COOK COMPOSITES AND POLYMERS

• *Imagination* • *Innovation*

May 10, 1999

Department of Natural Resources
Southeast Region
2300 N. Martin Luther King Drive
P.O. Box 12436
Milwaukee, WI 53212-0436

Attn: Patrick Brady, Waste Management Engineer

Subj: Revised Feasibility and Plan of Operation Report
Noncommercial Container Storage and Tank Storage (#03202) and
Noncommercial Incinerator Treatment (#03203)
Cook Composites and Polymers (CCP) Co.
340 Railroad Street, Saukville, WI 53080
EPA ID # WID980615439

Dear Mr. Brady:

Under cover of this letter we are sending four (4) copies of the subject revised Feasibility Determination and Plan of Operation Report (FPOR). Please consider this letter our statement of intent to request FPOR approval and an extension of the effective period of the existing operating license for the CCP-Saukville facility.

The storage and incinerator facility has been operating per approval of the existing FPOR and the associated terms and conditions for the past ten years. Under the Wisconsin Administrative Code NR 680.45(6) and 680.45(7), we propose to continue operating under the same permit conditions that have proven both operationally successful and protective of health and of the environment during the extension or renewed operating license time period.

The motivation for the extension as well as the time period and terms were proposed to the WDNR as part of the Environmental Cooperation Program proposal submitted by CCP in a May 23, 1999 letter. Thank you for your assistance. Please do not hesitate to contact me at (816) 391-6011 if you have any questions.

Sincerely,
COOK COMPOSITES AND POLYMERS CO.

Michael Gromacki

Michael Gromacki,
Director- Environmental/Regulatory/Safety

Enclosures: As Stated

CCP

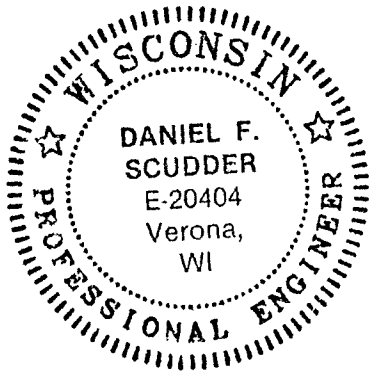
P.O. Box 419389 Kansas City, MO 64141-6389
(816) 391-6000 Fax: (816) 391-6337

I, hereby certify that I am a registered Professional Engineer in the State of Wisconsin in accordance with ch. A-E 4, Wis. Adm. Code and that the following report has been prepared in accordance with the Rules Of Professional Conduct in ch. A-E 8, Wis. Adm. Code:

Request for Approval
Feasability and Plan of Operation Report
(Revised May 1999)
And Renewal of
Hazardous Waste Operating Licenses
for
Noncommercial Container and Tank storage
and Noncommercial Incinerator Treatment
EPA. I.D. Number: WID980615439

Cook Composites and Polymers Company
340 Railroad Street
P.O. Box 148
Saukville, WI 53080-0148

Daniel F. Scudder — Date 5/7/99
Senior Project Manager
P.E. No.: E-20404



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Appendices

This section contains Form 1 and the Part A Application for the hazardous waste operations and processes at the Cook Composites and Polymers Co.(CCP) Saukville, Wisconsin Plant.

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Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

For EPA Regional Use Only

Date Received
Month | Day | Year

EPA
United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[ ] A. First Part A Submission

[X] B. Part A Amendment #

C. Installation's EPA ID Number	D. Secondary ID Number *(If applicable)*
WID980615439	

II. Name of Facility

COOK COMPOSITES and POLYMERS Co.

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

340 RAILROAD STREET

Street *(Continued)*

City or Town	State	Zip Code
SAUKVILLE	WI	53080—

County Code *(If known)*	County Name
	OZAUKEE

B. Land Type (Enter code)	C. Geographic Location: LATITUDE (Degrees, Minutes, & Seconds)	LONGITUDE (Degrees, Minutes & Seconds)	D. Facility Existence Date: Month / Day / Year
P	43 22 42	87 56 42	1948

IV. Facility Mailing Address

Street or P.O. Box

340 RAILROAD STREET

City or Town	State	Zip Code
SAUKVILLE	WI	53080—

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*	*(First)*
MASSE	GARY

Job Title	Phone Number *(Area Code and Number)*
PLANT MANAGER	414—284—0555

VI. Facility Contact Address *(See Instructions)*

A. Contact Address Location: [x] Mailing: [ ] Other: [ ]

B. Street or P.O. Box

City or Town	State	Zip Code
		—

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EPA I.D. Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
WID980615439	

VII. Operator Information *(See instructions)*

Name of Operator			
COOK COMPOSITES and POLYMERS Co.			
Street or P.O. Box			
340 RAILROAD STREET			
City or Town	**State**	**ZIP Code**	
SAUKVILLE	WI	53080-	
Phone Number *(Area Code and Number)*	**B. Operator Type**	**C. Change of Operator Indicator**	**Date Changed (Month Day Year)**
414-284-0555	P	Yes X No	04 02 90

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner			
COOK COMPOSITES and POLYMERS Co.			
Street or P.O. Box			
PO BOX 419389			
City or Town	**State**	**ZIP Code**	
KANSAS CITY	MO	64141-	
Phone Number *(Area Code and Number)*	**B. Owner Type**	**C. Change of Owner Indicator**	**Date Changed (Month Day Year)**
816-391-6000	P	Yes X No	04 02 90

IX. SIC Codes *(4-digit, in order of significance)*

Primary		Secondary	
2821	(Description) Plastic Materials & Resins		(Description)
Secondary		**Secondary**	
	(Description)		(Description)

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
N	WI0027316-	NPDES (Discharge to Surface Waters)

EPA I.D. Number *(Enter from page 1)*

W	I	D	9	8	0	6	1	5	4	3	9

Secondary ID Number *(Enter from page 1)*

XI. Nature of Business *(Provide a brief description)*

Manufacturer of polyester as well as various esters for the paint and coatings industry.

