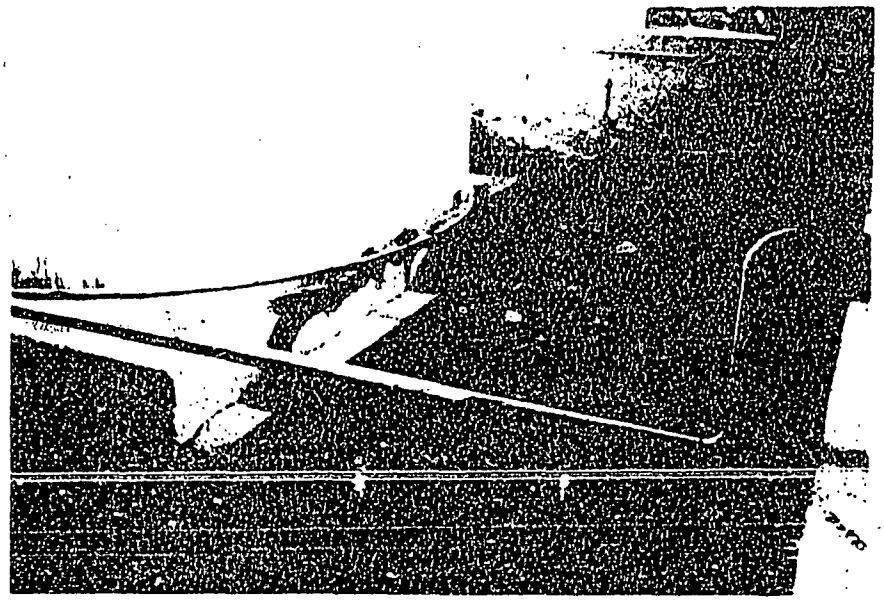


#21 (A.5-4) Cedar Chemical Corporation, 12/17/87, 1:23 p.m.
SWMU #19 - Sump in Main Tank Farm Diked Area #1 (North)

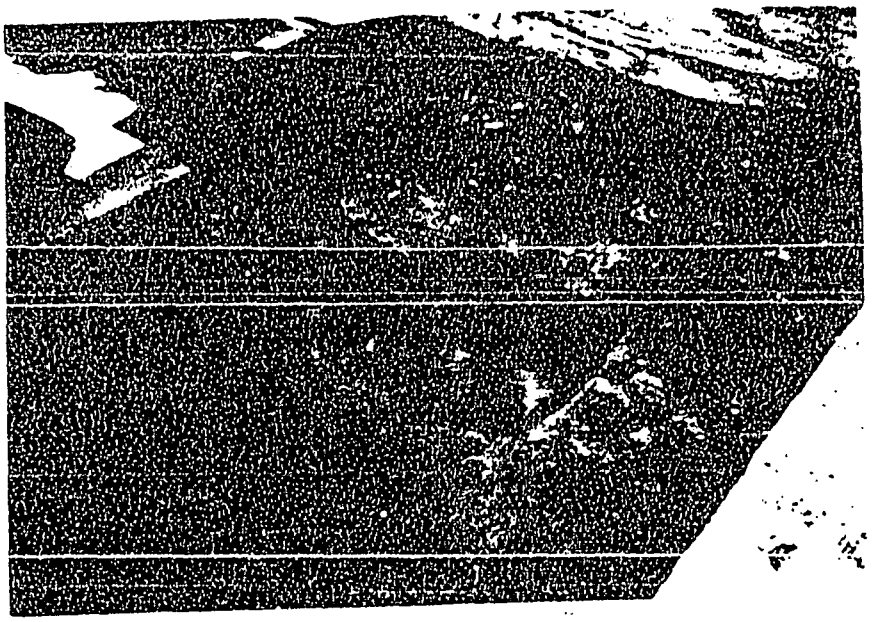


#22 (A.1-6) Cedar Chemical Corporation, 12/16/87, 2:45 p.m.
SWMU #20 - Sump in Main Tank Farm Diked Area #1 (South)

Note: Standing water and deterioration of the cement.

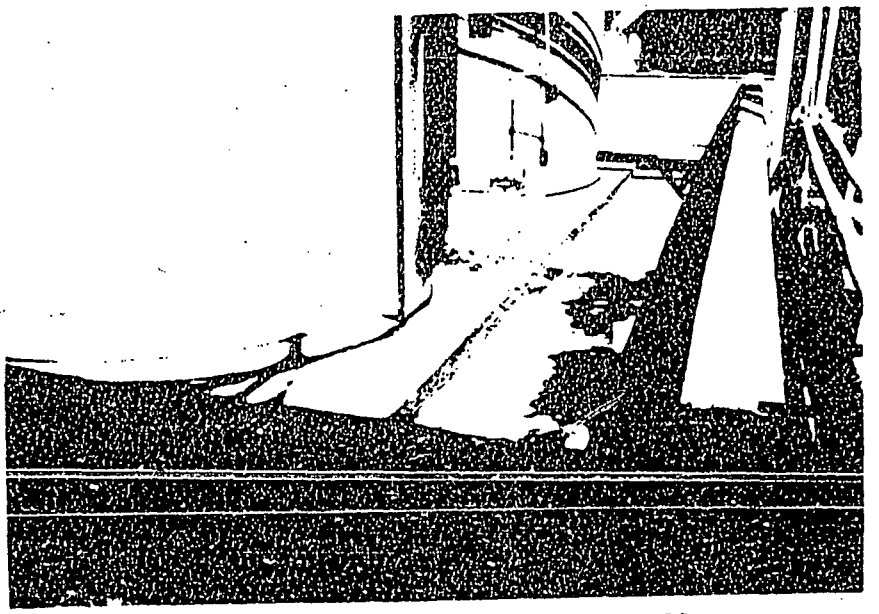


#23 (A.5-3) Cedar Chemical Corporation, 12/17/87, 1:23 p.m.
SWMU #20 - Sump in Main Tank Farm Diked Area #1 (South)



#24 (A.1-5) Cedar Chemical Corporation, 12/16/87, 2:44 p.m.
SWMU #21 - Sump in Main Tank Farm Diked Area #2

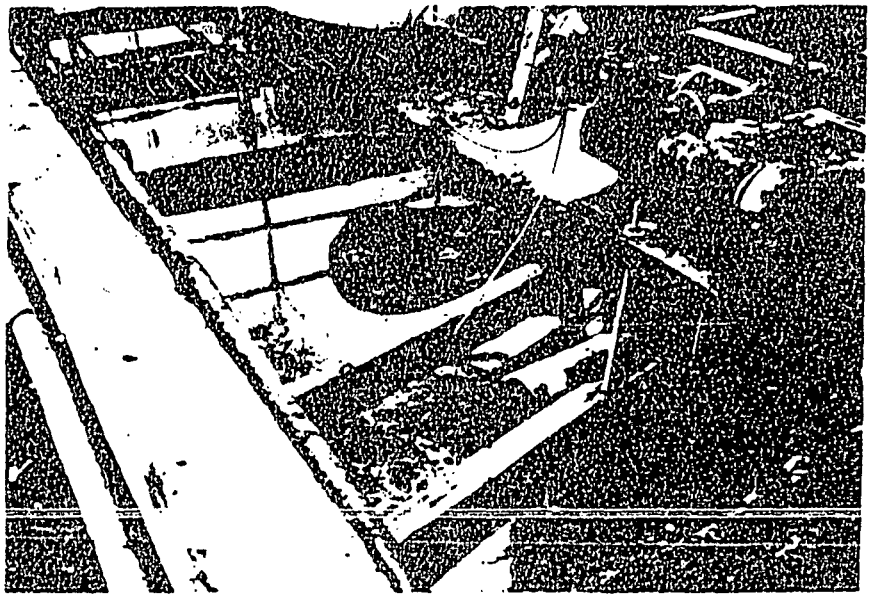
Note: Standing water in the sump.



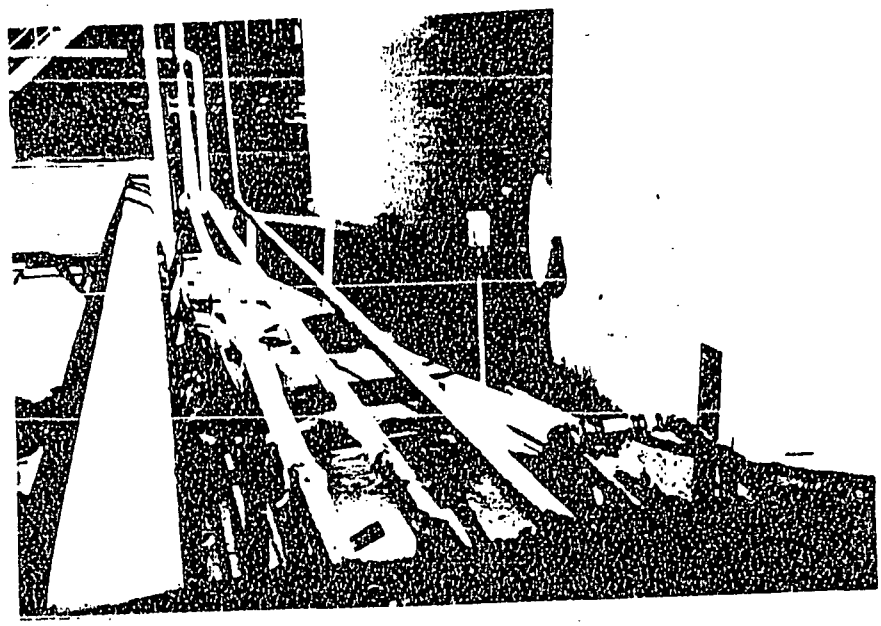
#25 (A.5-2) Cedar Chemical Corporation, 12/16/87, 1:23 p.m.
SWMU #21 - Sump in Main Tank Farm Diked Area #2

#26 (A.1-11) Cedar Chemical Corporation, 12/16/87, 2:54 p.m.
SWMU #22 - Sump in Main Tank Farm Diked Area #3

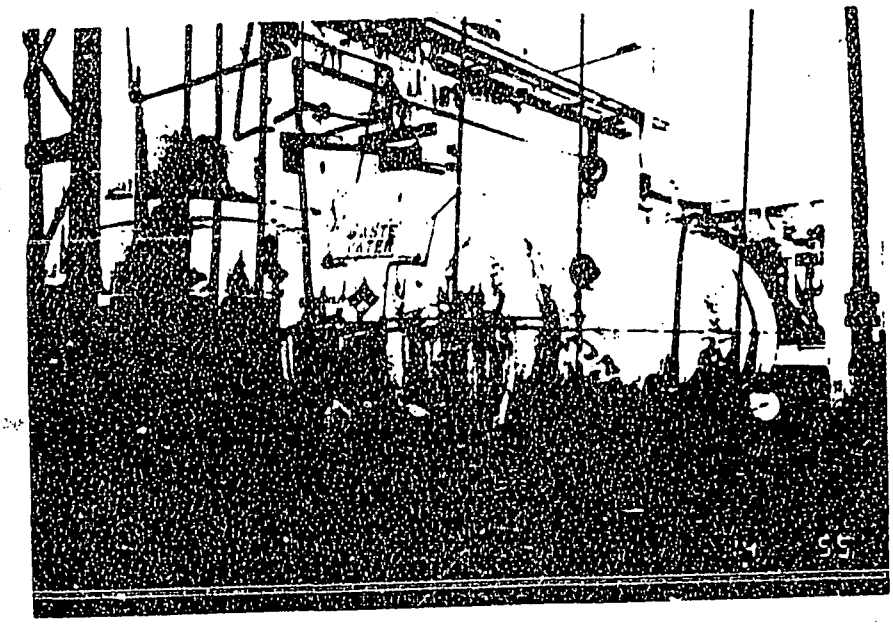
Note debris and standing water.



#27 (A.1-10) Cedar Chemical Corporation, 12/16/87, 2:52 p.m.
Standing water in Main Tank Farm Diked Area #3



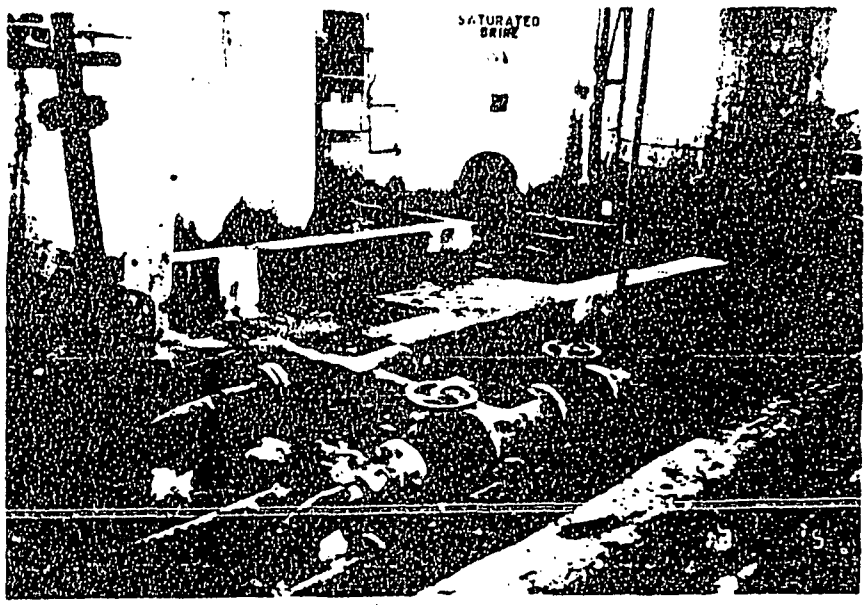
#28 (A.5-1) Cedar Chemical Corporation, 12/17/87, 1:22 p.m.
Main Tank Farm Diked Area #3



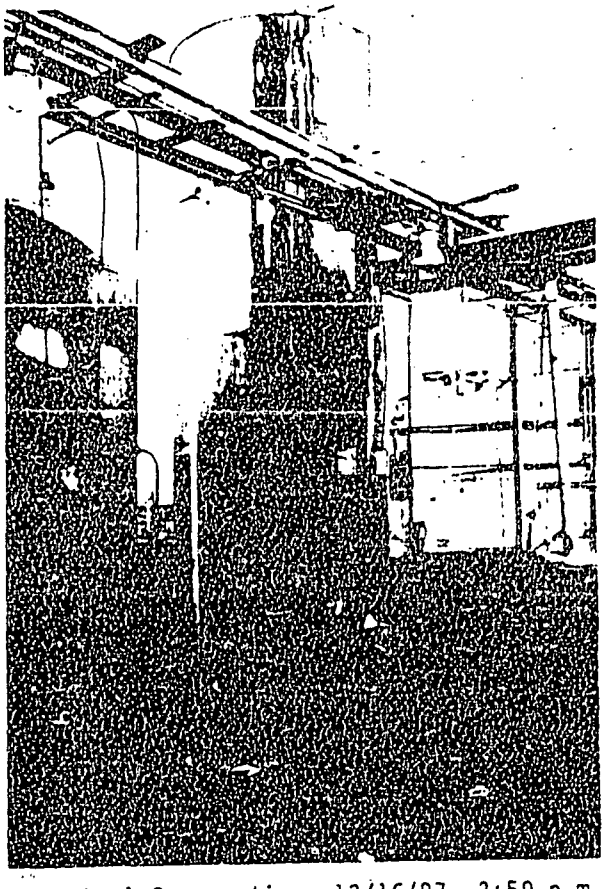
#29 (A.1-12) Cedar Chemical Corporation, 12/16/87, 2:55 p.m.
SWMU #23 - Waste Storage Tank PE 209 in Main Tank Farm Diked Area #4

Note staining of the tank.

#30 (A.1-13) Cedar Chemical Corporation, 12/16/87, 2:56 p.m.
Standing water in secondary containment area for SWMU #23 - Waste Storage Tank PE 209 in Main Tank Farm Diked Area #4

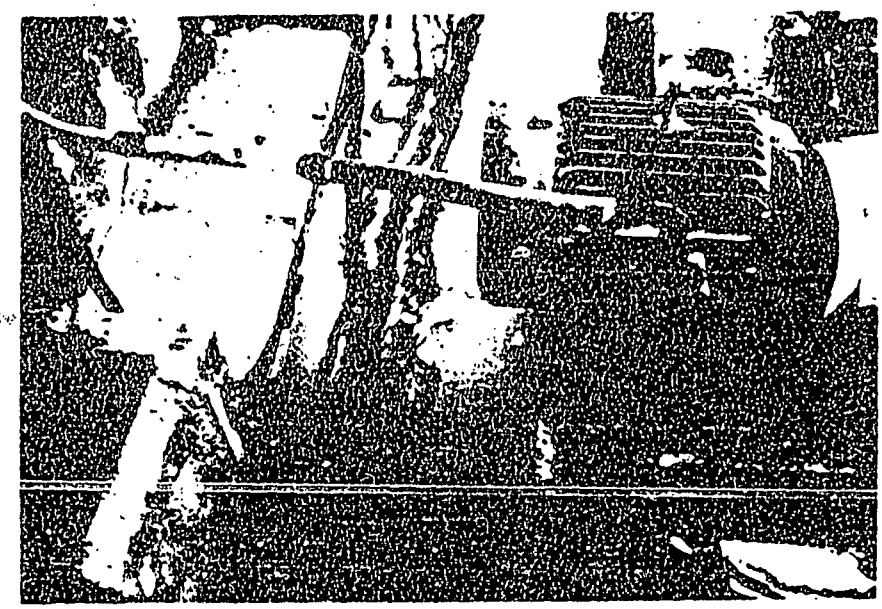


#31 (A.4-37) Cedar Chemical Corporation, 12/17/87, 1:15 p.m.
Secondary containment area for SWMU #23 - Waste Storage Tank PE 209 in Main Tank Farm Diked Area #4

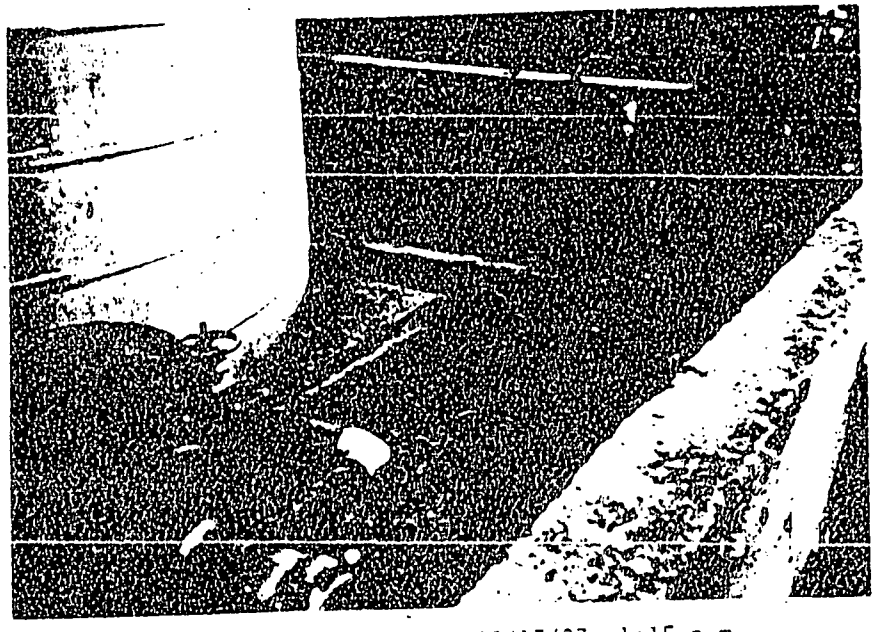


#32 (A.1-14) Cedar Chemical Corporation, 12/16/87, 2:59 p.m.
SWMU #24 - Waste Storage Tank 002 in Main Tank Farm Diked Area #5

#33 (A.1-15) Cedar Chemical Corporation, 12/16/87, 3:00 p.m.
Water covered sump in secondary containment area for SWMU #24 - Waste Storage Tank 002 in Main Tank Farm Diked Area #3

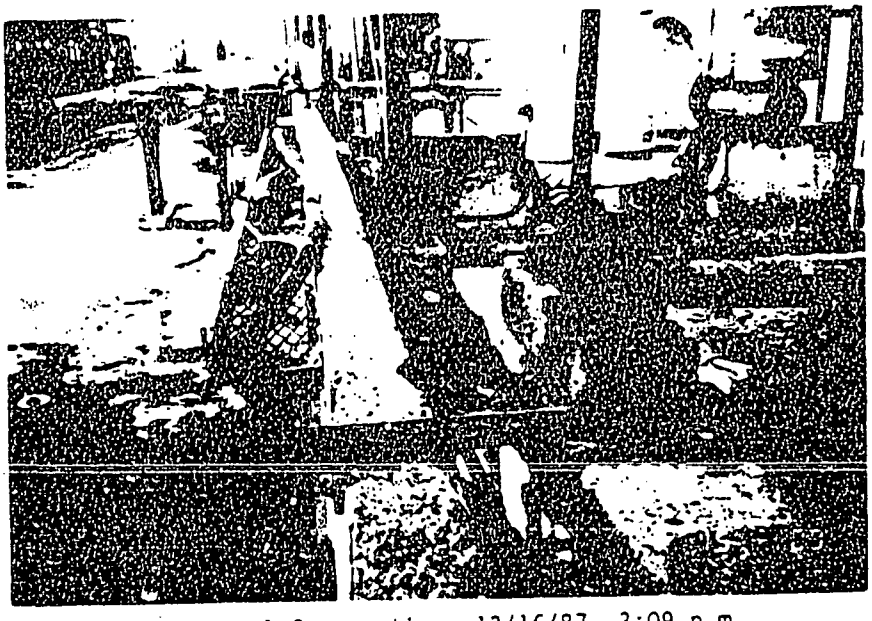


#34 (A.1-17) Cedar Chemical Corporation, 12/16/87, 3:05 p.m.
SWMU #25 - Sump in Main Tank Farm Diked Area #6



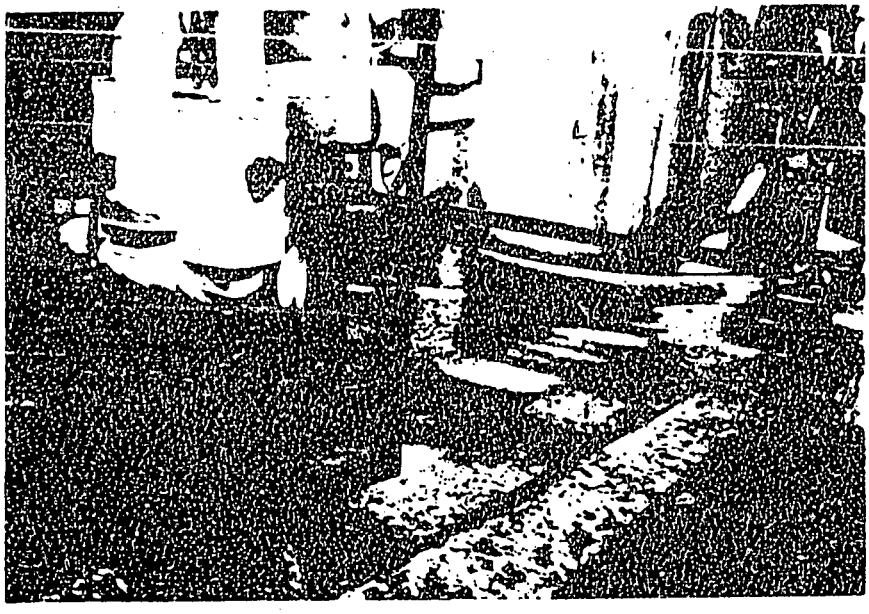
#35 (A.4-35) Cedar Chemical Corporation, 12/17/87, 1:15 p.m.
Secondary containment for SWMU #25 - Main Tank Farm Diked Area #6

Note several inches of standing water in the unit.