XII. Process Codes and Design Capacities

A. PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.*

B. PROCESS DESIGN CAPACITY - *For each code entered in column A, enter the capacity of the process.*
1. AMOUNT - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. UNIT OF MEASURE - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet or Hectare-meter
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day r Liters Per Day
D83	Surface Impoundment	Gallons or Liters
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters
S02	Tank	Gallons or Liters
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons or Liters
S05	Drip Pad	Gallons or Liters
S06	Containment Building-Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank	Gallons Per Day or Liters Per Day
T02	Surface Impoundment	Gallons Per Day or Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T80	Boiler	Gallons or Liters
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T88	Titanium Dioxide Chloride Process Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T94	Containment Building-Treatment	Cubic Yards or Cubic Meters
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
X04	Geologic Repository	Cubic Yards or Cubic Meters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's Per Hour	I

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EPA I.D. Number *(Enter from page 1)*: W I D 9 8 0 6 1 5 4 3 9

Secondary ID Number *(Enter from page 1)*:

XII. Process Codes and Design Capabilities *(Continued)*

EXAMPLE FOR COMPLETING ITEM XII (Shown in line number X-1 below): A facility has a storage tank, which can hold 533,788 gallons.

Line Number	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X 1	S 0 2	5 3 3 7 8 8 .	G	0 0 1	
1	T 0 3	500 (solvent) .	J	001	
2	T 0 3	1650 (reaction water) .	J	same as above	
3	S 0 2	8500 (mixed solvents and water) .	G	001	
4		.			
5		.			
6		.			
7		.			
8		.			
9		.			
10		.			
11		.			
12		.			
13		.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item XIII.

XIII. Other Processes *(Follow instructions from Item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X 1	T 0 4	.			In-situ Vitrification
1		.			
2		.			
3		.			
4		.			

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EPA I.D. Number *(Enter from page 1)*: W I D 9 8 0 6 1 5 4 3 9

Secondary ID Number *(Enter from page 1)*:

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item XIV-D(1).*
3. *Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).*

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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EPA I.D. Number *(Enter from page 1)*: W I D 9 8 0 6 1 5 4 3 9

Secondary ID Number *(Enter from page 1)*:

XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	F 0 0 3	2,000,000	P	T 0 3	
2	D 0 0 1	5,000,000	P	T 0 3	
3	F 0 0 3	165,000	P	S 0 2	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
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32					
33					

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GSA No. 0248-EPA-

EPA I.D. Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
WID 980 616 554 39	

XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed 5/10/99
Name and Official Title (Type or print) Charles Bennett Chief Operating Officer	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature Michael Gromacki	Date Signed 5-10-99
Name and Official Title (Type or print) Michael Gromacki Director, Environmental/Regulatory/Safety	
Operator Signature	Date Signed
Name and Official Title (Type or print) Gary Masse Plant Manager	

XIX. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to Instructions for more information)

Cook Composites and Polymers Corporation Co. (CCP) operates a plant in Saukville, Wisconsin that manufactures alkyd polyester resins for reinforced plastic for the paint and coating industry. CCP also operates similar plants in various parts of the United States. For the purpose of this application, the Saukville plant will receive waste solvents from its Marshall, Texas plant for noncommercial incinerator treatment. CCP's corporate offices are located in North Kansas City, MO.

The Saukville Plant began resin production in 1949. Since that time, the plant site has grown geographically, by acquiring additional properties to the east and southeast of the original site, and by adding various kettles, tanks, and buildings for adjusting, blending, thinning, rinsing, and storage of its raw materials and finished products. It has not made substantive changes to its operations and property since the early 1970s.

As part of the operation, CCP produces wastes consisting of solvents and solvent waste water. The wastes are considered to be hazardous as defined by 40 CFR §261 and by Wisconsin Regulation NR-605. CCP also occasionally accepts aqueous waste of substantively the same type as produced at the Saukville plant from a CCP plant located in Marshall, Texas. Wastes are all collected in six 8,500-gallon tanks and incinerated in one liquid injection incinerator. The tanks are all vented to a fume incinerator (afterburner) for control of organic vapor emissions.

The facility collects and incinerates only liquid wastes consisting of non-substituted hydrocarbons containing inherently no halogens, nitrogen and sulfur or regulated metals. Some minute quantities of halogenated solvents may appear in the wastes as impurities; however, their concentrations are well below any trigger values specified by present regulations. The wastes' solid content is so low that the incinerator's particulate emissions are well below all existing legal requirements without the use of added air pollution control devices. The wastes' metal content is also extremely low. As is demonstrated by the performance test report referenced in Section 5.0 and the site specific risk assessment (Section 13), the regulated organic compound, particulate, HCl and metals emissions from the incinerator are extremely low, well below any level that might be injurious to health and the environment.