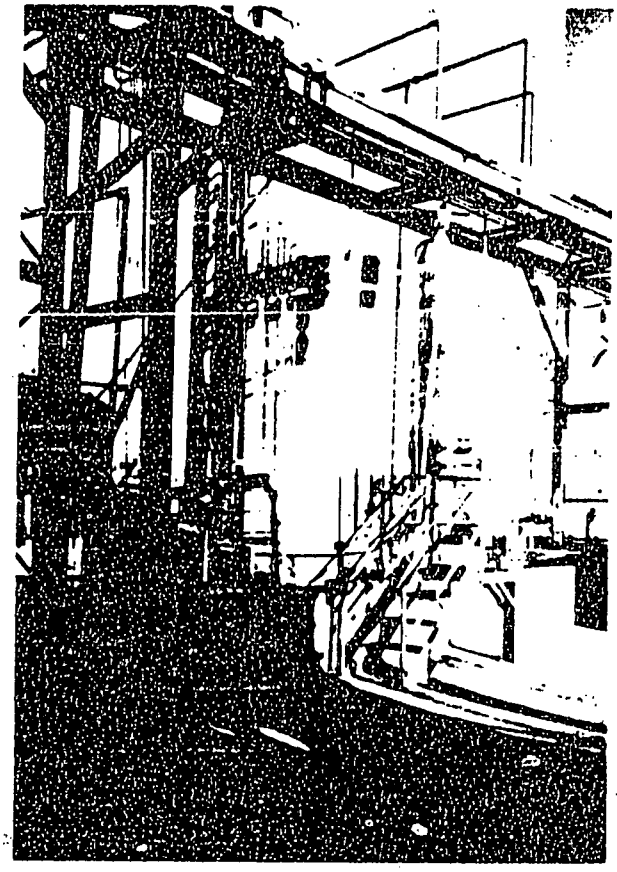


#36 (A.1-19) Cedar Chemical Corporation, 12/16/87, 3:09 p.m.
SWMU #26 - Sump in Main Tank Farm Diked Area #7

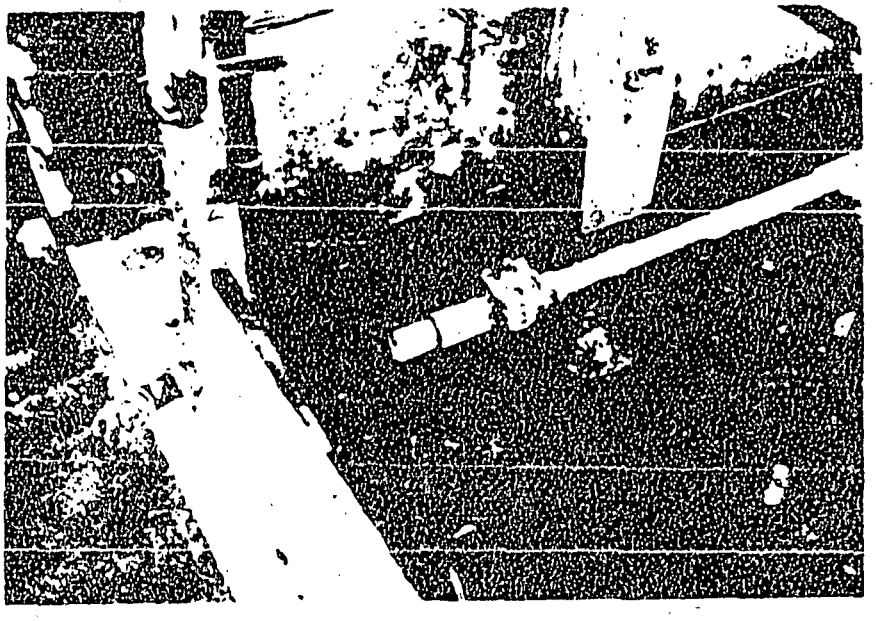
Note: Severe deterioration of concrete.



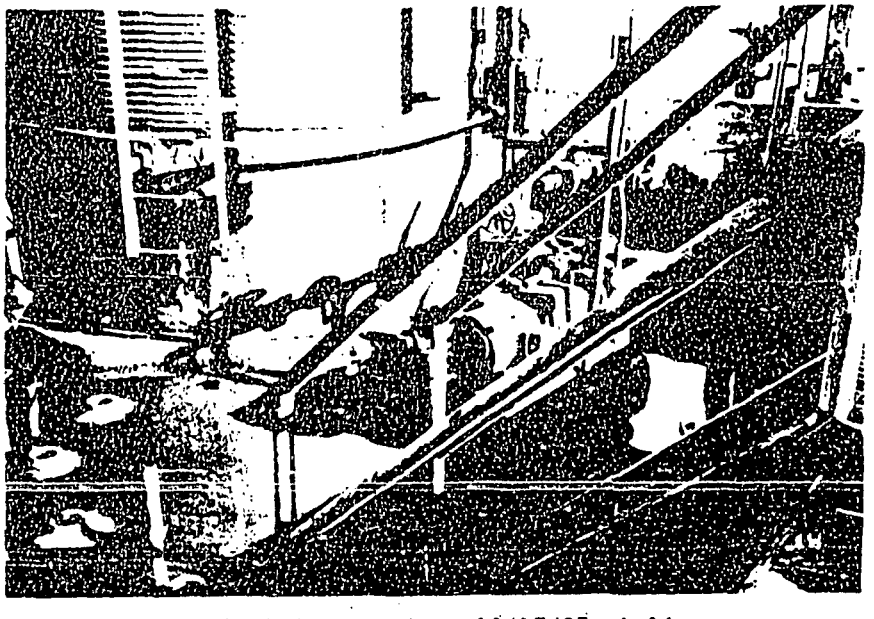
#37 (A.4-34) Cedar Chemical Corporation, 12/17/87, 1:14 p.m.
Secondary containment area for SWMU #26 - Sump in Main Tank Farm Diked Area #7



#38 (A.1-20) Cedar Chemical Corporation, 12/16/87, 3:10 p.m.
SWMU #28 - Waste Storage Tank B-112 in Main Tank Farm Diked Area #8

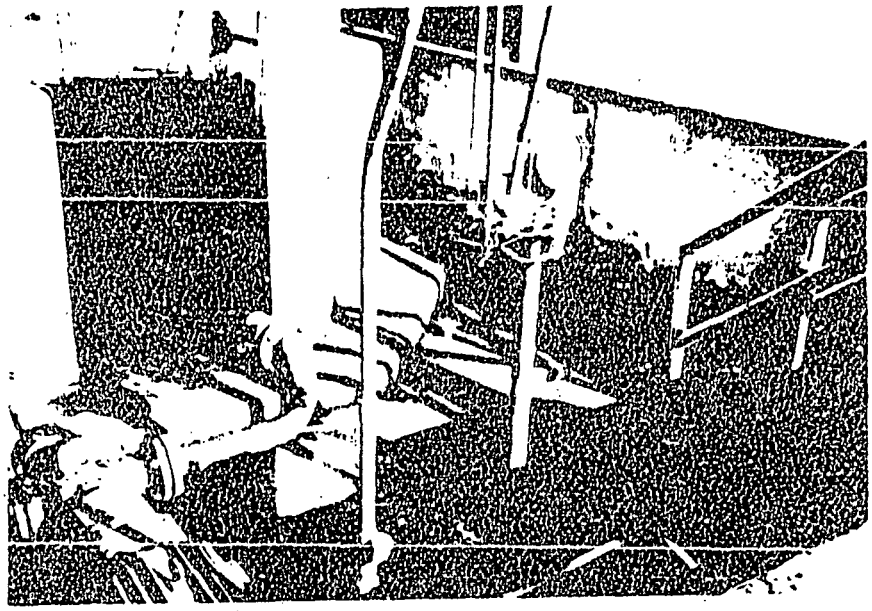


#39 (A.1-21) Cedar Chemical Corporation, 12/16/87, 3:10 p.m.
Sump in secondary containment area for SWMU #28 - Waste Storage Tank B-112 in Main Tank Farm Diked Area #8



#40 (A.4-33) Cedar Chemical Corporation, 12/17/87, 1:14 p.m.
Secondary containment for SWMU #28 - Waste Storage Tank B-112 in Main Tank Farm Diked Area #8

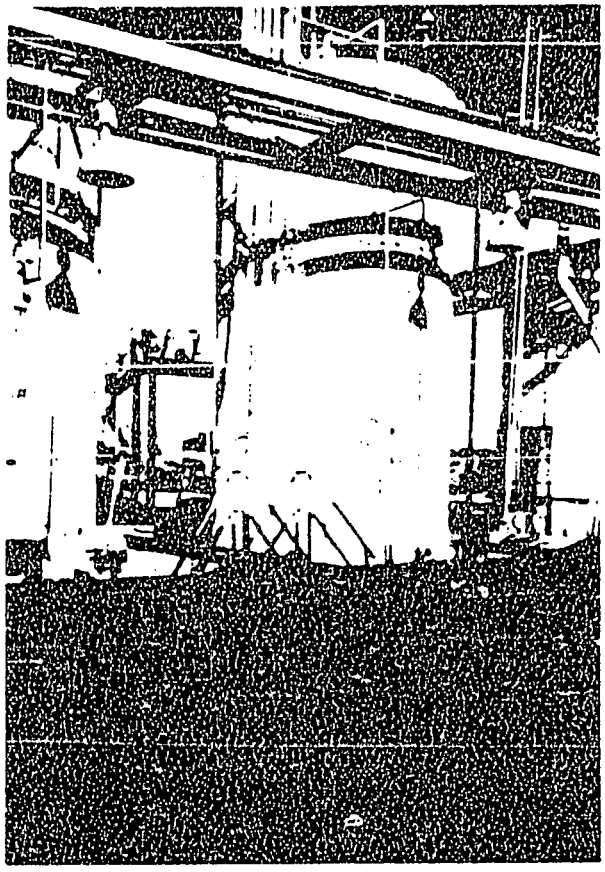
Note: Discolored standing water.



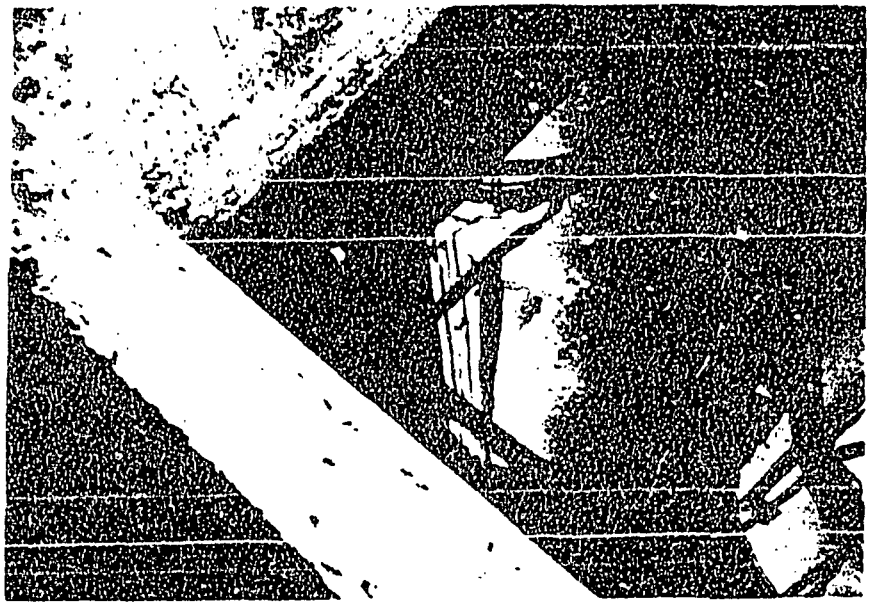
#41 (A.4-32) Cedar Chemical Corporation, 12/17/87, 1:13 p.m.
Secondary containment for SWMU #29 - Sump in Main Tank Farm Diked Area #9

Note standing water in the unit.

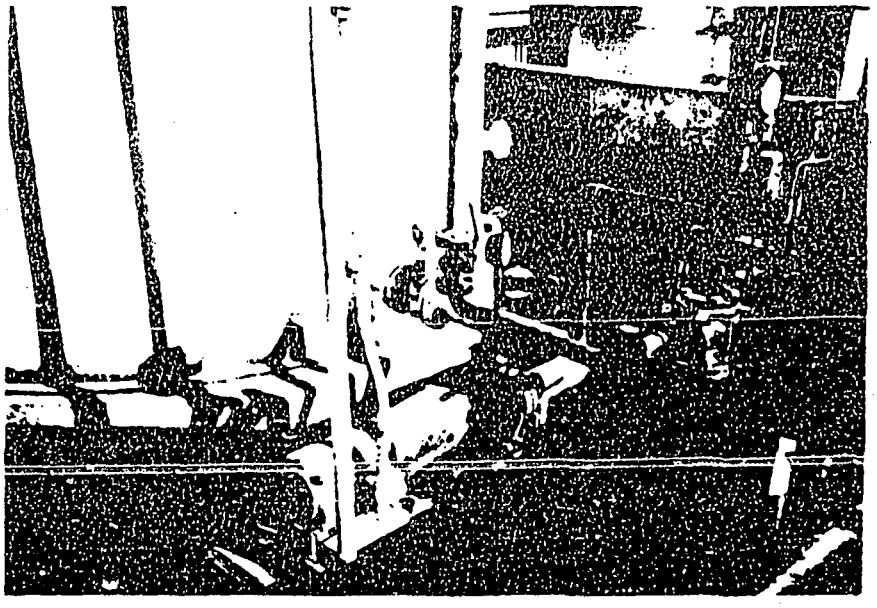
#42 (A.1-22) Cedar Chemical Corporation, 12/16/87, 3:12 p.m.
SWMU #29 - Sump in Main Tank Farm Diked Area #9



#43 (A.1-23) Cedar Chemical Corporation, 12/16/87, 1:14 p.m.
SWMU #30 - Waste Water Storage Tank B-102 in Main Tank Farm
Diked Area #10

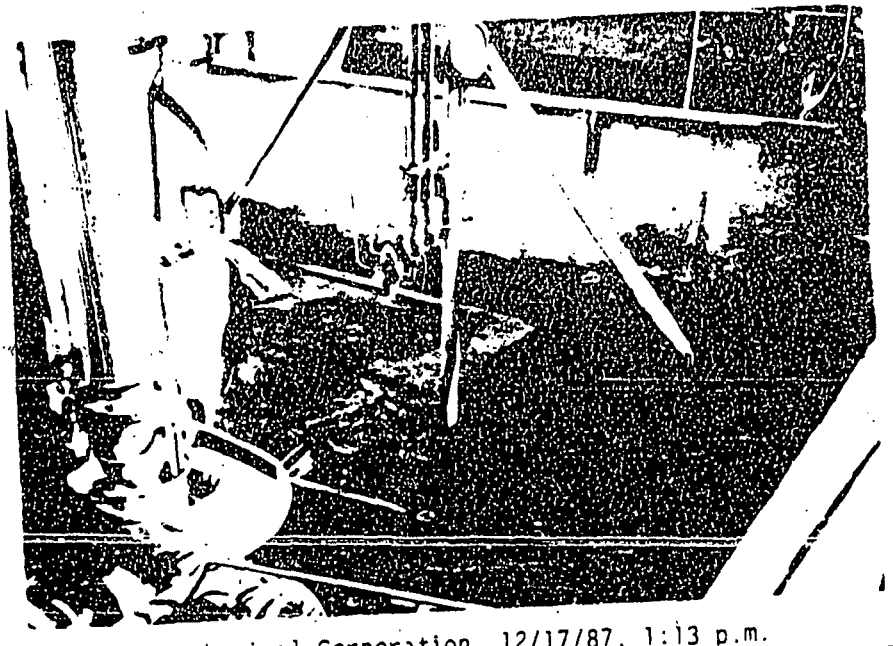


#44 (A.1-24) Cedar Chemical Corporation, 12/16/87, 3:16 p.m.
Sump located in secondary containment area for SWMU #30 - Waste Water Storage Tank B-102 in Main Tank Farm Diked Area #10



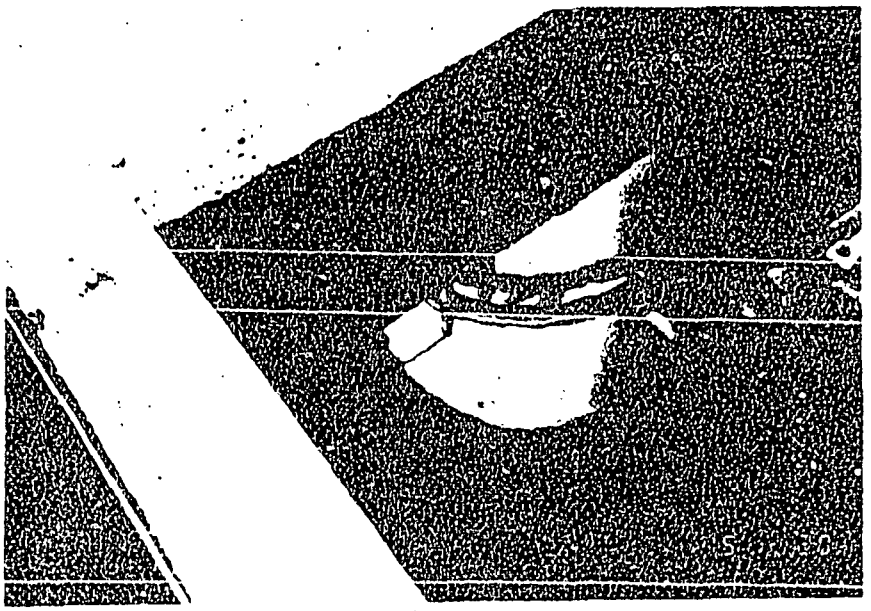
#45 (A.4-31) Cedar Chemical Corporation, 12/17/87, 1:13 p.m.
Secondary containment for SWMU #30 - Waste Water Storage Tank B-102 in Main Tank Farm Diked Area #10

#46 (A.1-25) Cedar Chemical Corporation, 12/16/87, 3:19 p.m.
SWMU #31 - Sump in Main Tank Farm Diked Area #11

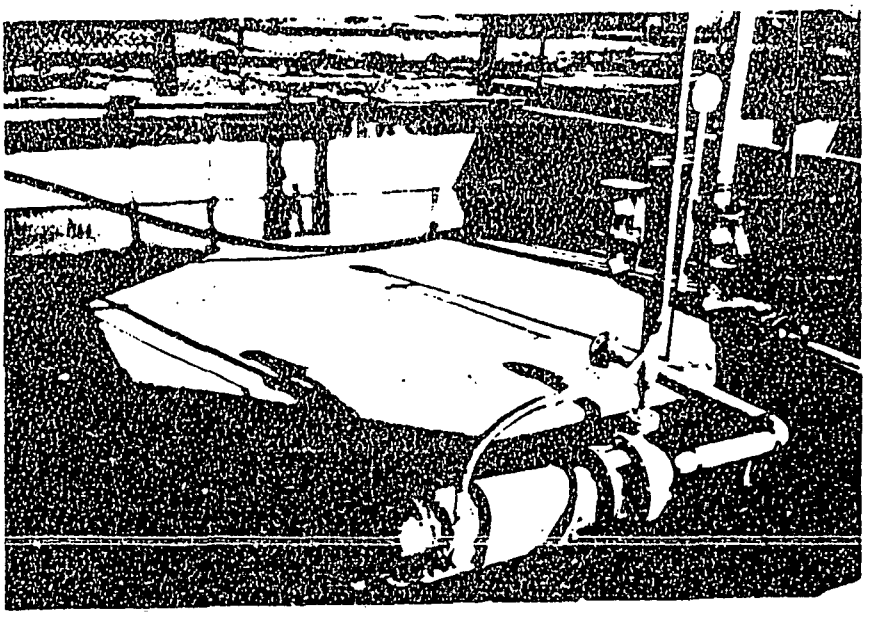


#47 (A.4-30) Cedar Chemical Corporation, 12/17/87, 1:13 p.m.
Secondary containment area for SWMU #31 - Sump in Main Tank Farm Diked Area #1

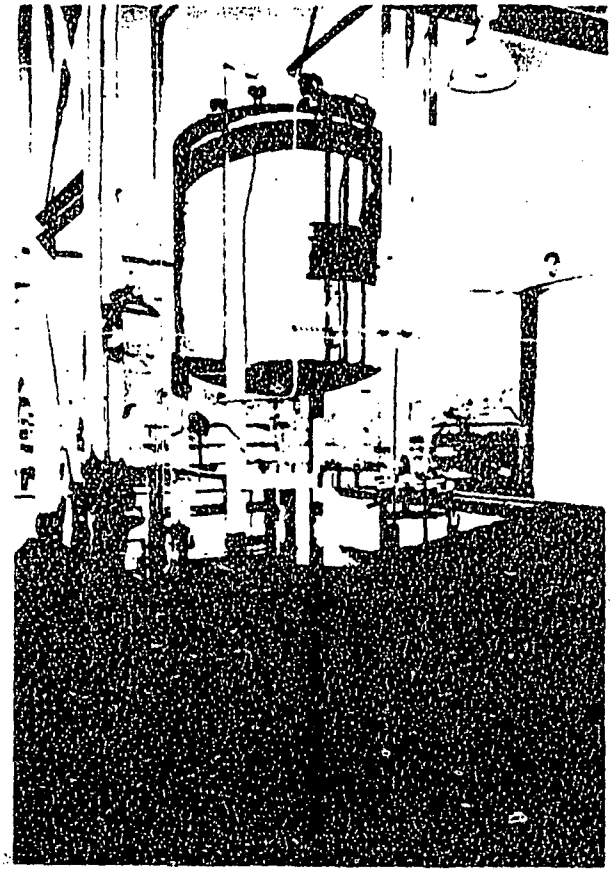
Note standing water in unit.



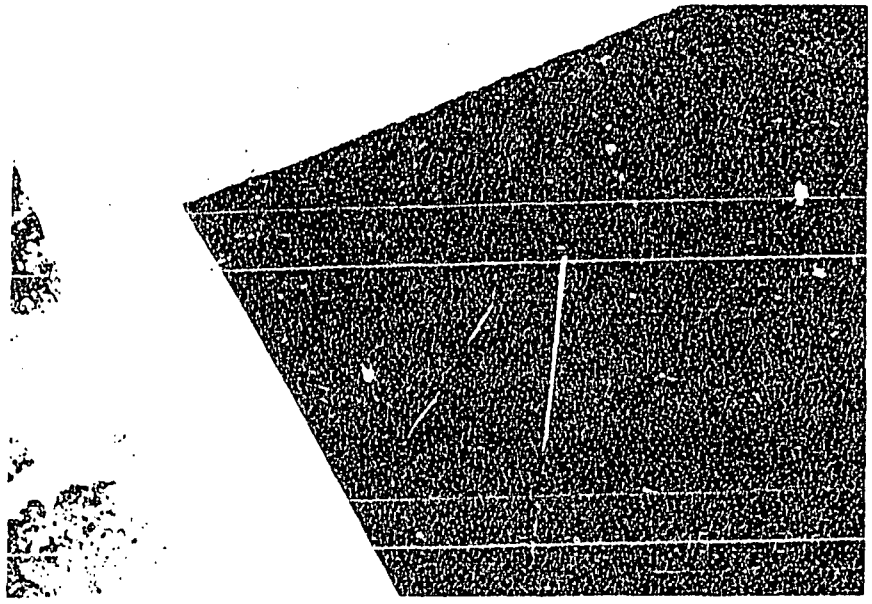
#48 (A.1-26) Cedar Chemical Corporation, 12/16/87, 3:20 p.m.
SWMU #32 - Sump in Main Tank Farm Diked Area #12



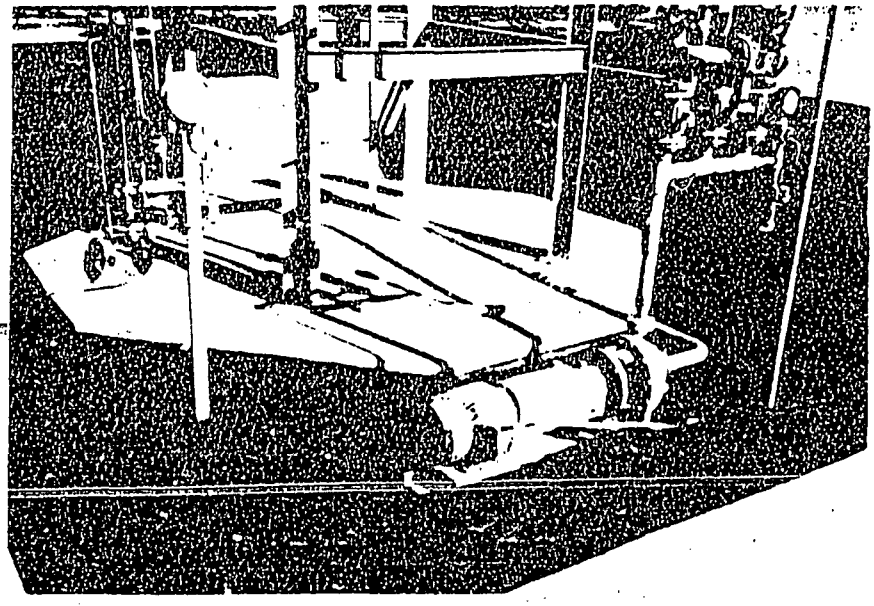
#49 (A.4-29) Cedar Chemical Corporation, 12/17/87, 1:12 p.m.
secondary containment for SWMU #32 - Sump in Main Tank Farm Diked Area #12



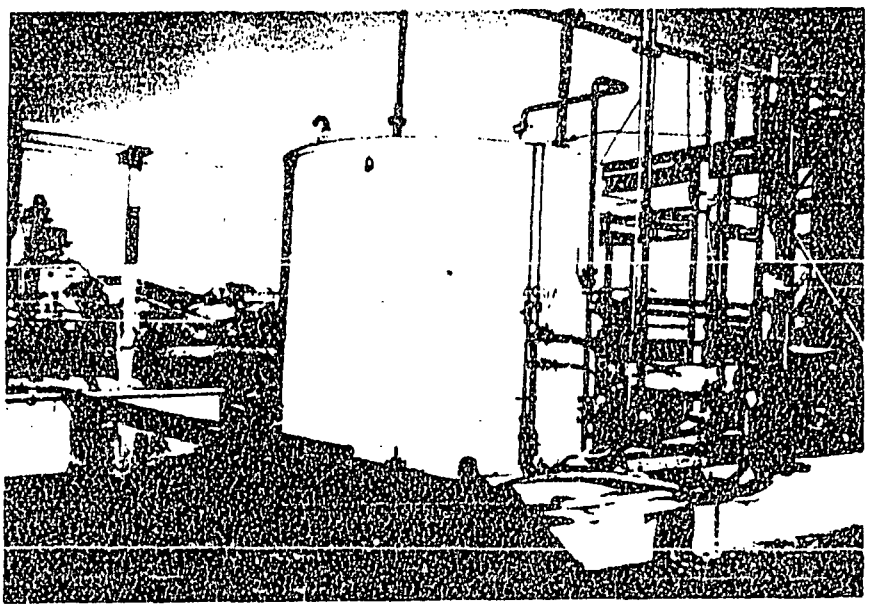
#50 (A.1-30) Cedar Chemical Corporation, 12/16/87, 3:23 p.m.
SWMU #33 - Tank N-204 in Main Tank Farm Diked Area #13



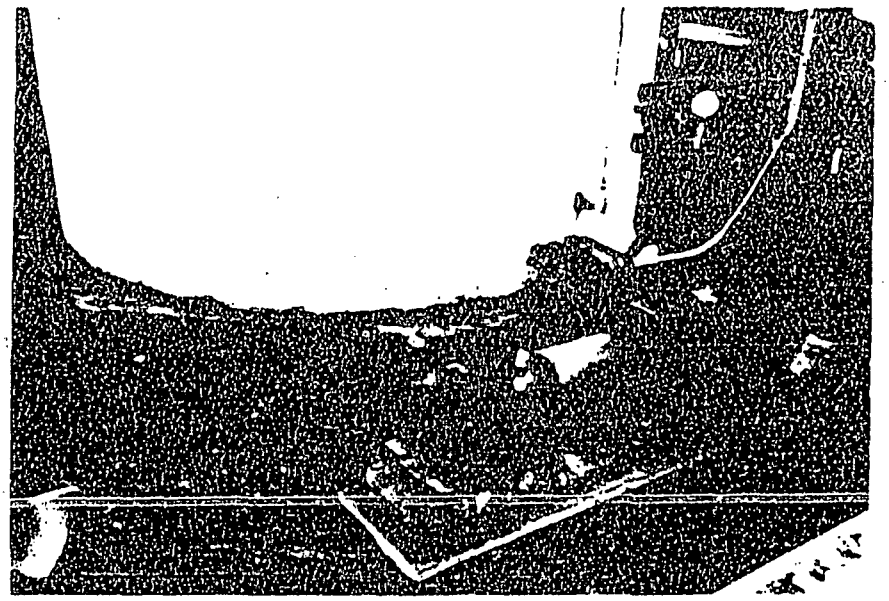
#51 (A.1-27) Cedar Chemical Corporation, 12/16/87, 3:21 p.m.
Sump located in secondary containment area for SWMU #33 - Tank N-204 in Main Tank Farm Diked Area #13



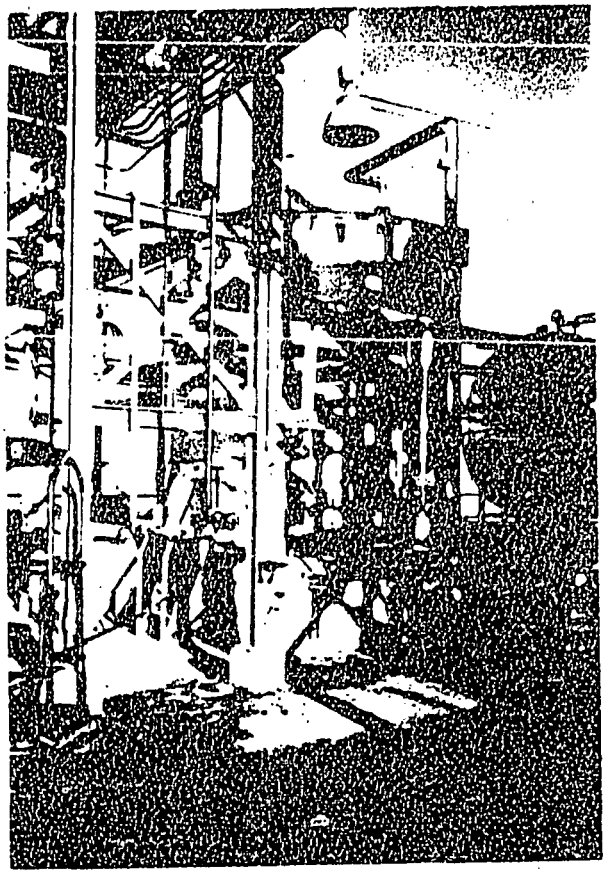
#52 (A.4-28) Cedar Chemical Corporation, 12/17/87, 1:12 p.m.
Secondary containment for SWMU #33 - Tank N-204 in Main Tank Farm Diked Area #13



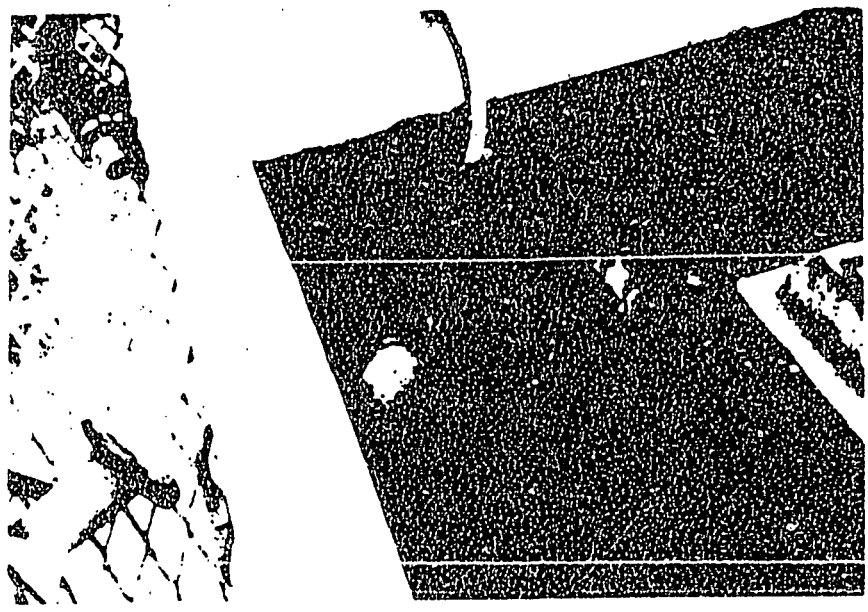
#53 (A.1-29) Cedar Chemical Corporation, 12/16/87, 3:22 p.m.
SWMU #34 - Tank N-201 in Main Tank Farm Diked Area #14



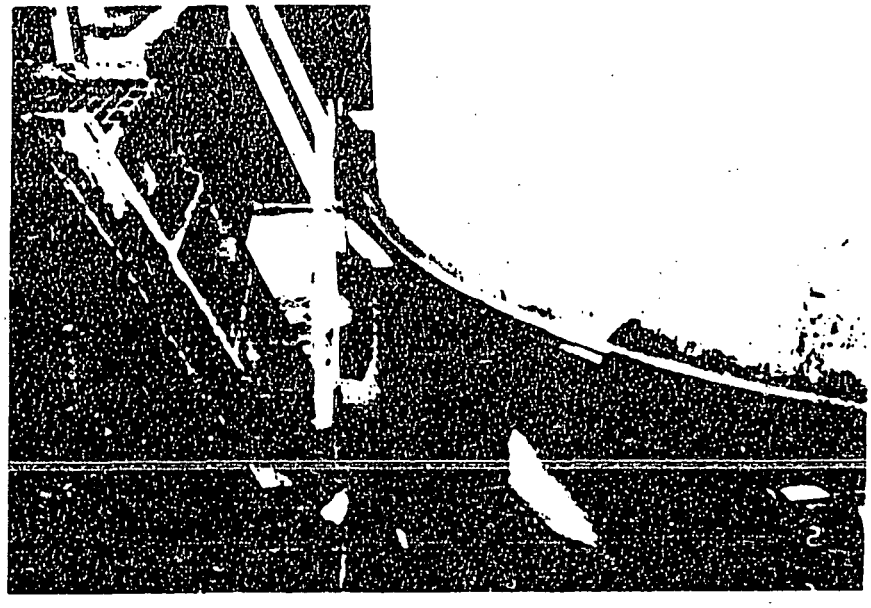
#54 (A.4-27) Cedar Chemical Corporation, 12/17/87, 1:12 p.m.
Secondary containment for SWMU #34 - Tank N-201 in Main Tank Farm Diked Area #14



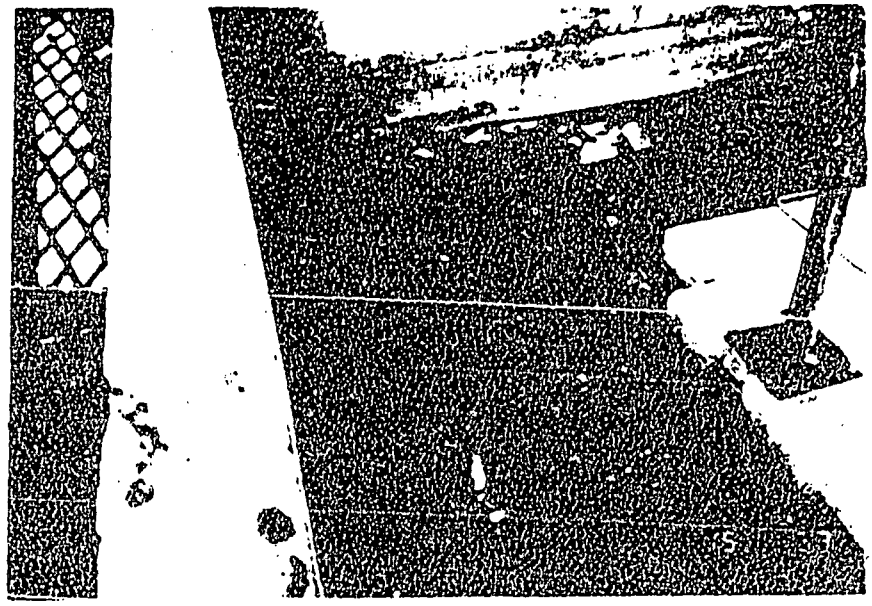
#55 (A.1-34) Cedar Chemical Corporation, 12/16/87, 3:29 p.m.
SWMU #35 - Tank N-205 in Main Tank Farm Diked Area #15



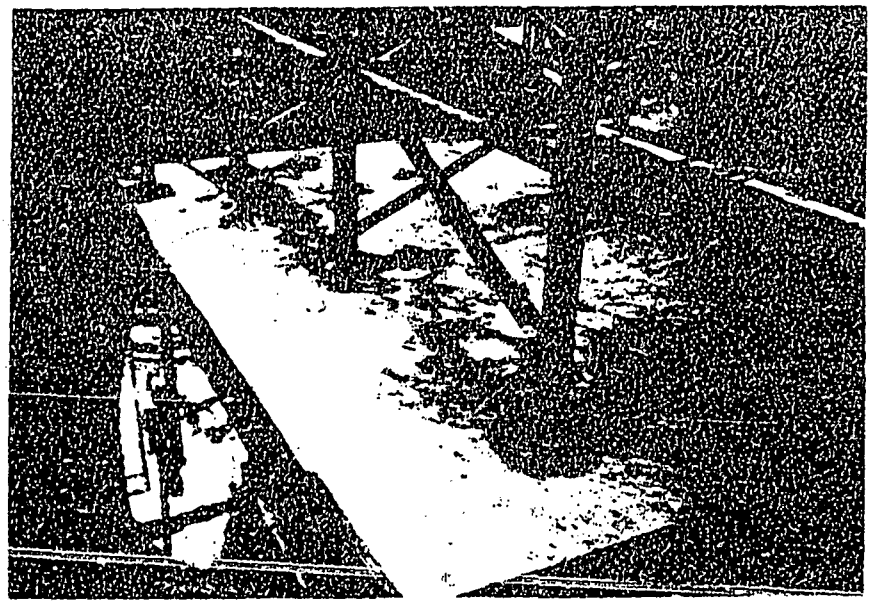
#56 (A.1-28) Cedar Chemical Corporation, 12/16/87, 3:21 p.m.
Sump in located in secondary containment area for SWMU #35 - Tank N-201 in Main Tank Farm Diked Area #15



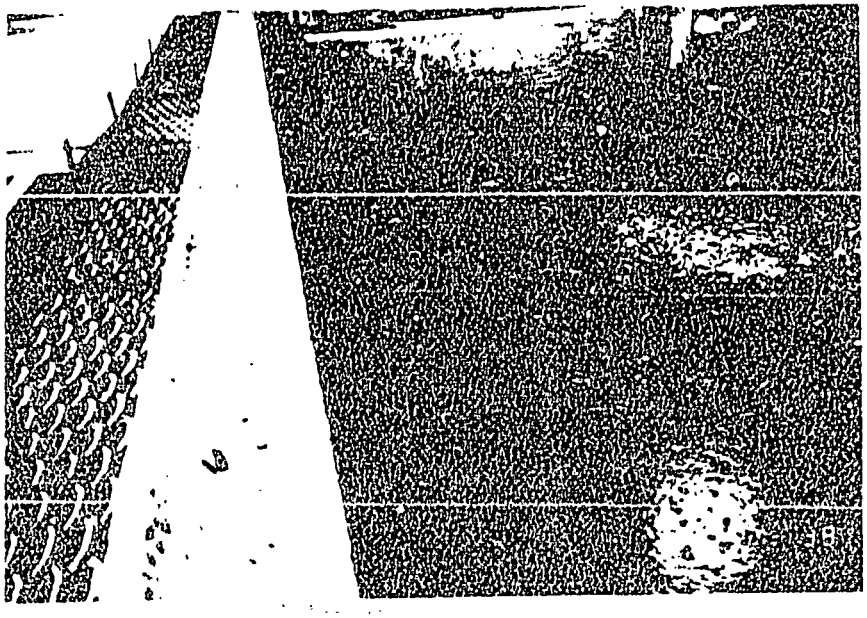
#57 (A.4-26) Cedar Chemical Corporation, 12/17/87, 1:12 p.m.
Secondary containment for SWMU #35 - Tank N-205 in Main Tank Farm Diked Area #15