Effective December 31, 1990, CCP acquired the plant at Saukville along with other assets, including other Freeman Chemical Corporation plants from Freeman Chemical Corporation. As a result, all of the permit information up to that date were in the name of Freeman Chemical. The effect of this acquisition on the subject permit is discussed below.

Freeman Chemical submitted a Part B Application to license the waste receiving, storage and incineration facility on December 20, 1985. The facility was issued the Feasibility Determination and Plan of Operation (FPOR) Approval on February 9, 1988 and a license to operate on June 1, 1989 (effective date was September 30, 1989). The approval covered the collection and storage of hazardous waste in the six tanks (each 8,500-gallon capacity) and treatment of hazardous waste by the incinerator at specified operating conditions. Pursuant to HSWA, the facility also

received a RCRA Part B permit on June 26, 1989 from the EPA which required that the facility, among other things, certify waste minimization, comply with land disposal restrictions, and perform follow-up actions (to address past releases of constituents from solid waste management units). The facility has satisfied all requirements of these permits. To the best of CCP's knowledge, all certifications are in order and an approved remediation plan is in place and on-going. See Section 14 which summarized corrective actions in place at CCP-Saukville.

As a result of the December 31, 1990 purchase of Freeman by CCP, all of Freeman's assets and permits were transferred to CCP and the permits and licenses were modified to reflect this change. This acquisition had no operational impacts on the facility's approval except for a restriction to the FPOR that the facility could receive waste only from other CCP facilities that had been owned by Freeman Chemical Corporation. Appendix 2-B contains a copy of the letter from the DNR explaining this restriction.

2.1 ACTIONS REQUIRED OF THE DNR

The incinerator facility's RCRA permit and FPOR expire on June 1, 1999. Under NR 680.45 (7), CCP hereby requests a Feasibility Determination and Plan of Operation Approval, an extension of the effective period of the permit until June 1, 2001. CCP recognizes that new federal regulations (termed the MACT Rules) that may impact this incinerator are pending and this time extension will allow us to evaluate the impact of these rules on this incinerator and other waste minimization and pollution prevention options.

CCP is requesting this approval on the basis of the following information:

Trial burn of the incinerator performed on August 29-30, 1989. These results clearly demonstrate that the incinerator emissions are far below all regulatory limits applicable then and at the time of the test and of this extension request.

- Historical waste analyses showing the absence of low levels of dissolved and suspended solids, metals, sulfur and halogens.
- Emission data obtained from this facility as part of the incinerator's trial burn testing in support of issuance of the present permit.
- Emission data from an incinerator of the same design, burning the same wastes at a similar CCP plant in Chatham VA.
- Historical waste reports filed with the Wisconsin DNR - available in the DNR's files.
- Waste analysis data obtained samples in support of this application.

- A site specific human health risk assessment performed using the Risk Assessment Guidance for Superfund (RAGS) approach and the following draft EPA guidance:

  HUMAN HEALTH RISK ASSESSMENT PROTOCOL FOR HAZARDOUS WASTE COMBUSTION FACILITIES, VOLUMES 1,2, 3, 1999, Peer Review Draft Available at the following URL:

  http://www.epa.gov/ncepihom/Catalog/EPA530D98001A.html

  http://www.epa.gov/ncepihom/Catalog/EPA530D98001B.html

  http://www.epa.gov/ncepihom/Catalog/EPA530D98001C.html

We reference the letter of Mr. Patrick Brady (Waste Management Engineer, Southeast Region Wisconsin DNR) to Mr. Mike Gromacki (Environmental Engineer CCP) dated March 24, 1999 allowing submission of this revised FPOR package in less than 180 days before the expiration date of the operating license.

We further request that the FPOR be granted with no substantive changes in permit and operating conditions from the existing license and FPOR approval. CCP's ten years of operating experience with the facility and the Saukville Plant's compliance record has demonstrated that this incineration facility is operating in compliance with applicable hazardous waste regulations and that it is fully protective of health and of the environment.

In support of this request, CCP is submitting this application for approval of this revised FPOR.

2.2 SITE

CCP's Saukville Plant is centrally located in the Village of Saukville, Wisconsin. The site is bounded by Main Street, Linden Street, a short section of Railroad Street, and Church Street on the east, south, west, and north respectively. An active railroad track runs along the full length of the site's western boundary. Figure 2-1 shows the location and detailed topography of the Saukville Plant and the surrounding land use. A portion of the U.S. Geological Survey (USGS) 7.5 - minute topographic map surrounding the Village of Saukville is shown in Figure 2-2.

The Saukville Plant covers an area of approximately 11.55 acres. The plant site is roughly L-shaped. The perimeter fence and all gates are more clearly shown in Figure 2-4. The main manufacturing and storage areas are in the southwestern, central, and south-central areas of the plant. Figure 2-3 shows the location and identity of the various buildings, facilities, and the incinerator building at the Saukville plant.

The hazardous waste storage and incinerator facility is located in the central portion of the plant site. It is housed in an enclosed building, with only the upper portion of the stack visible from the outside. Thus the facility is effectively screened from the surrounding community.

2.2.1 Site Physiography

Both the Village of Saukville and the plant site are located on relatively flat ground that gently slopes to the Milwaukee River (see Figures 2-1 and 2-2). The river flows through the village and to the east of the plant site, approximately 1,000 feet from the main plant area.

The plant site and surrounding area are underlain by a layer of glacial till of varying thickness over dolomite bedrock. Generally, the upper-level groundwater flows through the till toward the river. However, the Village municipal well field pumps water from the underlying dolomite. Rainwater drainage from the hazardous waste area is collected in an on-site 100,000 gallon collection basin and tested for organic contaminants (VOCs) the Saukville plant's National Pollutant Discharge Elimination System (NPDES) permit prior to discharge to the river. Normal runoff from the land that does not contain any waste or chemical receiving, storage, processing or handling systems surrounding the plant site generally flows toward the river.

2.2.2 Seismic Standard

The existing Saukville Plant small hazardous waste storage and incinerator facility and related treatment area(s) are located in Ozaukee County, Wisconsin. The plant location is not listed in 40 CFR Section 264, Appendix VI; therefore, no further information is required.

2.2.3 Floodplain Standard and Wetlands

Figure 2-1 shows the 100-year floodplain boundary, obtained from the U.S. Federal Insurance Administration, of the area surrounding the plant. As shown by the plant boundaries, all existing hazardous waste management areas lie outside the 100-year floodplain; therefore, compliance with floodplain standard is not required. All existing waste management areas are not located in a wetland.

2.2.4 Environmental Effect on Endangered Species

CCP has reviewed the Endangered Species Act and has found that this Act does not impact this Feasibility and Plan of Operation Report. The hazardous waste storage and incinerator facility does not affect any endangered species as no endangered species are found on or in the vicinity of the Saukville Plant site.

Prior to construction of this plant, the Wisconsin Department of Natural Resources (DNR) was contacted to determine if endangered species or critical habitats exist in the Saukville area. They

ascertained that a review of their records indicated that no endangered species or critical habitats exist in the area. Similarly, the State Historical Society was contacted to verify the absence of historical archaeological sites at or near Freeman Chemical's proposed project. State Historical Society records indicated that no historical or archaeological sites are located in or near the Saukville plant.

2.3 DESCRIPTION OF PROCESS PRODUCING WASTE

The Saukville Plant manufactures alkyd and polyester resins. The alkyd and polyester resins are produced by a condensation reaction. Alkyd resins are used in the coatings industry to make paints and varnishes. Polyester resins are sold to the reinforced plastics industry for use in fiberglass boats and molded polyester parts. The chemicals are produced in continuous stirred batch reactors. The resins are produced by a condensation reaction that produces water as a by-product. The water is continuously removed from the chemical reactor through the addition of xylene and toluene to create an azeotropic distillation. This distillation releases both water vapor and organic chemical vapors as distillates.

The vapors from the chemical reactors pass through a condenser and into phase separation decanters. The decanters receive the condensate from the polymerization reactors in the plant and produce two phases, an upper organic phase and a lower aqueous phase. The organic phase is recycled to the process and periodically pumped directly to the waste storage tanks in the incinerator building. The aqueous phase (which contains some dissolved organic material) is pumped directly to a different set of tanks in the incinerator storage building. The organic and aqueous waste streams are segregated prior to incineration to allow separate feeding and improve temperature control in the incinerator.

The process equipment, including the decanters, and the waste storage tanks in the incinerator building are all vented to a fume collection system that connects to a thermal oxidizer designed to destroy organic fumes and permitted under the facility's clean air permits.

Since no halogenated solvents, nitrogenated, sulfur bearing or other substituted (with the exception of some oxygenated solvents) compounds are used in the production processes these cannot occur in the waste. Furthermore, because the waste is effectively a distillation overhead product, any inorganic materials that may be found in the raw materials of the process remain in the reactor and do not enter the incineration waste stream. As a result, the wastes are very clean, contain only minute amounts (usually non-measurable) of chlorine, of metal, and of other materials that may create emissions subject to regulations.

Four hazardous wastes are presently generated at CCP□s Saukville Plant: (1) rinse solvent, (2) reaction water, (3) waste resin and off-spec product manufactured at the Saukville facility and returned by the customer, and (4) spill residues from "U- listed chemicals. The small hazardous waste storage and incineration facility covered by this FPOR only treats only the first two of these

wastes from the Saukville plant and comparatively small quantities of reaction water received from the CCP plant in Marshall, Texas.

Rinse Solvent: At the Saukville Plant, the waste rinse solvent is generated by two different processes: 1) by cleaning of process equipment with various non-halogenated solvents and 2) as the process waste (light phase from the decanters) from the manufacture of resins. The rinse solvent is re-used several times before it is considered spent and is stored in the production area between uses. When it is not longer usable as rinse, the solvent is transferred to the hazardous waste treatment area for incineration.

Reaction Water: Prior to incineration, the solvents and reaction water will be piped to a holding tank. The reaction water is hazardous by virtue of its potential ignitability and corrosivity. Although this is truly an aqueous solution, it does flash below 140^0 F about 50% of the time. A particular sample flashes only once and does not sustain combustion; nevertheless, it still qualifies as ignitable.