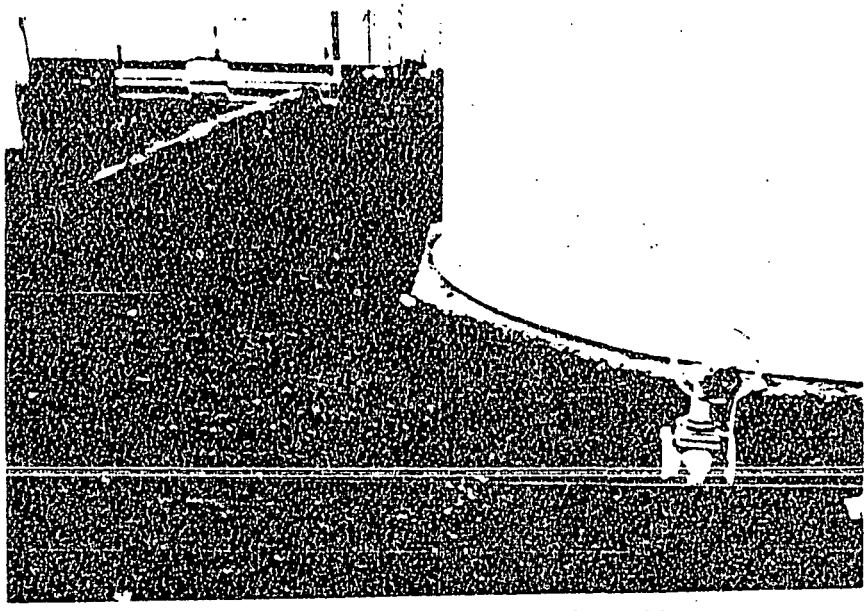
#58 (A.1-35) Cedar Chemical Corporation, 12/16/87, 3:33 p.m.
SWMU #37 - Sump in Main Tank Farm Diked Area #16



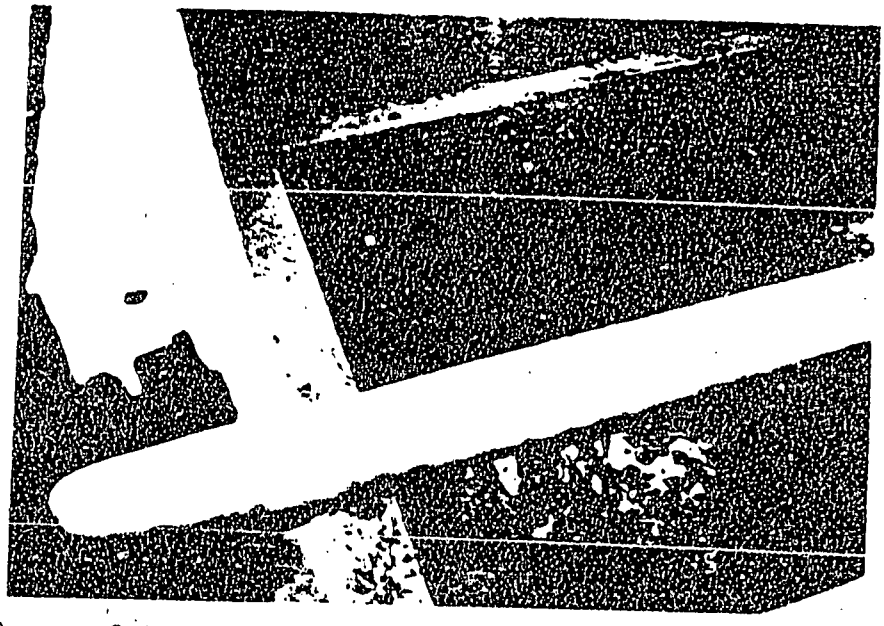
#59 (A.4-25) Cedar Chemical Corporation, 12/17/87, 1:11 p.m.
Secondary containment for SWMU #37 - Sump in Main Tank Farm
Diked Area #16



#60 (A.1-37) Cedar Chemical Corporation, 12/16/87, 3:38 p.m.
SWMU #38 - Sump in Main Tank Farm Diked Area #17



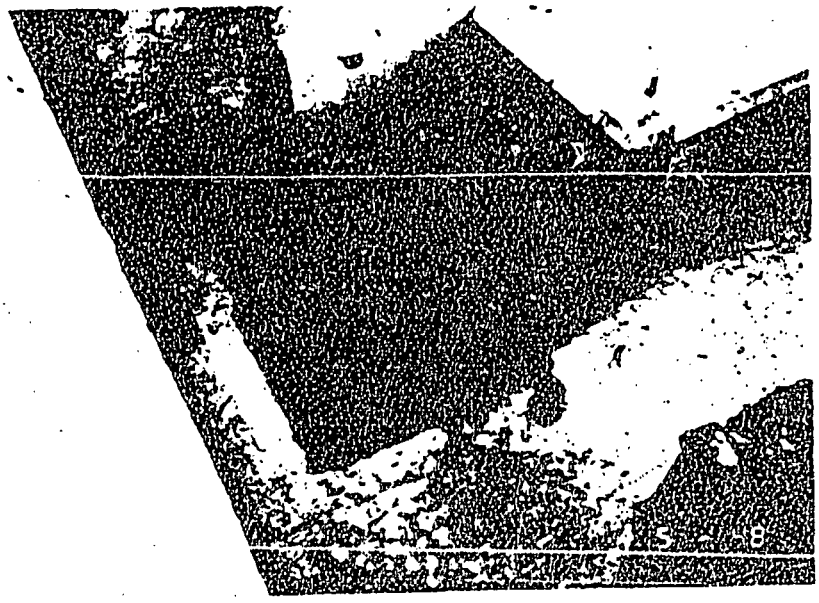
#61 (A.4-24) Cedar Chemical Corporation, 12/17/87, 1:10 p.m.
Secondary containment for SWMU #38 - Sump in Main Tank Farm
Diked Area #17



#62 (A.2-3) Cedar Chemical Corporation, 12/16/87, 3:47 p.m.
SWMU #40 - Sump in Main Tank Farm Diked Area #18

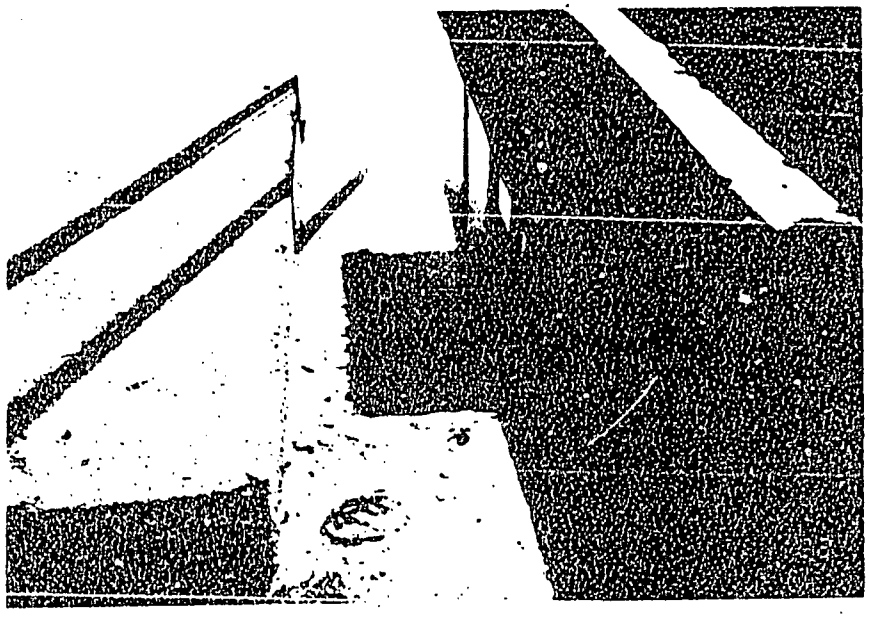
#63 (A.4-23) Cedar Chemical Corporation, 12/17/87, 1:10 p.m.
Secondary containment for SWMU #40 - Main Tank Farm Diked Area #18

Note extreme deterioration of concrete.

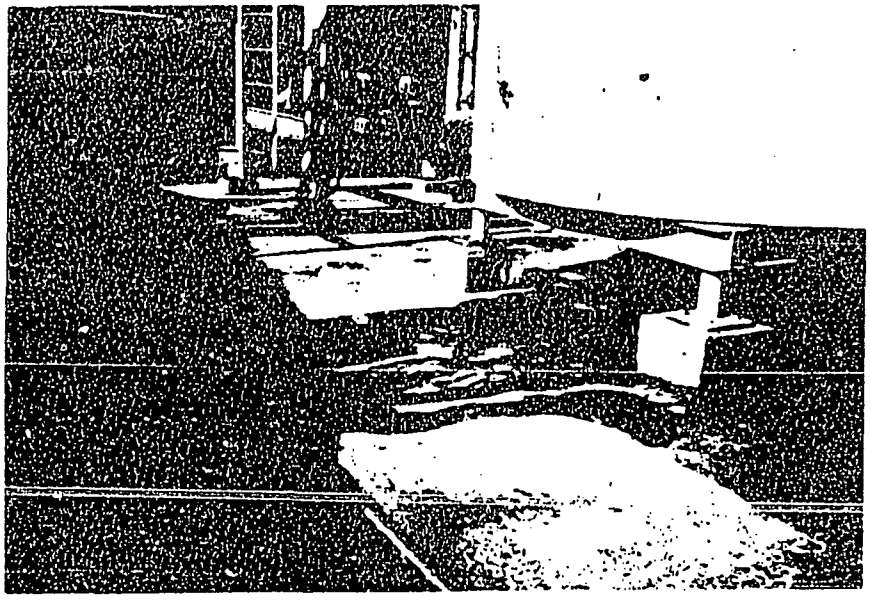


#64 (A.2-4) Cedar Chemical Corporation, 12/16/87, 3:48 p.m.
SWMU #41 - Sump in Main Tank Farm Diked Area #19

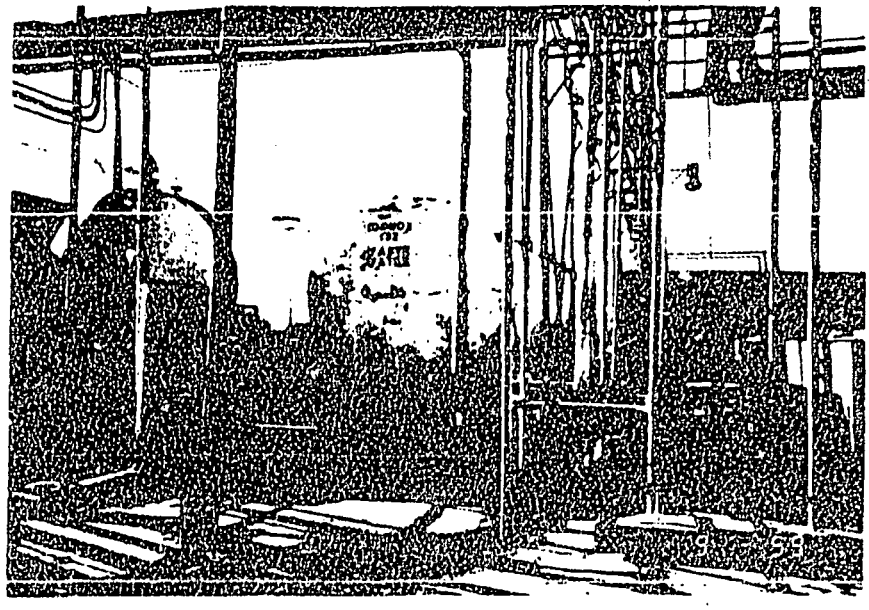
#65 (A.4-22) Cedar Chemical Corporation, 12/17/87, 1:09 p.m.
Secondary containment for SWMU #41 - Sump in Main Tank Farm
Diked Area #19



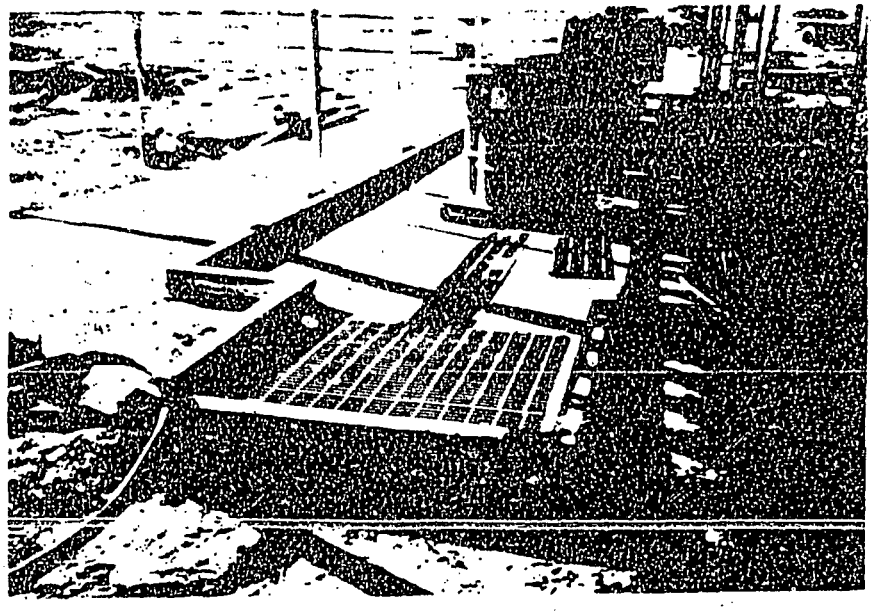
#66 (A.3-22) Cedar Chemical Corporation, 12/17/87, 10:02 a.m.
SWMU #42 - Sump in Second Tank Farm Diked Area #1



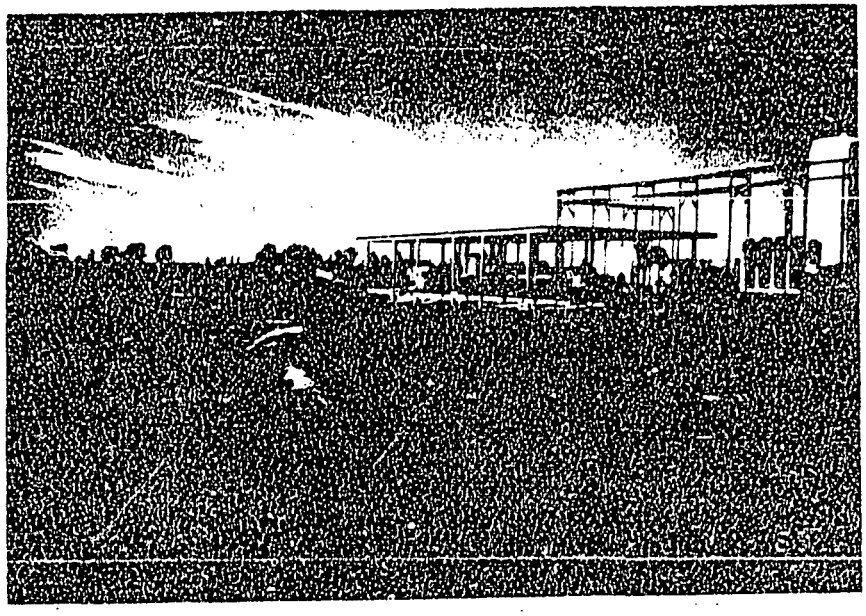
#67 (A.5-7) Cedar Chemical Corporation, 12/17/87, 1:25 p.m.
Secondary containment for SWMU #42 - Sump in Second Tank Farm Diked Area #1



#68 (A.3-21) Cedar Chemical Corporation, 12/17/87, 9:59 a.m.
SWMU #43 - Wastewater Tank 014 in Second Tank Farm Diked Area #3

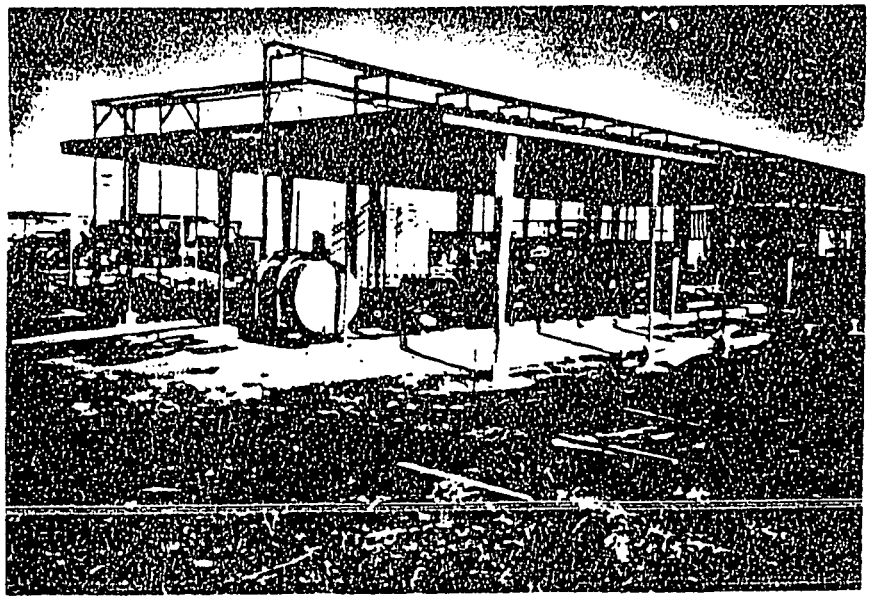


#69 (A.3-28) Cedar Chemical Corporation, 12/17/87, 10:17 a.m.
SWMU #44 - Hazardous Waste Storage Area



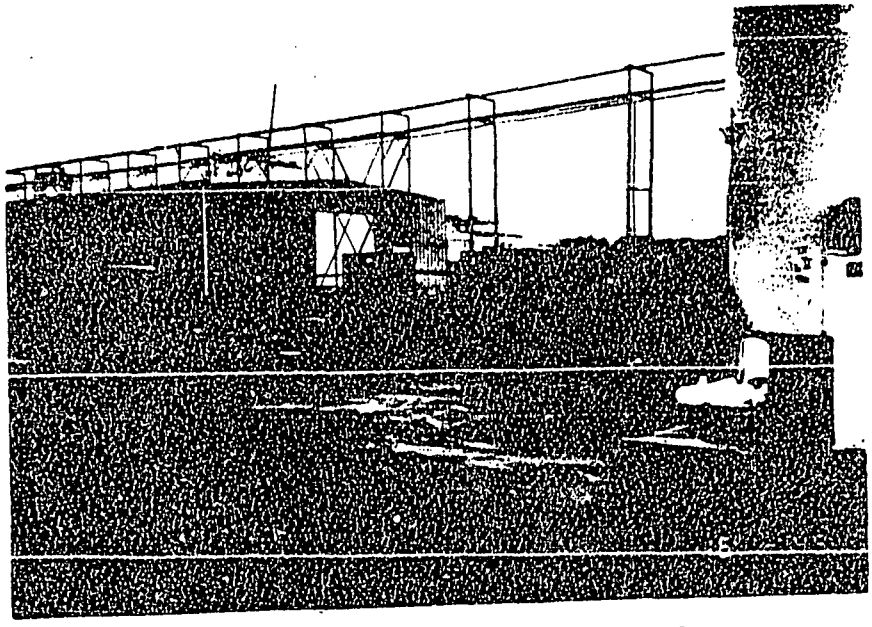
#70 (A.3-32) Cedar Chemical Corporation, 12/17/87, 10:23 a.m.
SWMU #44 - Hazardous Waste Storage Area

Note proximity of storage area to surface drainage.

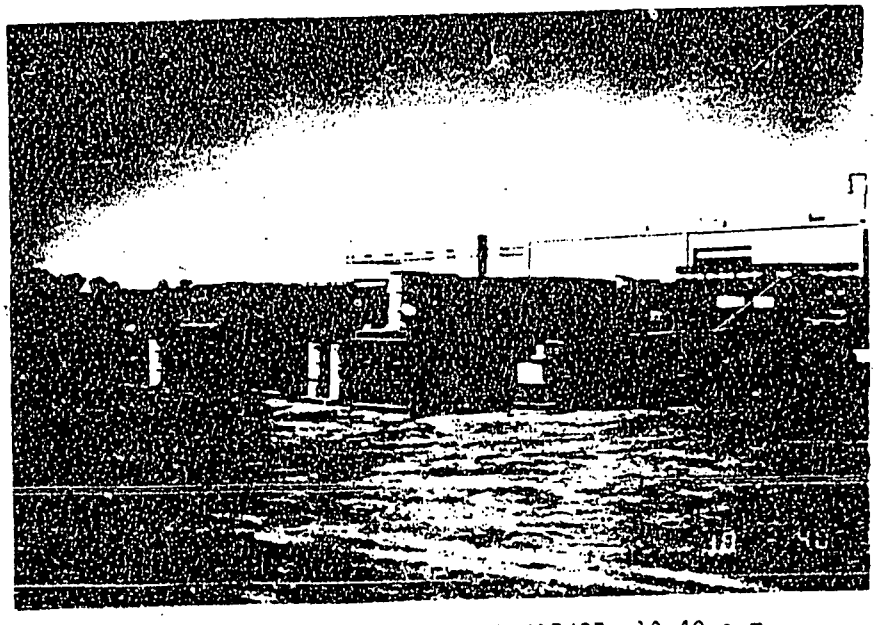


#71 (A.3-26) Cedar Chemical Corporation, 12/17/87, 10:10 a.m.
SWMU #44 - Hazardous Waste Storage Area

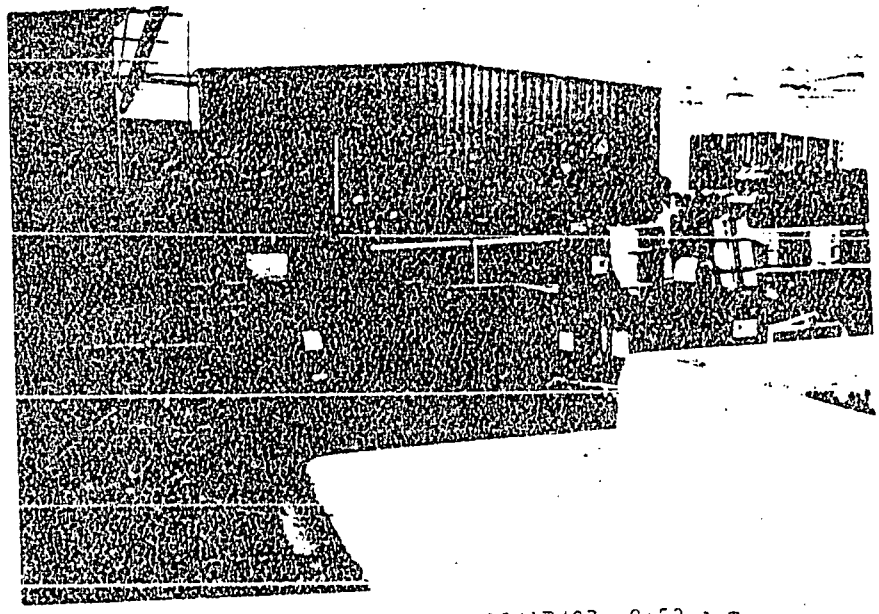
Note the open ended construction of the curbed area.