Waste Resin: Cook Composites and Polymers also produces a hazardous ignitable waste resin (D001). This material is produced from sampling of process and waste lines, transfer line drawings, filter drainage, and reject finished products. It is hazardous solely because of its ignitability. It contains only insignificant amounts of some Table VI compounds, except sometimes larger amounts of toluene. These wastes are disposed off-site in a properly licensed hazardous waste facility and are not fed to the on-site incinerator.

Spill Residues: The fourth source of hazardous waste at the Saukville Plant is residues from the clean up of spills of "U-listed chemicals. Cook Composites and Polymers uses large quantities of "U-listed chemicals, and, inevitably, there are *de minimis* losses and spills of these chemicals. The floor sweepings, rags, filter bags, etc., are handled in separate drums from the general solid waste stream. These drummed waste are properly disposed of off-site and are not fed to the on-site incinerator.

2.4 POPULATION, AREA, AND ENTITIES SERVED BY THIS FACILITY

CCP has a long association with the Village of Saukville. The company positively affects the general village population by making a major contribution to the municipal tax base, as it is a major industry in the village. Direct benefit is also made in the form of salaries to those townspeople who work at the Saukville Plant.

The hazardous waste storage and incinerator facility is used only by CCP. By far the greatest portion of waste incinerated at the plant is from the Saukville Plant's own manufacturing process. Some additional wastes come from one of CCP's other plants, located in Marshall, Texas. This waste has the same composition and properties as the aqueous waste generated at Saukville. All

wastes incinerated are compatible and consist of reaction water and waste solvents as described in Section 2.3 above.

2.5 TRAFFIC INFORMATION

Traffic routing and control at the plant, as shown in Figure 2-4, allows for the free and safe access of routine and emergency traffic onto and about the plant site and in the vicinity of the existing hazardous waste storage and incinerator facility.

The internal roads are paved with asphalt or concrete over soil with a load bearing capacity of approximately 6,000 pounds/foot^2, and the village access street are paved. In so much as these roadways are constructed to accommodate heavy travel by which vehicles identical to those that will deliver off-site hazardous wastes, the present roads are adequate.

2.5.1 Traffic Flow Pattern

The vast majority of the waste going to the incinerator is generated on-site and delivered to the incinerator storage tanks via hard piping. The only additional traffic generated by the incinerator is the occasional of off-site waste.

2.5.1.1 On-Site Traffic

Within the plant, traffic vehicles consist mostly of lift trucks and large trucks. Tractor trailer trucks and tankwagons enter the plant each working day, and lift trucks are used constantly throughout the plant as needed. Except for the occasional delivery of off-site waste all of the on-site traffic is not associated with the hazardous waste incinerator.

2.5.1.2 Off-Site Traffic

Employee cars are confined to the parking areas and entrance roads adjacent to Railroad and Linden Streets. Visitor vehicles are restricted to the parking area outside the plant main gate and adjacent to Railroad Street. The incinerator is run by plant employees who have other plant duties. Its presence on site does not generate any additional off-site employee traffic. The only additional off-site traffic generated by the incinerator is the occasional truck delivering off-site waste as discussed above.

2.5.2 Estimated Volume of Traffic

Presently approximately 15 to 25 trucks loads (80,000-pound tractor trailer and/or 6,500-gallon tankwagon) of raw material and/or products enter the plant site every working day (or 75 to 125 truck loads per week). The storage and incinerator facility, at maximum capacity, could accommodate approximately 4 truck loads of off-site hazardous wastes per week. However, a

much lower volume of off-site hazardous waste, delivered on an irregular schedule, is expected. Therefore, the increased traffic will be insignificant, on the average of no more than one truck per week.

2.5.3 Traffic Control Measures

Only one traffic control sign is associated with the plant. Traffic on Church Street must yield to traffic to and from the Saukville Plant site from the main gate on Railroad Street. The Saukville Plant is small in area; therefore, there is no need for internal traffic control signs. However, all hazards and curbing are marked with bright yellow paint for extra visibility.

2.6 STATEMENT OF NEED

The service area of the hazardous waste storage and incinerator facility is, in practical application, the area of the Saukville Plant site. Only Cook Composites and Polymers hazardous wastes are received and treated in this facility. Even though the facility is designed to accept off-site wastes from other Cook Composites and Polymers locations (i.e., other Cook Composites and Polymers manufacturing plants as defined by the letter issued to CCP by the DNR in Appendix 2-B), by far the majority of reaction waster and waste solvents incinerated are those generated on-site from the manufacturing processes at the Saukville Plant.

Cook Composites and Polymers has determined that the incinerator is the best solution to their hazardous waste disposal needs for several reasons:

- Its design assures at least 99.99% destruction of the hazardous constituents in the waste streams for incineration. As the responsibility for proper treatment lies with Cook Composites and Polymers as the generator of the wastes involved, the corporation believes that utilizing this incinerator is the best way to fulfill that responsibility and assure that the hazardous wastes are correctly treated and the hazardous constituents completely destroyed.

- The incinerator is the only facility in the service area and/or at a reasonable distance that is designed to treat the reaction water and waste solvents.