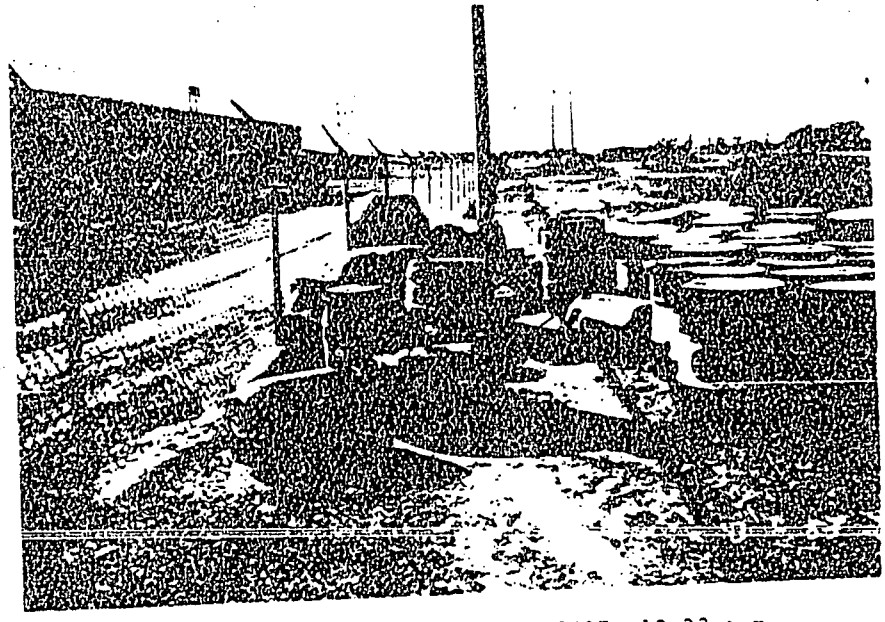
#72 (A.2-22) Cedar Chemical Corporation, 12/17/87, 4:49 p.m.
SWMU #45 - Nonhazardous Waste Storage Area



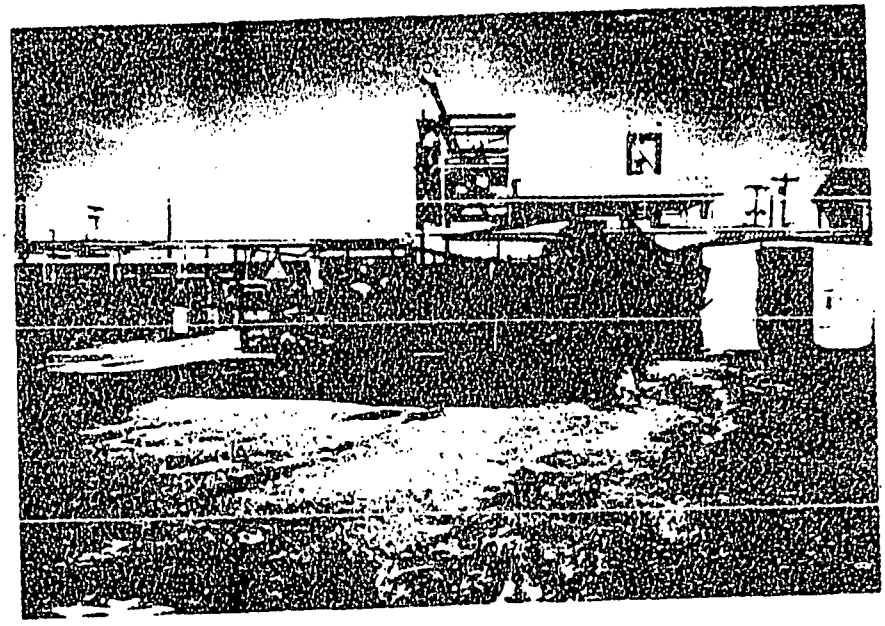
#73 (A.3-37) Cedar Chemical Corporation, 12/17/87, 10:40 a.m.
SWMU #46 - Drum Storage Area



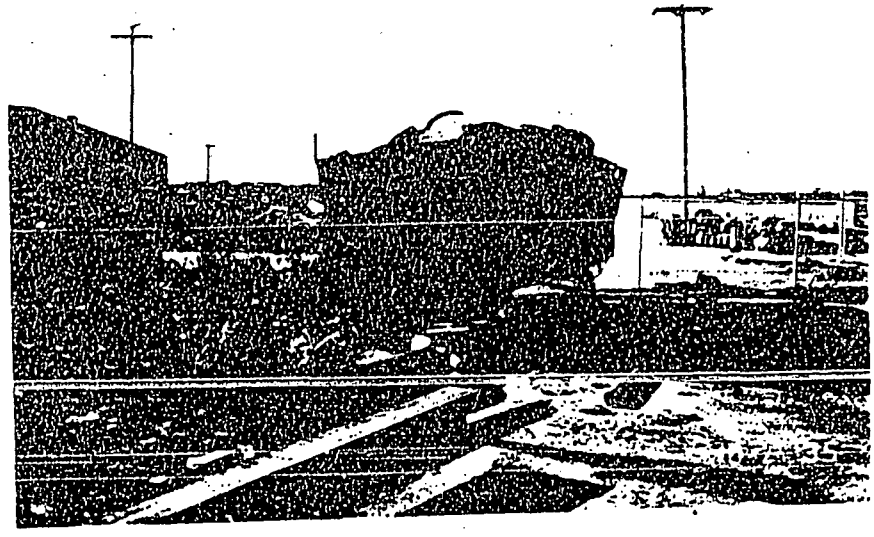
#74 (A.3-19) Cedar Chemical Corporation, 12/17/87, 9:53 a.m.
SWMU #47 - Drum Crushing Area



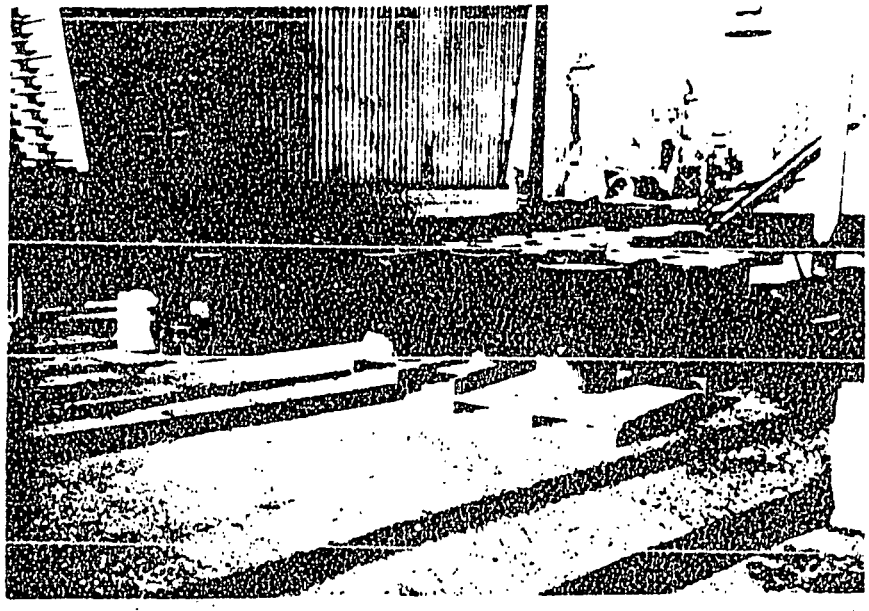
#75 (A.3-35) Cedar Chemical Corporation, 12/17/87, 10:33 a.m.
SWMU #48 - Waste Drum Staging Area



#76 (A.3-34) Cedar Chemical Corporation, 12/17/87, 10:29 a.m.
SWMU #49 - Scrap Drum Storage Wagons

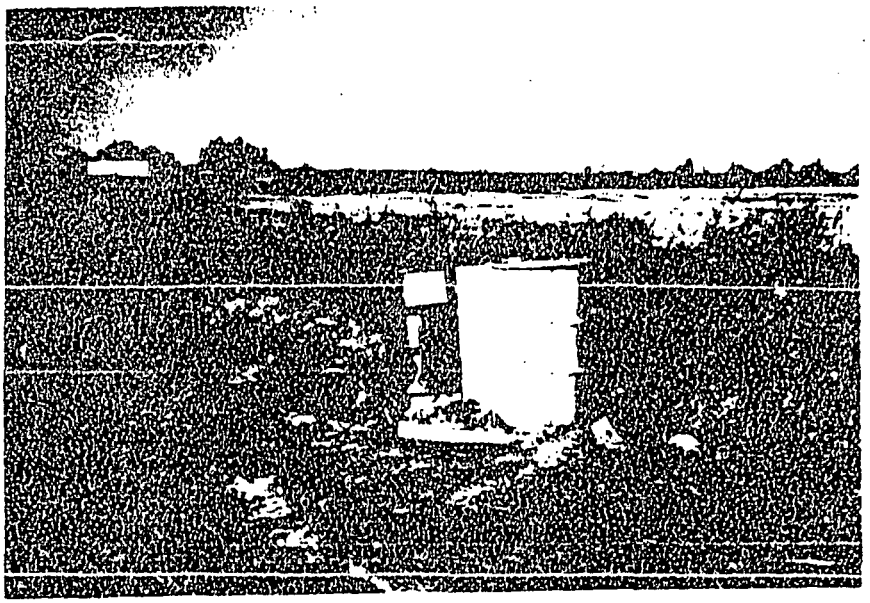


#77 (A.3-36) Cedar Chemical Corporation, 12/17/87, 10:35 a.m.
SWMU #49 - Scrap Drum Storage Wagons

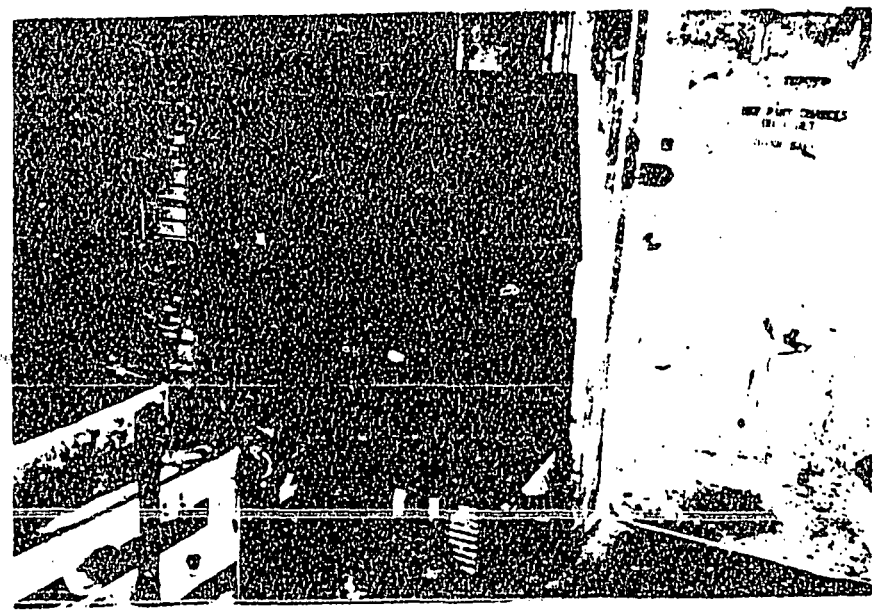


#78 (A.1-36) Cedar Chemical Corporation, 12/16/87, 3:33 p.m.
SWMU #50 - Waste Drums Staging Area in Main Tank Farm Area

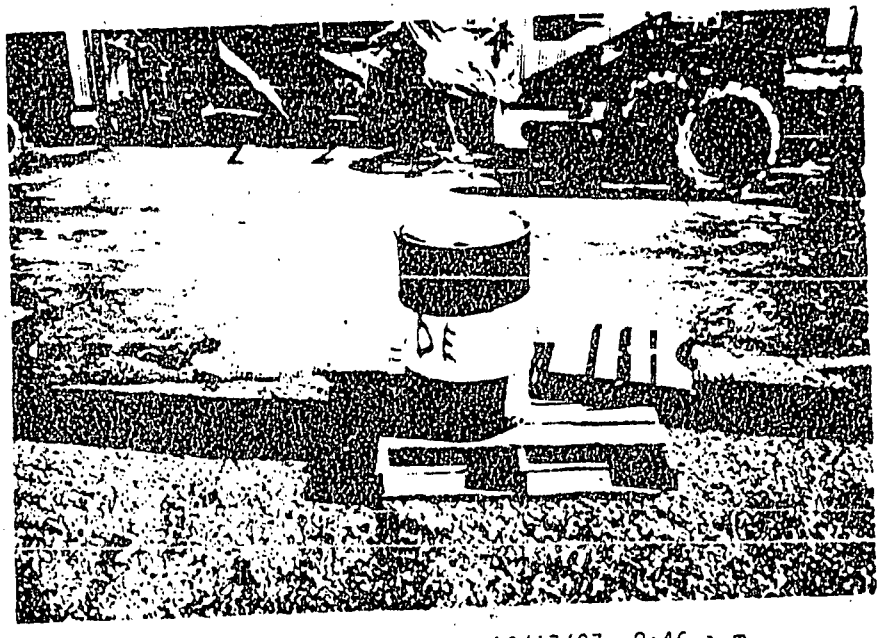
#79 (A.2-27) Cedar Chemical Corporation, 12/16/87, 4:58 p.m.
SWMU #51 - Waste Oil Drum



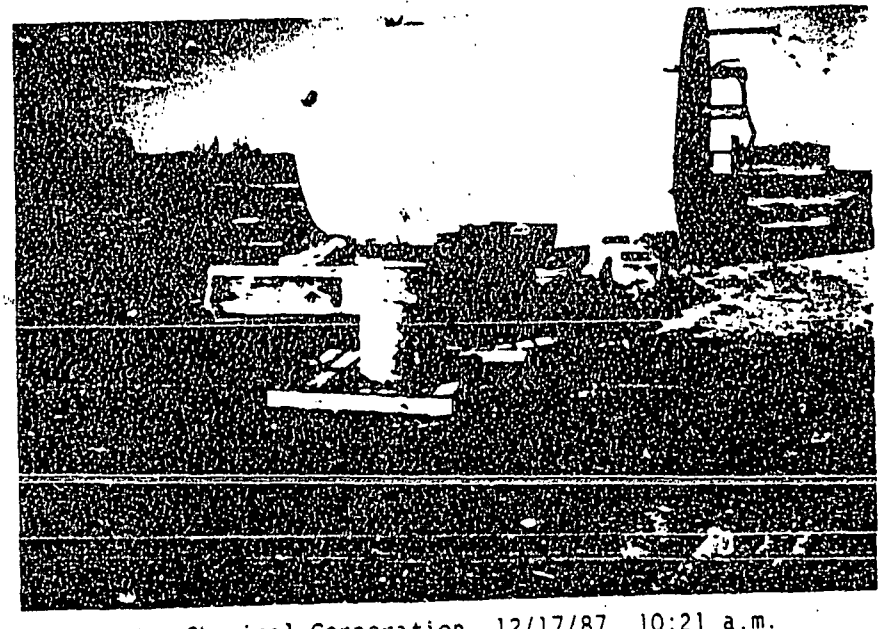
#80 (A.3-4) Cedar Chemical Corporation, 12/17/87, 8:31 a.m.
SWMU #52 - Drums



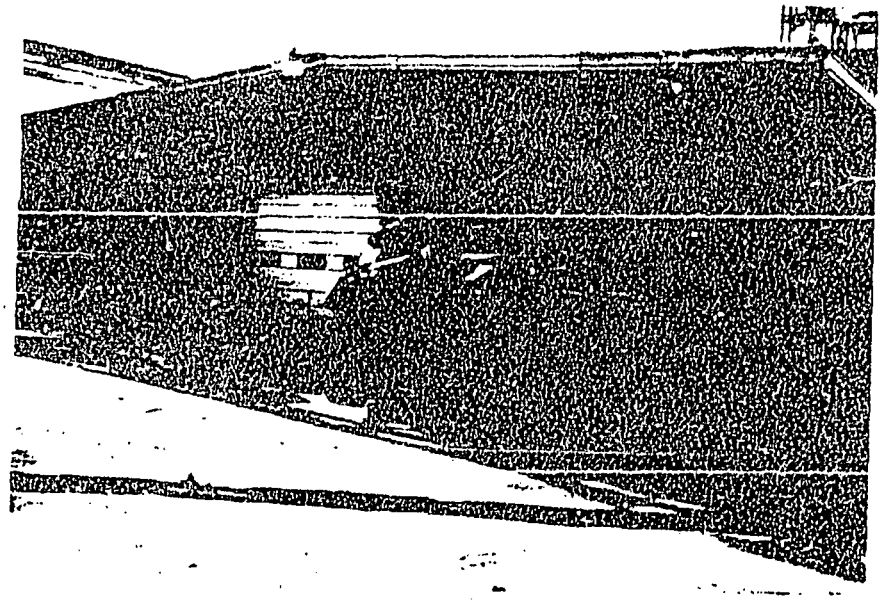
#81 (A.3-12) Cedar Chemical Corporation, 12/17/87, 9:43 a.m.
SWMU #53 - Solvent Cleaner Tank



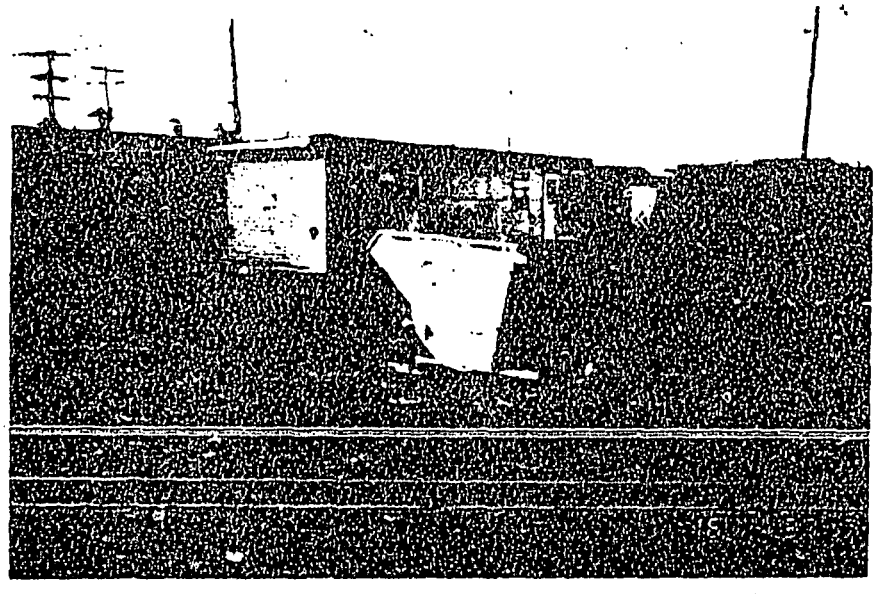
#82 (A.3-13) Cedar Chemical Corporation, 12/17/87, 9:46 a.m.
SWMU #54 - Miscellaneous Drum Storage



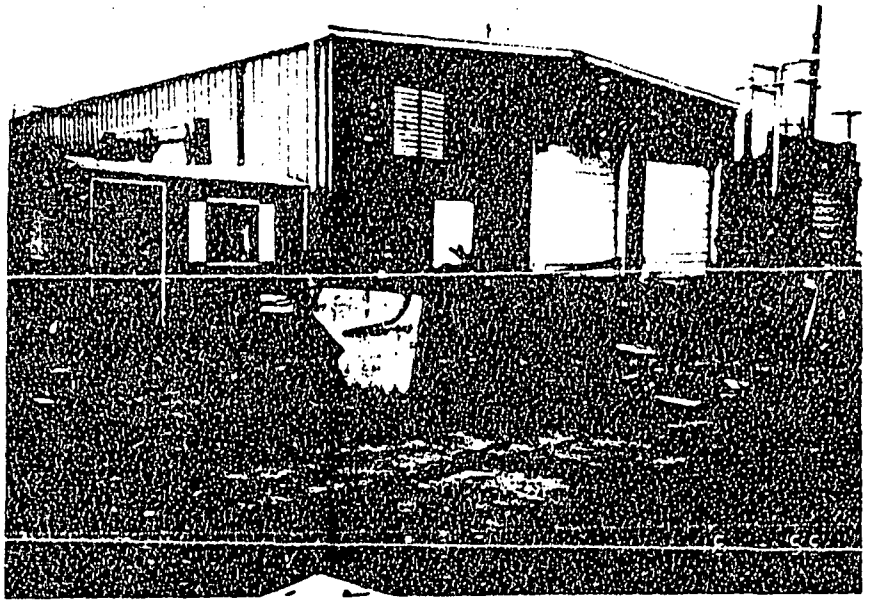
#83 (A.3-30) Cedar Chemical Corporation, 12/17/87, 10:21 a.m.
SWMU #54 - Miscellaneous Drum Storage



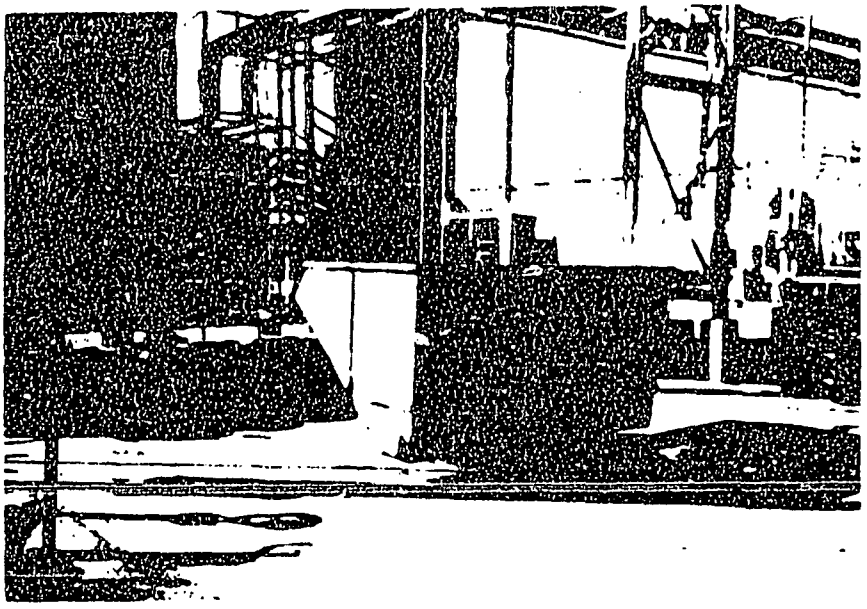
#84 (A.1-32) Cedar Chemical Corporation, 12/16/87, 3:25 p.m.
SWMU #55 - Dumpsters



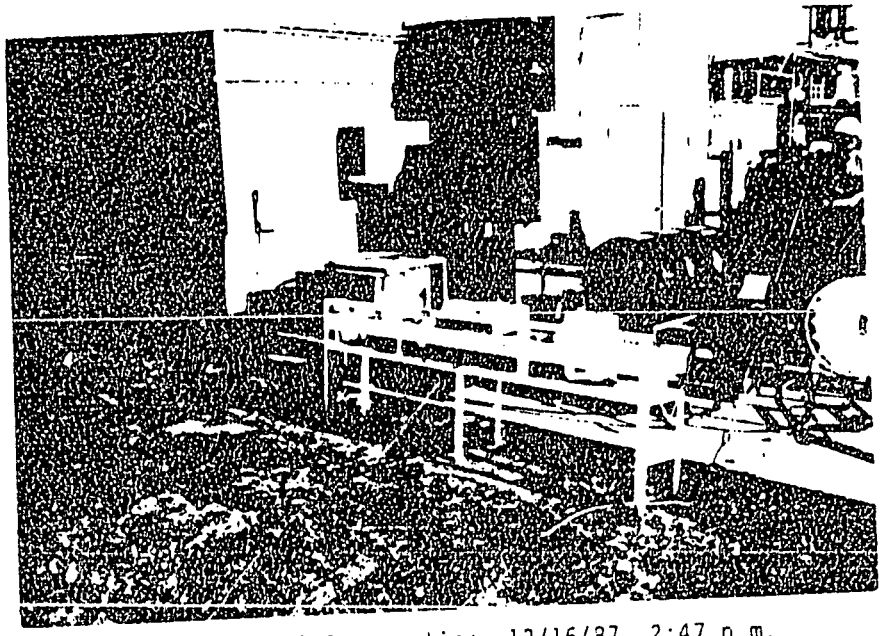
#85 (A.2-17) Cedar Chemical Corporation, 12/17/87, 4:37 p.m.
SWMU #55 - Dumpsters



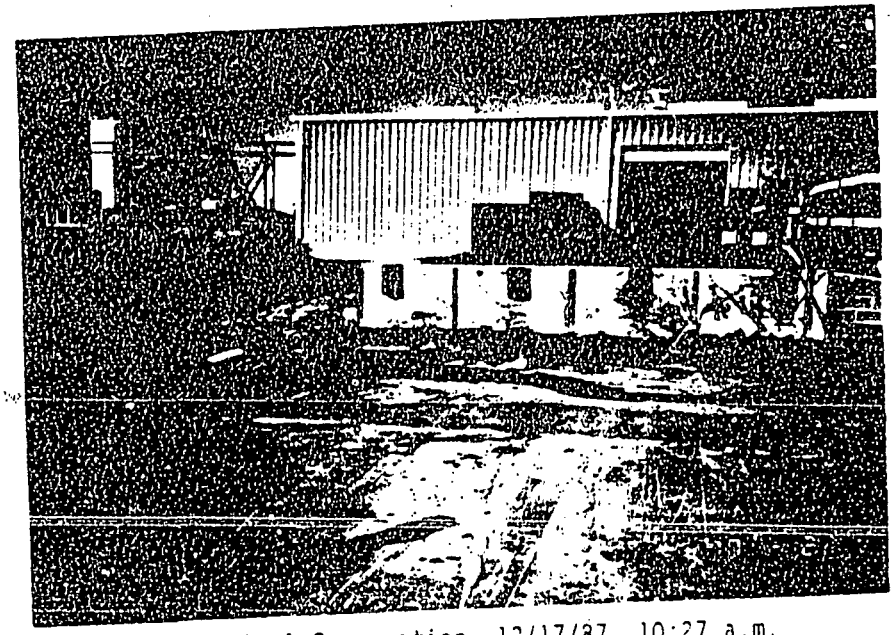
#86 (A.2-26) Cedar Chemical Corporation, 12/17/87, 4:56 p.m.
SWMU #55 - Dumpsters



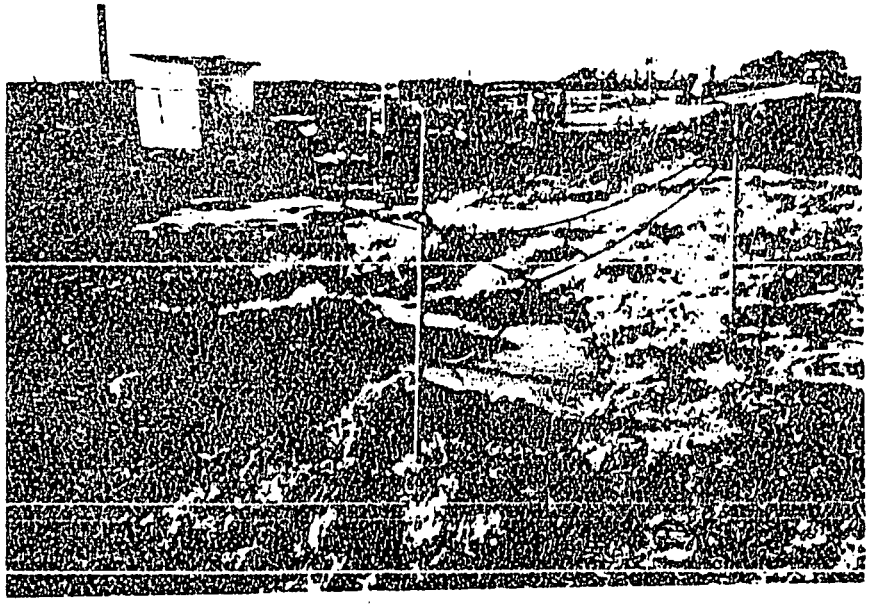
#87 (A.4-10) Cedar Chemical Corporation, 12/17/87, 11:06 a.m.
SWMU #55 - Dumpsters



#88 (A.1-4) Cedar Chemical Corporation, 12/16/87, 2:47 p.m.
SWMU #56 - Laboratory Waste Rack Area

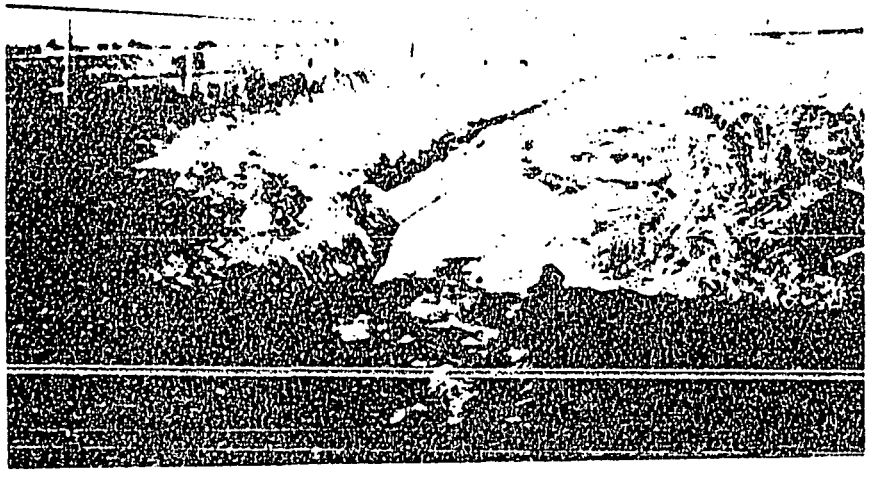


#89 (A.3-33) Cedar Chemical Corporation, 12/17/87, 10:27 a.m.
SWMU #58 - Loading/Unloading Dock Area (Warehouse)



#90 (A.3-5) Cedar Chemical Corporation, 12/17/87, 8:33 a.m.
SWMU #59 - Stormwater Drainage System

Note the break in the underground pipeline is in the process of repair.



#91 (A.3-6) Cedar Chemical Corporation, 12/17/87, 8:35 a.m.
SWMU #59 - Stormwater Drainage System along the south side of Industrial Park Road

#92 (A.3-7) Cedar Chemical Corporation, 12/17/87, 8:36 a.m.
SWMU #59 - Stormwater Drainage System immediately adjacent to the stormwater sump

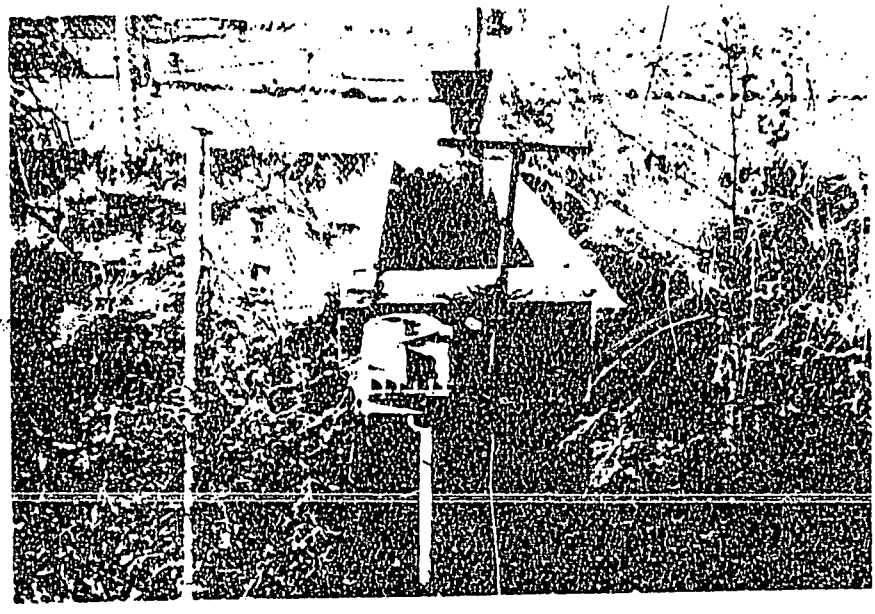
Note oil film on surface of water.

#93 (A.3-8) Cedar Chemical Corporation, 12/17/87, 8:36 a.m.
SWMU #59 - Stormwater Drainage System

Note oil film on surface of water.

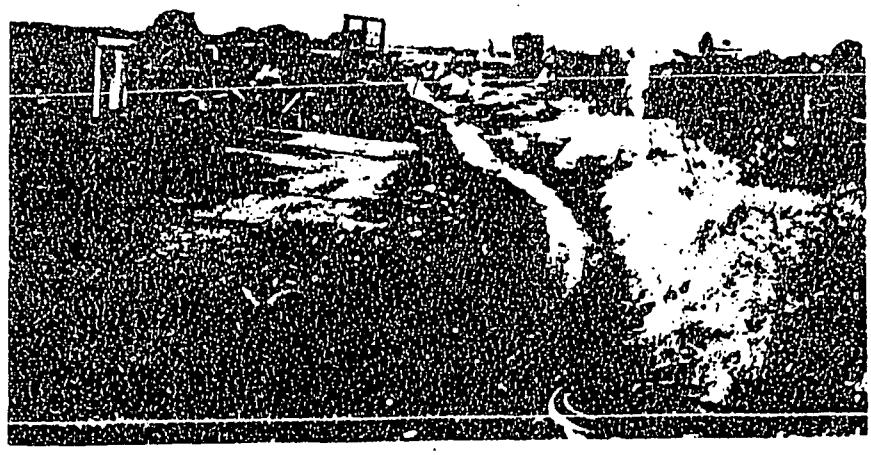
#94 (A.3-9) Cedar Chemical Corporation, 12/17/87, 8:38 a.m.
SWMU #59 - Stormwater Drainage System

NPDES-Permitted outfall looking north.



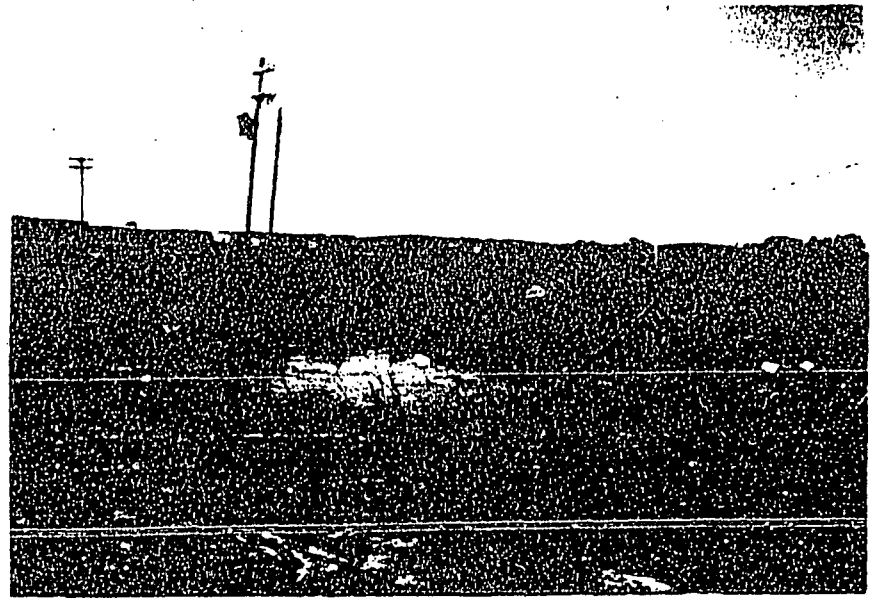
#95 (A.3-11) Cedar Chemical Corporation, 12/17/87, 8:42 a.m.
SWMU #59 - Stormwater Drainage System

NPDES-Permitted outfall looking south.

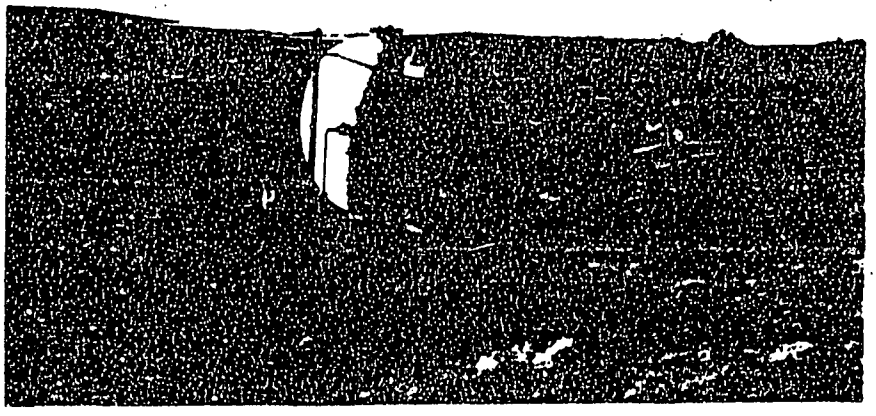


#96 (A.3-15) Cedar Chemical Corporation, 12/17/87, 9:50 a.m.
SWMU #59 - Stormwater Drainage System

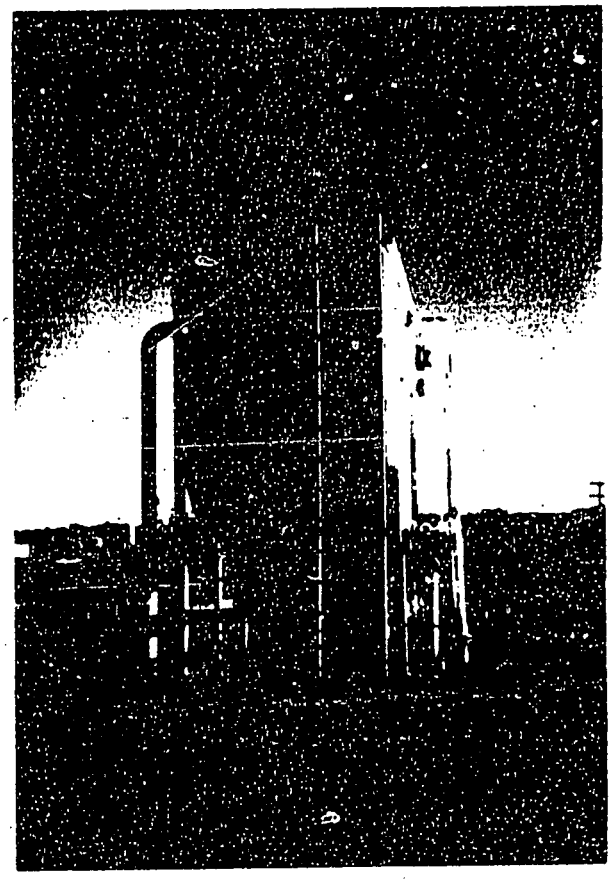
South of the Maintenance Shop, looking south.