- The cost of transporting the reaction water and waste solvents to a properly licensed facility off-site, as opposed to on-site incineration of those wastes, would be prohibitive. Cook Composites and Polymers produces approximately 15,000 gallons of wastes for treatment and/or disposal per week. At a present disposal cost of $0.50 per gallon, including transportation fees (see Appendix 11-A), this could cost Cook Composites and Polymers up to $7,500 per week. Clearly the most cost-effective and safest treatments scheme is on-site incineration at the facility.

- The risk of accident and resulting cleanup costs are also eliminated by on-site disposal.

2.7 METHOD OF EFFECTIVE VISUAL SCREENING

As stated in Section 2.1, the existing hazardous waste storage and incinerator facility and the adjacent truck unloading facility are located in the center of the plant□s site, as far away from the surrounding properties as possible. The incinerator, the six waste holding tanks and the associated equipment are housed in a building designed specifically for this facility. Only the upper portion of the incinerator stack is visible from the outside.

2.8 COMPLIANCE WITH LOCAL APPROVAL REQUIREMENTS

As stated in Section 2.1, the hazardous waste storage and incinerator facility and the adjacent truck unloading facility are located in the center of the plant's site, as far away from the surrounding properties as possible. The incinerator, the six waste holding tanks and the associated equipment are housed in a building designed specifically for this facility. Only the upper portion of the incinerator stack is visible from the outside.

2.9 ENVIRONMENTAL ASSESSMENT INFORMATION

Presented herein is environmental information specified in NR 181.44(6) (a) (15). These regulations were specifically written to obtain environmental information for proposed landfills and surface impoundments. However, they have been adapted for this request to an existing hazardous waste storage and incinerator facility and ancillary equipment.

The existing incinerator and hazardous waste holding tanks are housed in a building which is diked for spill control. The #1 waste holding is the small storage facility (see Section 12.0 of this report). All hazardous wastes other than the solvent waste and process water are not incinerated on-site but shipped off-site for disposal in properly licensed facilities.

2.9.1 Purpose and Need for the Project

Section 2.6 of this report contains the statement of need for this project.

2.9.2 Impact of the Project

The incinerator complex has a negligible impact on the air quality of the region. This conclusion is supported by the emission data referenced in Sections 5 and the risk assessment presented in Section 13. The system's potential ground and surface water impacts from spills and leaks are minimized reduced by the dikes or berms around and concrete pads under the tank, waste receiving, and incinerator areas. The hazardous waste truck unloading area, holding tanks, and incinerator are on concrete pads and/or in an enclosed building. See also Section 4.4.3.6 of this report.

As discussed in Section 2.2.2 of this report, the Saukville Plant site is not within the 100-year floodplain.

The socio-economic impact of the incinerator system has proven to be beneficial to the entire Village of Saukville as well as to Cook Composites and Polymers. Operation of the incinerator for hazardous waste does not pose an adverse impact on the Village air quality, as discussed in Section 2.9.2. Also, the hazardous waste incinerator is located in a building in the center of the plant site. Thus, the area immediately around the plant is not adversely affected, by visual impact or noise. Lastly, by being able to continue to incinerate the waste on-site, CCP's level of employment has not been adversely affected.

2.9.3 Commitment of Resources

Not applicable. No new resources are required to maintain operation of the facility.

2.9.4 Alternative to the Project

Section 2.6 of this report discusses the need for the incinerator, along with alternatives. On-site incineration is the preferred alternative based on economics and safety. This alternative eliminates the need to transport liquid hazardous wastes off-site and thereby avoid the potential for transportation accidents. The waste solvent provides the energy needed to dispose of the reaction water. Therefore, the waste solvent is beneficially recycled for energy recovery.

2.9.5 Cumulative Effects of the Existing Facility

As discussed in Section 2.9.4, above, there should be no adverse impact from the existing facilities. Therefore, cumulative impacts are not expected.

2.9.6 Project Costs

The original construction costs for the hazardous waste tanks, incinerator, and building were approximately $2.5 million. Costs associated with operation of the storage and incinerator facility average approximately $100 thousand annually (1988 dollar). Long-term care costs are not an issue because the storage and incinerator facility will be operated until closure and the whole plant is currently conducting corrective actions with respect to the soil and groundwater associated with former plant operations. The incinerator complex under consideration herein has not been the cause of a single release to the ground, surface waters, or groundwater in its approximately ten years of operation and there is no reason to think that this will change in the future. The facility is built on an impervious concrete pad and it is completely inside a building that is bermed and diked to contain any conceivable spill. The waste receiving facility is also bermed and diked.

The CCP-Saukville has passed a trial burn when the license was originally issued, so minimal or no decontamination of the interior incinerator components will be necessary at closure. Similarly, the tanks (including the tank used as the small storage facility) and ancillary equipment will be clean closed at the end of their operating life. Cook Composites and Polymers will assure closure of the existing storage and incinerator facility by the financial test and corporate guarantee for closure (see Section 11.0 of this report for detailed closure and financial information).

This section describes the chemical and physical nature of the wastes treated by the Saukville Plant incineration unit and it presents the Waste Analysis Plan for sampling, testing, and evaluation these waste to assure that (a) sufficient information is available for their safe handling and (b) the wastes satisfy the limits specified by the FPOR.

The vast majority of the hazardous wastes to be incinerated are produced at the CCP Saukville Plant and are hard piped directly from the process to the incinerator complex. As a result, the chemical composition and properties of this material are very well known. By their very nature the chemical processes producing the waste do not use any chemicals that contain halogens, sulfur, nitrogen, or metals at levels that could result in the release of unacceptable levels of contaminants.

The waste quantities will vary according to CCP's production demands and operational schedule. However, at no times will the quantity of waste fed to the incinerator exceed the maximum specified by the FPOR. The two major waste streams being incinerated (solvent and aqueous wastes) are, by their nature, immiscible. They have very different heating values and any attempt at blending them prior incineration is both impractical and undesirable. The incinerator's temperature, gas flow rate, and other operating parameters can best be controlled by feeding these waste streams individually. The various solvent wastes will be blended to minimize short-term fluctuation in fuel composition.

3.1 CHEMICAL AND PHYSICAL DESCRIPTION OF WASTES

CCP, Saukville incinerates the following two waste streams:

1. Waste Solvent - F003

2. Aqueous Waste D001, D002 (potentially)

These two liquid wastes are respectively the light (solvent) and heavy (aqueous waste) phases in the process decant tanks. The top and bottom phases from the decant tanks are pumped to the four waste storage tanks (Tank #1, #2, #3, or #4) in the incinerator building. Since Tank #1 may be used for off-site wastes, on-site waste is not pumped into it unless it has been completely emptied of off-site wastes first. Similarly, no on-site wastes are pumped into Tank #1 unless it has been completely emptied of off-site waste. Note that the off-site waste is the aqueous wastes produced by the same types of chemical processes as produce the on-site wastes. There is no technical reason not to mix them in the tanks (the wastes are chemically compatible), they are kept separate to allow proper control of time in storage.

In Tanks #1 through #4, the wastes separate into two phases, solvent waste on top and aqueous waste on the bottom. Each tank is equipped with multiple taps and sight glasses along its height so that the operator can ascertain where the phase separation occurs and can, therefore, open the

appropriate tap to pump the solvent to the Solvent Waste Feed Tank (Tank #6) and the reaction water waste to the Reaction Water Feed Tank (Tank #5). The phase separation is easily accomplished because of the difference in specific gravity between the two waste streams and the relative insolubility of the F003 solvents in the D001 aqueous wastes. The two waste streams are fed directly to the incinerator from Tanks #5 and #6. Separation of the two phases allows excellent temperature and combustion control and very smooth burning in the incinerator.

The polymers manufacturing processes involve approximately 360 different formulations utilizing 400 raw materials. In spite of these variations, the chlorine content, heating value, ash content, metals content and potential Organic Hazardous Constituents (OHCs) present are relatively constant. As a result, the analysis presented below are representative of the wastes burned at any one time.

Further analytical Appendix IX data on the reaction water generated at the Saukville Plant and at CCP's plant in Marshall, Texas, that are occasionally received and burned at the Saukville plant are presented in Appendix 3-A. General information on each waste type to be burned and treated in the existing incinerator is given in Table 3-1. The possible OHCs based on the plant raw material usage, are given in Table 3-2. Appendix 3-B presents analytical data for reaction water and solvent samples obtained from the feed tanks at CCP-Saukville in April 1999 and analyzed by Quanterra Environmental Services (Quanterra) in May 1999. The analytes for the 1999 waste feed samples are metals, Appendix IX volatiles, semivolatiles, pesticides, PCBs, and herbicides. Other physical and chemical characteristic data, including elemental analyses, were also obtained.

NOTE: No wastes containing sulfur will be burned in the existing incinerator.

Table 3-1

General Information of Wastes to be Incincerated

I. Liquid Waste- Waste Solvent

a. Material:	Xylene, toluene, waste solvents and other hydrocarbons. These liquids contain some solid particles.
b. Heating Value:	18,000 Btu per pound
c. Burning Rate:	250 to 650 pounds per hour
d. Burning Cycle:	24 hours per day; 5 to 7 days/week (maximum design conditions)

II. Reaction Water

a. Material:	Products of the condensation reactions, 97% water, 50,000 to 100,000 ppm COD. Organic acids with pH ranging from 2 and 4.5.
b. Heating Value:	150 to 3,000 Btu per pound.
c. Burning Rate:	60 to 300 gallons per hours (2,500 pounds per hour per maximum)
d. Burning Cycle:	24 hours per day; 5 to 7 days/week (maximum design conditions)

NOTE: Waste solvent and reaction water waste streams are filtered to 40 mesh before entering the incinerator.