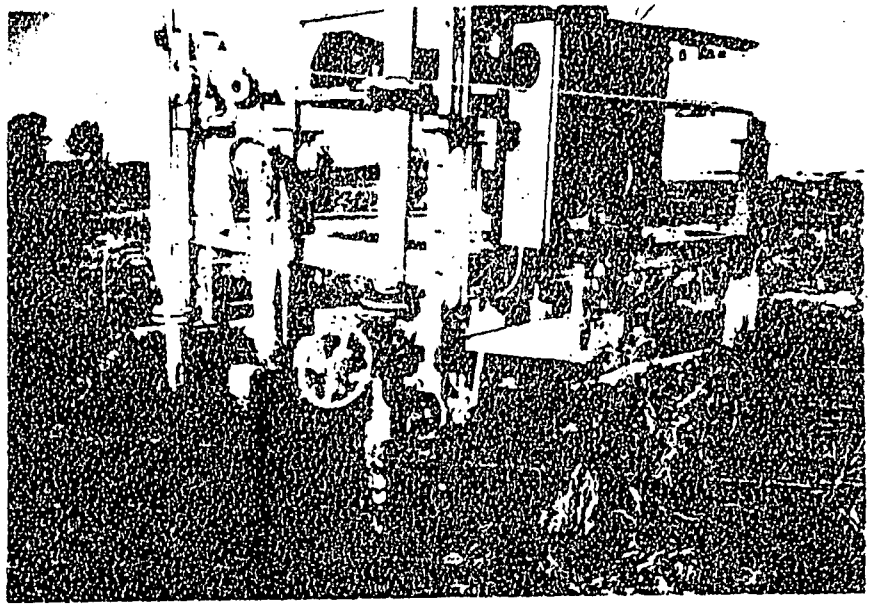
#97 (A.3-3) Cedar Chemical Corporation, 12/16/87, 8:29 a.m.
SWMU #60 - Stormwater Sump



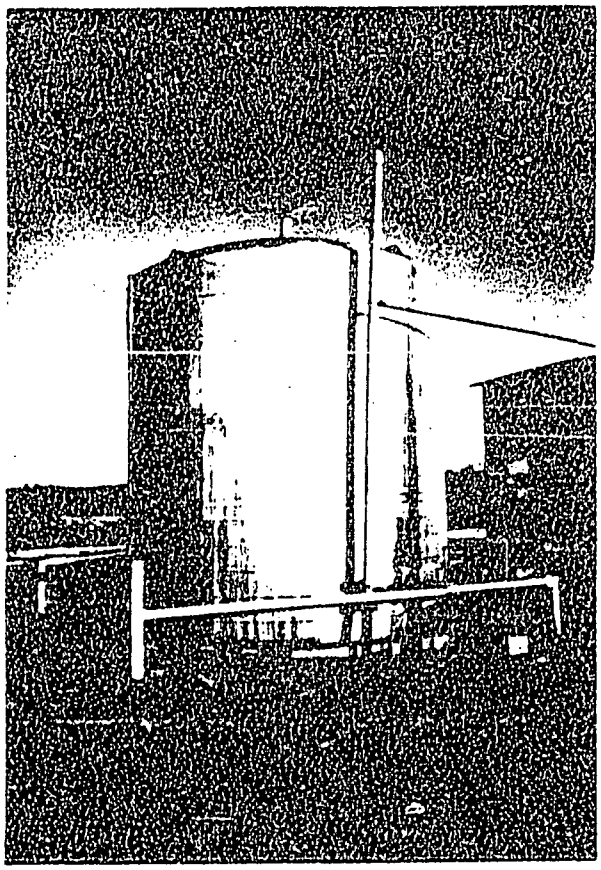
#98 (A.2-37) Cedar Chemical Corporation, 12/17/87, 8:12 a.m.
SWMU #61 - Wastewater Tank #1 Wastewater Treatment System



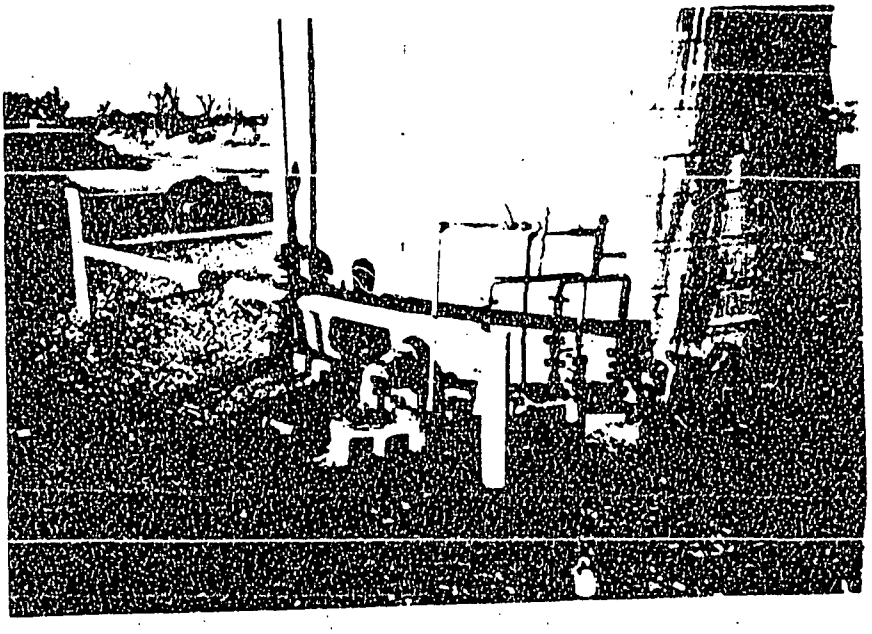
#99 (A.2-35) Cedar Chemical Corporation, 12/17/87, 8:09 a.m.
SWMU #62 - API Separator



#100 (A.2-36) Cedar Chemical Corporation, 12/17/87, 8:10 a.m.
SWMU #62 - API Separator

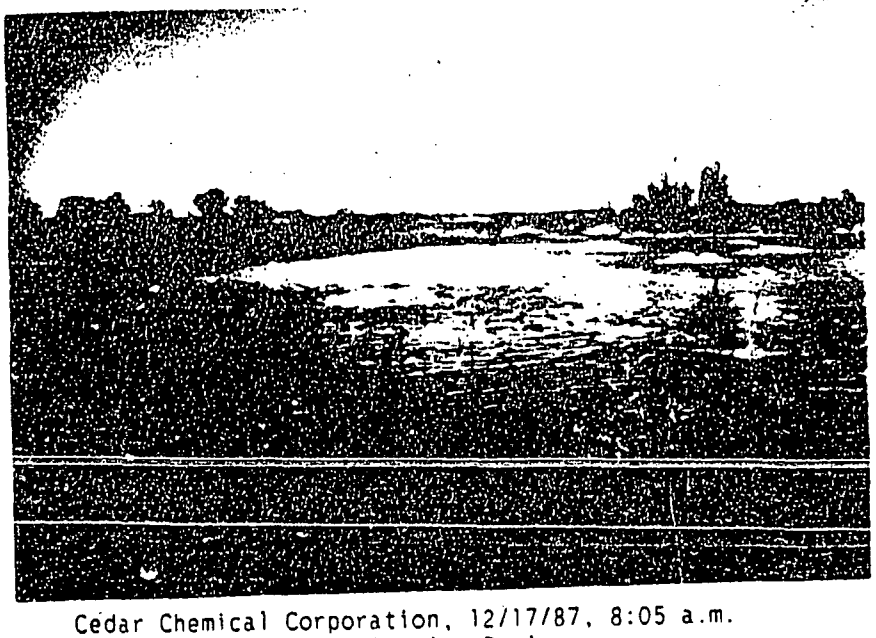


#101 (A.2-30) Cedar Chemical Corporation, 12/17/87, 8:00 a.m.
SWMU #63 - Wastewater Tank #2 Wastewater Treatment System

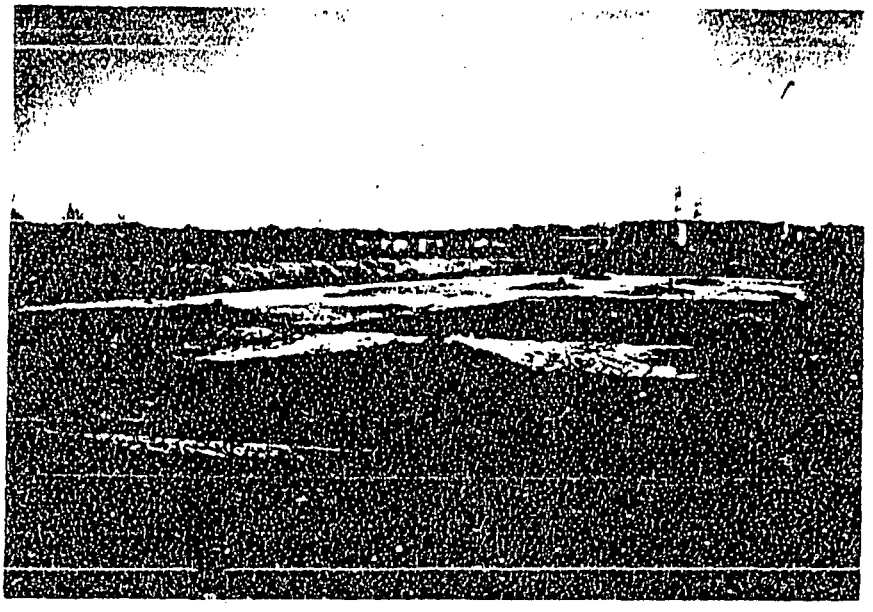


#102 (A.2-31) Cedar Chemical Corporation, 12/17/87, 8:02 a.m.
SWMU #63 - Wastewater Tank #2 Wastewater Treatment System

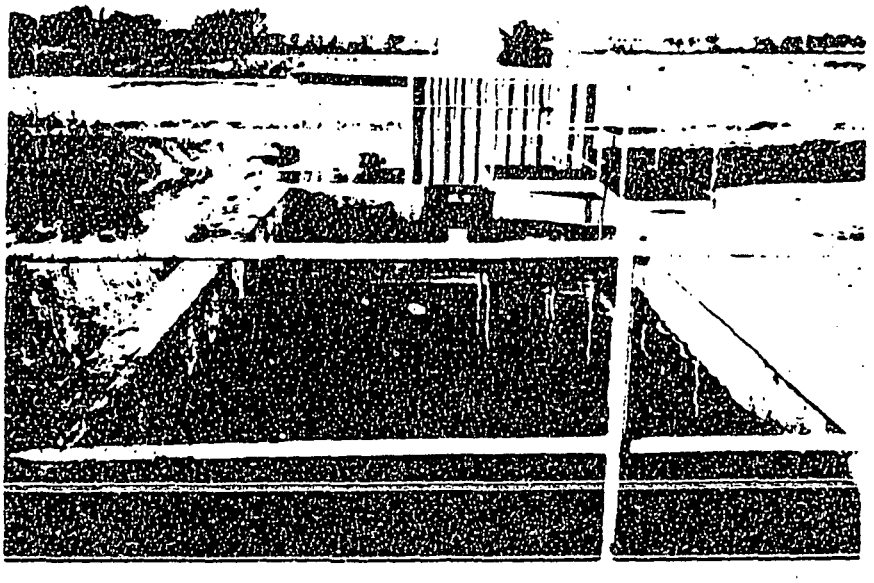
Note stain on soil.



#103 (A.2-34) Cedar Chemical Corporation, 12/17/87, 8:05 a.m.
SWMU #64 - Flow Equalization Basin

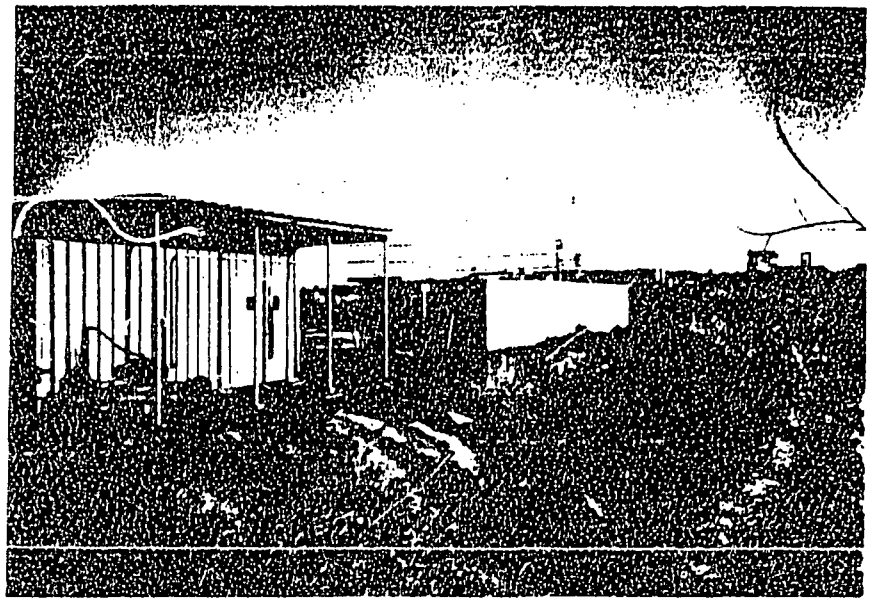


#104 (A.2-29) Cedar Chemical Corporation, 12/17/87, 7:59 a.m.
SWMU #65 - Aeration Basin

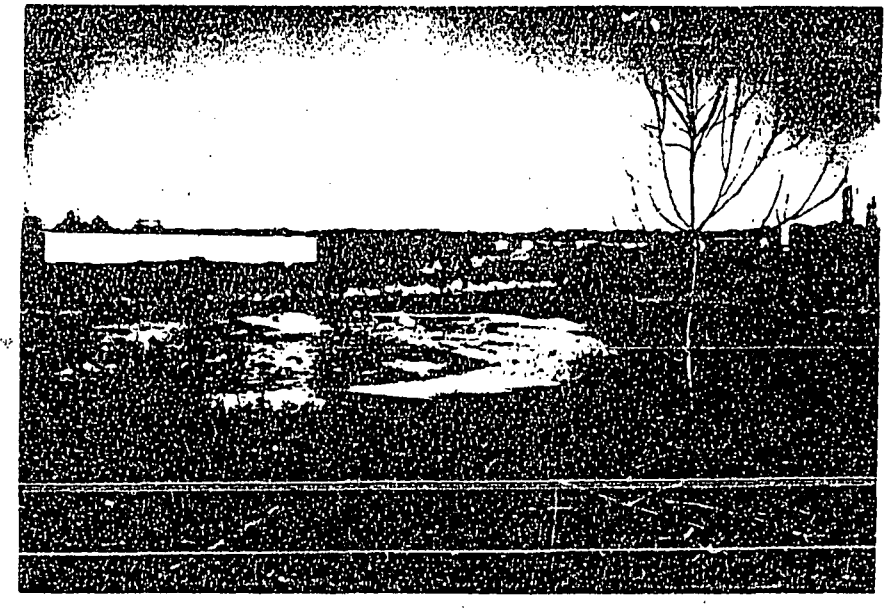


#105 (A.2-28) Cedar Chemical Corporation, 12/17/87, 7:51 a.m.
SWMUs #66 and #67 - Clarifiers #1 and #1

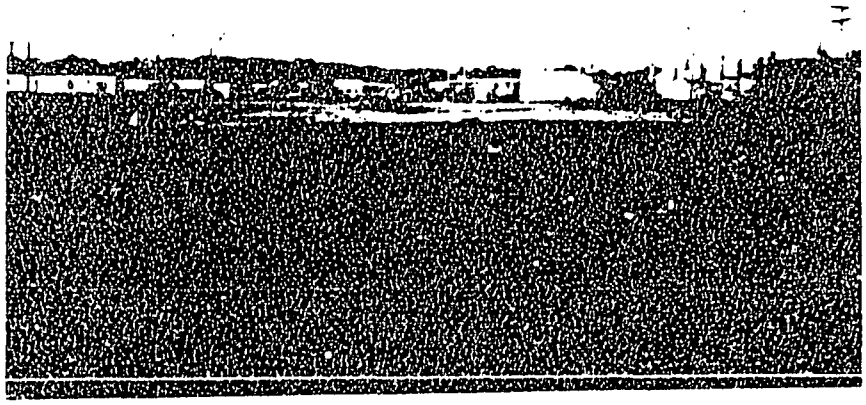
Pumphouse #2 is in background



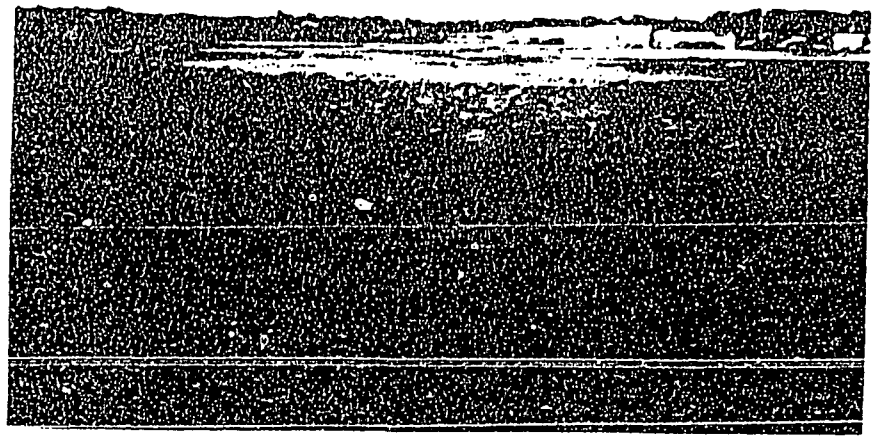
#106 (A.2-32) Cedar Chemical Corporation, 12/17/87, 8:03 a.m.
SWMUs #66 and #67 - Clarifiers #1 and #2



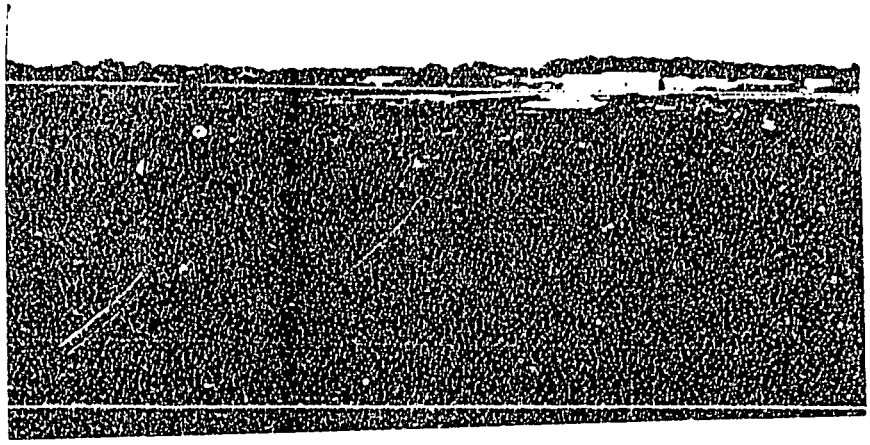
#107 (A.2-33) Cedar Chemical Corporation, 12/17/87, 8:03 a.m.
SWMU #68 - Polish Pond



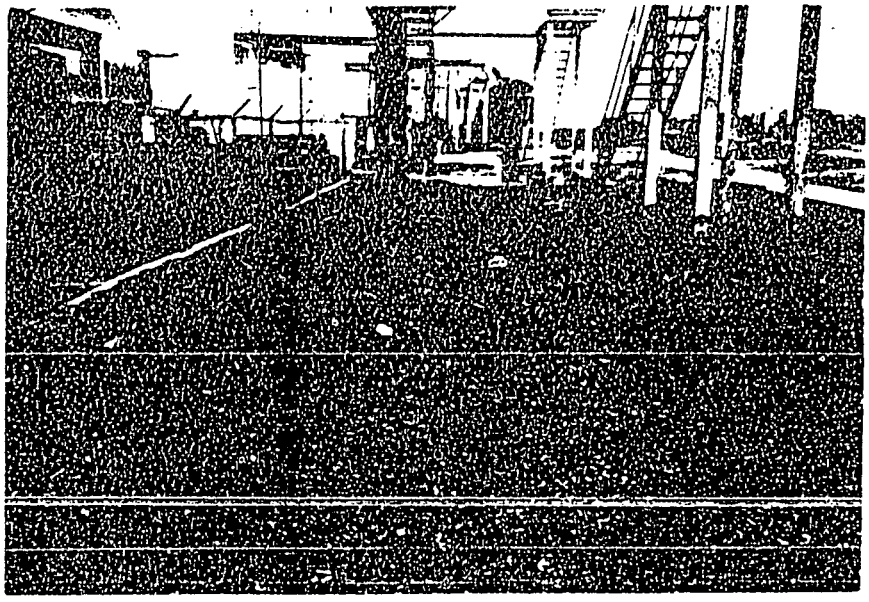
#108 (A.2-19) Cedar Chemical Corporation, 12/17/87, 4:41 p.m.
SWMUs #69 and #70 - Inactive Ponds #1 and #2



#109 (A.2-20) Cedar Chemical Corporation, 12/17/87, 4:43 p.m.
SWMUs #69 and #70 - Inactive Ponds #1 and #2



#110 (A.2-21) Cedar Chemical Corporation, 12/17/87, 4:44 p.m.
SWMU #69 - Inactive Pond #3

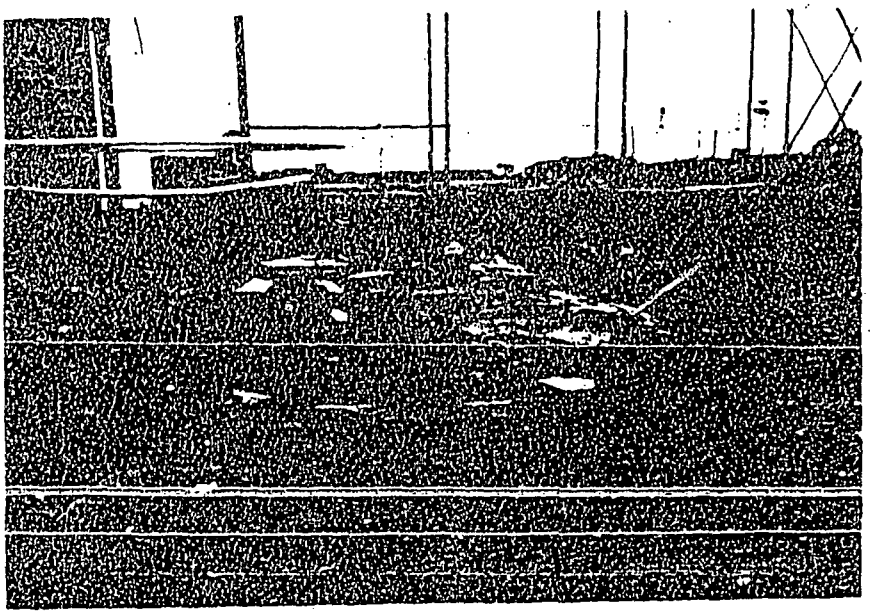


#111 (A.2-6) Cedar Chemical Corporation, 12/16/87, 3:52 p.m.
SWMU #74 - Loading/Unloading Area (Railroad Spur)

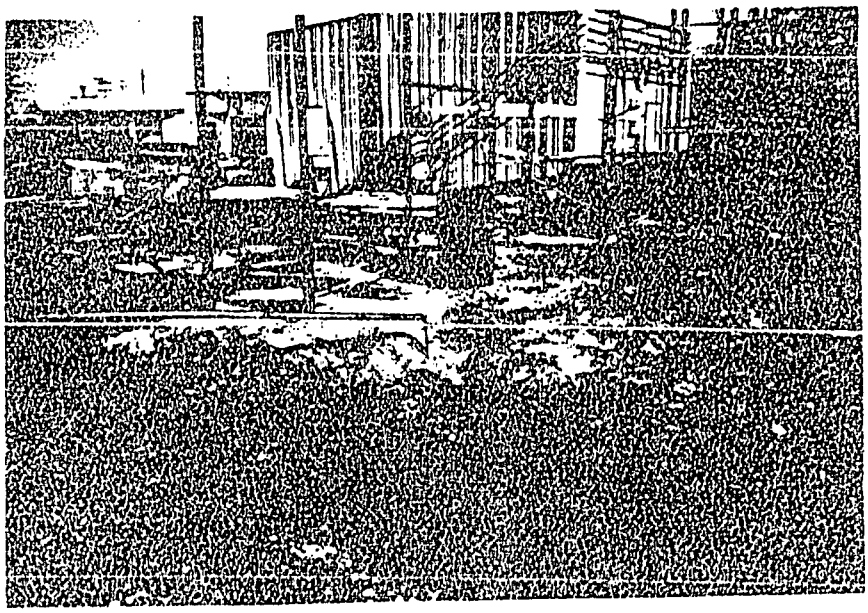
Note stain on soil.

#112 (A.2-9) Cedar Chemical Corporation, 12/16/87, 3:52 p.m.
SWMU #74 - Loading/Unloading Area (Railroad Spur)

Note stain on soil.



#113 (A.2-25) Cedar Chemical Corporation, 12/17/87, 4:54 p.m.
Yellow Stain Areas



#114 (A.3-31) Cedar Chemical Corporation, 12/17/87, 10:22 a.m.
Yellow Stain Areas

Appendix B

VSI FIELD NOTES

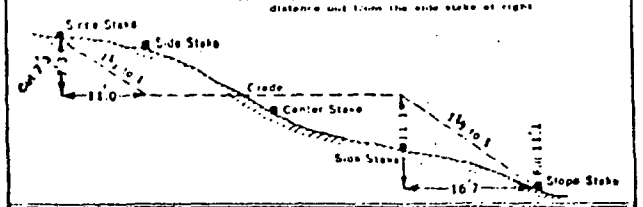
CEDAR CHEMICAL CORPORATION

December 16 and 17, 1987

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
Roadway of any Width. Side Slopes 1½ to 1.

In the figure below opposite 7 under "Cut or Fill" and under 3 read 11.0, the distance out from the side stake at left. Also, opposite 13 under "Cut or Fill" and under 7 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.6	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.6	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

Tom Hastings
Celanese Chemical Corp
West Helena Ark
USA
12/16/87
&
12/17/87

"Rite in the Rain"®
WEATHERPROOF

a product of
J. L. DARLING CORPORATION
TACOMA, WASHINGTON 98421 U.S.A.

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

17/10/87

11:00 AM
Meeting in CCC office
Attended by
T Hastings TETC
R Wilson ATK
J Porter CC
V Miles CC

Pac was established
in 69-70
has done contract mfg
since 1975
Deepwell is the only CCC
product
Pac formerly owned by
Helena Chemical
in 75 unit has constructed
produced methanyl
trademarks laminate
75 methacrylate production
stopped in unit 3

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Unit 1 - DCNB / DCA
Unit 2 Propanil
75 Unit 5 2 Chloro 5 Methylbenzo
MBE & Chloro Nitro Methyl
Benzol - Tradimane Mowdan
76 Unit 3 Converted to
Thiodanox & Carbamate
Insecticide
April 77: Unit 1 Converted
to Permythrine & Synthetic
Pyrethroid (SP)
78 - Nothing New
78 Shut down Unit 4
Propanil

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Production
Summary 78

1
2 Propanil
3 Dio Methiofan ox
4 Methomyl
5 NBE

79

1 Same
2 Same
3 Idle
4 Idle
5 NBE

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

SO
1 Same
2 Same
3 (BSC)
4) Idle
5) Idle

In 86 a thermocouple failed so pH < 2 was dumped directly into blot. Facility prior to 86 thermocouple no neutralization cont

AS LEGIBLE AS THIS LABEL.
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

2) Hammatic went to the
S1 till 77
3) DRA (Drag Reducing
Agent) increases flow
for pumping stations
on the Alaska Pipeline
off Spec Catalesweed
sent to a landfill in LA
4) MFC for ICI
5) goes from T014 to
WWTF
7) TB 107 } Same
26 x } Vessel

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Adams says the neutralization vessel is hard piped to the production unit. State agreed its a process unit

Original Part B submitted in 84. He responded to guidance checklists 1 & 2

They have filed for closure

a) RP 6 was the final wastestream shipped off site it was stored in TB 101 as was RP 15

AS LEGIBLE AS THIS [illegible],
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

(6) Fear Compounds
MFC Since Report
(1986)
Unit #3 (no waste stream

#4 CO 300
waste stream went into
T014 Then to off site
Disposal. Volumes
TBP by Cedar
Sent off site because
of Odor
Unit 3 MES waste was
stored in T14 & sent
off site for deep
well Disposal

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Unit 4 DNOC
generated waste streams
after neutralization
TB 102 then off site
to D.W.D. generated
SW that went into
drums (7 drums on
site TBS1 CWM
2 inch
230 PM
Joe Porter
TH
RW
Begin VSI

IF THE PAGE [illegible]
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Clear Day Temp 25°-30°
Light Breeze

° The Warehouse
contains a vault with
about 150-200 drums
The unit is underneath
the Warehouse ~~&~~ is
increased in cement

Photo:
1-1 Dumpster
Photo location
& Dislation of
Photo is Shown

IF THE PAGE FILMED IS NOT AS LEGIBLE AS THIS LABEL, IT IS DUE TO THE QUALITY OF THE ORIGINAL.

On Field Map
#1-2 Sump For Shower
Room laboratory
& Sanitary waste
From the Front
Office & Washing
Machines
6 N Capacity
12 x 6 x 4
[illegible] in the [illegible]
#1-2 Sump LN

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-3 Lab Solvents stored
onsids

1-4 Lab waste pack
holding indeterminate
wastes; 10 as
Perm Cyper
MPTO
Hypo Cyanid

1-5 Methanol Tanks
2x2x2
hydrocarbon Alcan Sup

1-6 Tenn. 00 500

1-7 Thiony Chloride
2x2x2

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

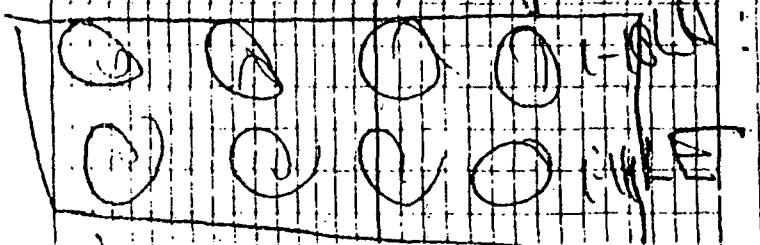
Sumps [illegible] area

1-8 2x4x4

1-8 4x6x2

Op since 70s

Back to the tanks
[illegible] dike floor
drains to sump



Disc [illegible] on [illegible]
Floating [illegible]

IF THE PAGE FILMED IS
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Tank TE 209
1-12 Waste Water
30 x 12 discolored
orange & white
Sump # 1-12
1-13 Sump

1-14 T002
5 x 3 3.5 on 1
divider
Tank is 40 x 15
discolored with
sediment staining

1-15 2x2 Sump

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-16 Sump outside MTF
3x3x3 filled in
Cooling tower blowdown
+ Surface runoff

1-17 Hypo Bleach
Sump is 2x2

1-18 Caustic Soda tank

1-19 Severe deterioration
along concrete water
filled as were others

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-20 PD 102 40x15
Tank disclosed
evidence of overflow
Cracks noted in
Concrete

1-21 Sump 2x2x2
Filled in

1-22 ~~MTPD Construction~~
#112 Sump Pen
TP 112
~~Clean Tank~~

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-23 Sump
MTPO Creek water

1-24 → Sump 1x1

1-25 Sump 1x1

1-26 Sump 1x1
Methanol tank was
in the area now
removed

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-27 Sump 1x1
for Scrubber
liquor

1-28

1-29 Aqua NH3 Scrubber,
liquor in service in 86
another unit was made
before.

1-30 Spent Sulphuric
with organics
added solvent to remove
organics

1-31 TN 904

IF THE PAGE FORMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-32 Dumpster
next to warehouse

1-33 3x3 Sump TL 105
Nitric Acid

1-34 Currently Raw
material Nit Acid
prior use was spent
Sulphuric came from
TN 204 Shipped offsite
for recovery. No plan
Tank was also known as
TL 105 Current # TN 205
Sea Boatment 3x3

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

no automatic overflow
Control on any Tanks

TB102
TB112
T 002
TPE 209

audible
alarms

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-35 Covered Sump by
Aqua NH_3 Tank

1-36 Waste drum Staging
area
all wastes also on
SKOs
17 Drums
MOX waste

1-37 Sump

Nitric acid caused
deterioration

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

2-1 Another picture
Same Sump 2x2

2-2 2x2 Sump

1-3 2x2

1-4 1x1 Sump

1-5 Recycled called
Waste Kerosene
No Tank #

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-6 loading are units
4 & 5 disclosation

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

2-7	Spillage
2-8	Polymer Spillage
2-9	"
2-10	3x4x2 Sump
2-11	Decayed Sump
2-12	Stained pupplethorn
2-13	Stain on RP Tank

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

2 14 11

2 15 11

2 16 11

IF THE PAGE FILMED IS NOT AS LEGIBLE AS THIS LABEL, IT IS DUE TO THE QUALITY OF THE ORIGINAL.

2-17 Hanyd Trash Container

2-18 Scale Sump

2-19 SI Shot From 2 hrs

2-20 Southern Pond No breaching occurred

2-21 Long SI Boundaries defined by base areas

IF THE PAGE FILMED IS NOT AS LEGIBLE AS THIS LABEL, IT IS DUE TO THE QUALITY OF THE ORIGINAL.

2-22 Non HCl Storage Area
25 Skids
4 to a Skid
30% Sodium hydroxide
Cement Area 40 x 40

2-23 Waste pipe Some Skided Some not

2-24 Warehouse

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-25 Yellow Stain
Area

2-26 (2) 2 Cu yd
dumpsters

2-27 (2) two drums
One waste oil
50 gallon

2-30 p.m Back in office

112
002
309

alarms
all tanks have
level gauges

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

* Big Expansion
of Unit 1 in 1976

12/17 7:30 AM Clear
Sunny Cold 20°-25°

1-28 looking so Clarifier

1-29 Aeration Basin
NNE

There is There is a 15x20
tank that takes
direct influent from
all of the process
waste flows

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

The pumps transfer
1:30 wastewater tank
leaving least 12,000
gallon on concrete pad
9:31 Sampling point
looking NW
1:33 Clarifier looking N
They took the floats
off of the aerators
repair costs are too
high - so now they
have bottom aerators

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1-33 Polish Pond

1-34 E B L-W

1-35 API to holding tank 700 gpm Freeboard 6-12" L-S Sampled 3 times daily - it can't over flow

1-36 API Looking West

1-37 10,000 gal / Carbon Steel Secondary Contact 20 X 30 X 2

IF THE PAGE FILMED IS NOT AS LEGIBLE AS THIS LABEL, IT IS DUE TO THE QUALITY OF THE ORIGINAL.

3-20 T014 Wastewater Secondary Containment Area 60 x 40 x 3 Sump Could not be Found

3-21 T014 Back Side

3-22 3x3 Sump covered with water

3-23 3x3 Sump material is analyzed sent to treatment system

3-24 Final Product Area Sold Waste is landfilled

3-25 500 gallon tank material Pumped from Sumps are pumped into this unit

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

1 holding tank Stretching
is due to rust

2 Pumping Station
2 Gould Pumps
200 GPM
L-W

3 Ditches to level
Controlled Pond
Float Switch
50' x 50' pond holds
200,000 gallon
would backfill
Upstream Ditches

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Unit is linked

3-4 3 Unknown Drums
L-W 2 had
Ceramic beads

3-5 Pipeline Break
Storm water sharing

3-6 Drainage Ditch

3-7 "

3-8 "

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

3-9 NPDES permitted
Outfall

3-10 Pumphouse
200 GPM
Concrete Base 10x10

3-11 Outfall L N

4) Gould 300 GPM

1 hydromatic 150 gpm

107 A&B 106 108 A&B

Feed to Clar from B10

Feed from E B to B10

Sludge Return from Clarifier

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

API is MFG by
Heil Processing
11 x 8 x 11 ft tall
installed 77
Chamber Dimensions
34 x 12 x 10 high

4 Scrubber units
in the facility I are
in the tank farm

3-12 Solvent Scrubber
3 x 2 on legs

3-13 Note unmarked drums
on skids outside

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

3-14 Drainage Ditch near
Maintanance Shop.

3-15 Drainage Ditch
Material on both
Sides is sensible

3-16 Hot Oil Heating Area
Note Stained Cement

3-17

3-18 Sump - Dimensions
cannot be determined
Covered with water

3-19 Drum Crushing Area
Sodium Cyanide
Drums stacked 4 high
300-350 on lot

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

3-26 HWM unit

3-27 Soap trailer

Back to HWM
curbing is 6" Drums
are only stored in
the area with secon-
dary containment.
The Slab slopes to the
sump. One end is
open. Recent Flood had
water up to the edge
& drums Mineral spirits
+4
Toluene 4+3

AS LEGIBLE AS THIS LAMPS,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

MO 4
Nitrobenzene 3
Unit in Service Since
1984

3-28 4 x 4 x 5' grated
Contains 10% of
the contents of the
Slab

3-29 Drainage from
HWS area

3-30 50 gallon Drums

3-31 Shot of Empty unmarked
Drum by Drainage
Yellow Stain

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

3-32 Drainage System by HWS area

3-33 Loading dock has been used for waste transfer. Warehouse is sometimes used as a staging area.

3-34 Cotton Trailer's two 30 x 10 x 8 filled with crushed barrels

3-35 50 empty drums stored in dissapary by the border of the facility this is staging

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

area prior to sale to
municipality

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

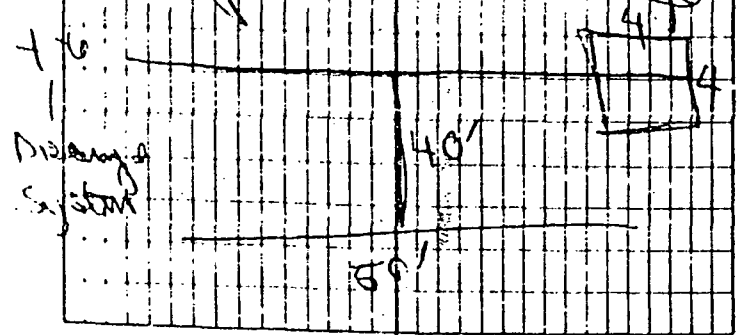
3-36 Crushed Drums in
Cotton bag on Stay on
Site a couple of months
3-37 Junk Drums inter
mixed with Drums that
have some indeterminate
material 200-250 all
are on Skids
4-1 Junk Drum Storage
4-2 Maintenance Shop Sump
175 Drainage 1'x6"
by 40'
4-3 Sump 5x5x3
Maint. Shop

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

~~4-4 12' x 8' Sump Production~~
Unit # 5

4-5 Drainage System 30' x 1'6"
Sump in 5 was pumped
to WWT System
Unit 5 is not op-
erational

Production Unit 4
Sump & Drainage



AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

4-7 TN 206

4-8 Sump

* Barrels over Sump
did not contain liquid
they arse in use

Waste Flow
Sump to 206
102
or
WWTS

4-9 Air Emmissions Scrubber
Scrubber liquor goes
over to tank Farm

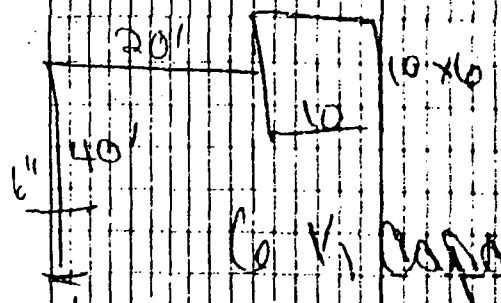
4-10 21 Cubic Yard dumpster

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Production Unit 3

4-4 Sump

4-12 Drain Covers (1)



6 Yr Capacity
Pumped Back to
Process Vessel
TB 112
102
WWTS

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

4-13 Absent Scrubber

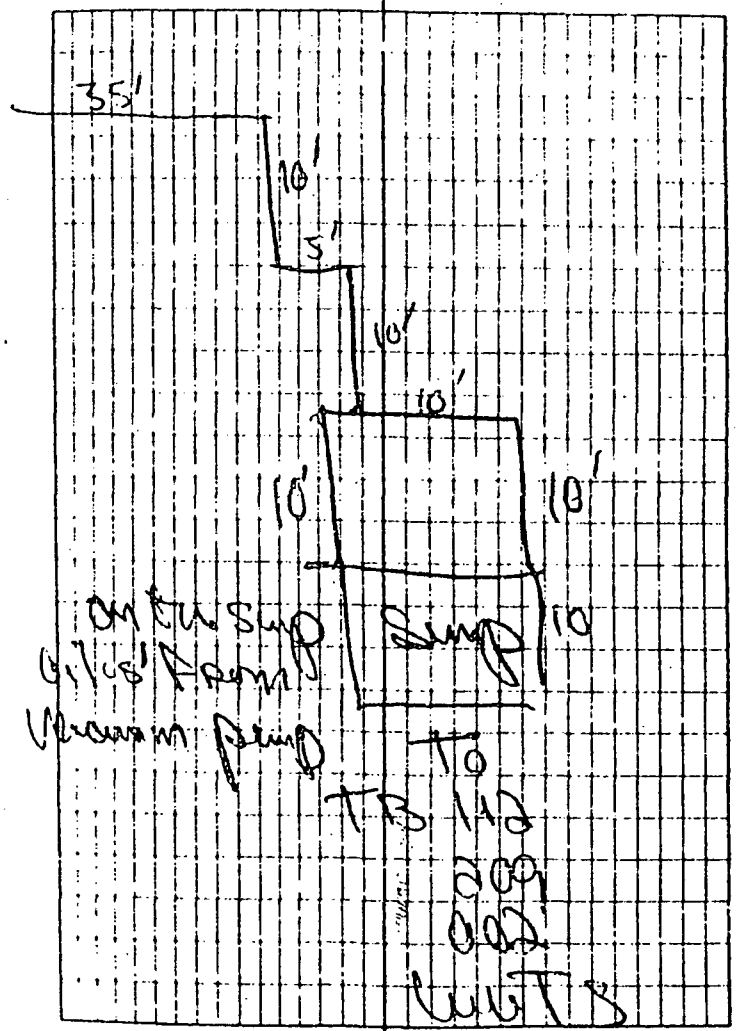
4-14 Absent Packaging
Filter Not in use
Not Present
Filtered out materials
prior to packaging
Filters went off site
for disposal in local
land fill

Production Units 1 & 2
Units 1 & 2 have a common
Sump 10 x 10 x 6

4-15 Sump

4-16 Drainage

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.



AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

4-17 Missing Filter
must have been in Pat
long gone to affect
disposal on TB 103

4-18 Sorbillar Unit 1 & 2
Counter hyperalloyd
1½' x 20'

Lunch

Meeting in Office
T Hasting
B Wasso
Porter OC

AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Tank History

TM 106 Diethyl Aluminum Chloride
" 105 Dodecane
" 110 Sulphuric Acid
" 108 Nitric "
100 Kerosene

TP 215 Methyl Oleum
219 Non Fuel Oil

207 - 213
Isophrone
Mecatyl Oxide Replaced by

209 - 212 has been constant
at one time [illegible]
another tank with
Thyonil Chloride

T002 Dike was once a Preparator
DCA Storage Nitric Acid
Chlorosulphuric Acid

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

TPE 217 Waste tank T020

Out no one knows what was in it

TB 104 - Caustic Solutions or hypochlorite

112 - Waste Tank

103 MTPO / Benzenesulfonil Chloride

102 WW Methyl Alcohol & Benzene

TN 213 Caustic Tank Methyl Alcohol & Reg. Methyl Alcohol

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TN 211 Empty

TN 201 Arsenical waste, Raw material for methyl thyo? MTAOR

TN 202 hypochlorite, Ammonia, was well w/o tank

105 106 108 110 109

Constant

Dodecane waste tank
Spent Ammonia
acid Sulfate
tank

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Small Tank Farm

T 114 WW
15 Nitric & Sulphuric
13 Metacresol & Final
Product Storage
& Propanil Product

TP 202 } Propanil Blends
203 }

Dike Clase Sulphuric Acid
MTD

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

There was a phased separation tank associated with the sumps at production units 3 & 4 & 5
500-1000 gallon unit
Unit 5 had an extraction tank associated with the sump - the tank was physically located in the sump

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Return to VSI 1:00 pm

4-19 5 x 20 Slanting on side
is Rust

T 015 also held MIBK
016 Raw material for MTPO

4-20 Decide to Shoot all the
Secondary Containment
areas for Tanks in
MTF

4-20

4-21

4-22 through 5-7 Shots
of dikes areas direction
of Photos marked on
Map

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

2/17

1.40 pm Wrap up meeting in office

T Hasting
R Wasser
J Popter
J Miles

Sampling & Analysis Plan was submitted to HPCDE & was approved.

The drum burial site has been totally erased. There may even be concrete pillars. D. Nitro Butyl is probable cause of yellow stain areas

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A Warren Explains we cannot comment on Pros & Cons of their Facility & Explains Report can be obtained with FOIA request through the Region Porter Provides a Tank list with Contents & written Summary of Production & Waste Stream generation at

IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

Soah Production
Area along with
Clean Maps of
the Facility