Table 3-2

Waste Number and Probable OHCs

Saukville Hazardous Waste Treatment and Storage Facility

Waste Materials, Incinerated	Waste ID. No.	Probable OHC Identified
Reaction Water (Source)		
1. Ignitable Liquids (Process Water)	D001	Maleic Anhydride, Phthalic Anhydride, Toluene, Xylene, All Listed OHCs
2. Corrosive Liquids	D002	Inorganic Acids
Spent Solvents (Source)		
1. Xylene (Polyesters, Alkyds)	F003	Methyl Methacrylate, Toluene, Isobutyl Alcohol, Maleic Anydride, Phthalic Anhydride, p-Benzoquinone, Phenol
2. Xylene (Urethane Resins)	F003	Bis (di-ethylhexyl) Phthalate
3. Xylene (Isoprepolymers and Blends)	F003	Toluene Diisocyanate
4. Xylene, Acetone (Laboratory Mixed Solvents)	F003	Maleic Anhydride, Toluene
5. Mineral Spirits, Ignitable (Long Oil Alkyds)	D001	Phthalic Anhydride, Toluene
6. Other Hydrocarbons (e.g., Butylcellosolve*, Cellosolve Acetate*)	D001	All of the above OHCs
Other Hazardous Wastes (Source)		
1. Ignitable (Polyesters, Coatings)	D001	Methyl Methacrylate, Isobutyl Alcohol
2. Ignitable Liquids (Laboratory)	D001	All listed OHC□s

*Dow Chemical Company Product

Table 3-3

Chemical and Physical Properties of Various Incinerated Wastes from CCP's Marshall Texas Facility [1]

	REACTION WATER	SOLVENT WASTE
Heating Value (Btu/lb)	1,400	14,500
Total Sulfur (%)	0.03	0.05
Total Organic Halogen (mg/1)	≤ 1	≤ 1
Lead (mg/1)	0.002	0.052
Mercury (mg/1)	0.0072	0.14
Total Suspended Solids (mg/1)	48	10
Corrosivity (mmpy)	0.689	0.375
Flash Point (°F)	>212	<32
Specific Gravity	1.024	0.9226
Ash (%)	0.016	0.0089

Note

[1] Source: Table 3-4, FPOR, Revision 2, 2/27/87

Table 3-3 (continued)

Chemical and Physical Properties of Various Incinerated Wastes

from CCP's Marshall Texas Facility

	REACTION WATER FROM ALKYD RESIN	REACTION WATER FROM FIRST STAGE OF ISOPHTHALIC RESIN
Bromine (ppm)	<5	<5
Chlorine (ppm)	<2	<2
Fluorine (ppm)	<2	<2
Heat of Combustion (Btu/lb)	150	1,700
%Ash	0.01	0.01
Flash Point (°F)	>210	>210
Brookfield Viscosity (cps)	1-50	1-50
% Water		
pH	2.2	3.7
Sodium (mg/1)	11	12

Table 3-4

Chemical and Physical Properties of Various Incinerated Wastes

from CCP - Saukville

	REACTION WATER 1/6/87	WASTE SOLVENT 6/3/87
Bromine (%)	≤0.2	≤0.3
Chlorine (%)	0.33	0.97
Fluorine (%)	0.04	
Iodine (%)	≤ 0.03	≤0.3
Heat of Combustion (Btu/lb)	≤150	17,881
% Ash	<0.001	<0.001
Flash Point (° F)	>200	88
Brookfield Viscosity (cps)	2.02	1.09 (cst)
% Water		0.179
pH		
Sodium (mg/1)	503	
Carbon (%)	15.84	84
Nitrogen (%)	0.36	0.11
Sulfur (%)	≤0.03	≤0.1
Phosphorus (%)	0.19	

	WASTE SOLVENT 8/15/84
Bromine (ppm)	15
Chlorine (ppm)	<2
Fluorine (ppm)	3.1
Heat of Combustion (Btu/lb)	18,000
% Ash	0.01
Flash Point (° F)	105
Brookfield Viscosity (cps)	1-50
% Water	
pH	
Sodium (mg/1)	11

Based on the OHC list, the reactions occurring at the plant, and gas chromatograph/mass spectrometer (GC/MS) data on the reaction water clearly shows that the only significant

concentration of OHCs occurs in the solid wastes that are not incinerated (i.e., filter solid, emptied bags, etc.).

3.1.1 Solvents

These solvents are blended and used as fuel for the incinerator. They are hazardous because of ignitability, listing, and content of significant but highly variable quantities of toluene.

3.1.2 Reaction Water (Esterification Water)

This aqueous waste is generated in the chemical reaction that forms the polyester and alkyd resins. It is codistilled with the solvents toluene and xylene. The mixture goes through a separator which has two distinct effluents- waste solvent and reaction water. The solvent is reused in the process or, if not meeting specifications, sent to the incinerator as fuel to provide the energy to destroy the reaction water. For regulatory definition, the separation tank is a process unit since the recovered solvent is always used either in the manufacturing process or as a fuel for the existing incinerator.

Reaction water is a hazardous waste because of its potential to flash below 140° F. NOTE: The portion of reaction water batches that do flash below 140^0 F is about 50% of the total reaction water generated.

3.1.3 Solid Hazardous Waste

All solid hazardous wastes are drummed and shipped offsite for proper disposal. None are incinerated in the subject system.

Table 3-5

Appendix IX Organochlorine Pesticide Data, EPA Method 608 (As Modified in the CLP)[1]

Hatcher Incorporated

Sample I.D.: Reaction Water Project: H17

Saukville CLE I.D.: H17-1

Compound	ug/L (ppb)	Found
Alpha-BHC	ND	(200)*
Beta-BHC	ND	(200)*
Delta- BHC	ND	(200)*
Gamma-BHC (Lindane)	ND	(200)*
Heptachlor	ND	(200)*
Aldrin	ND	(200)*
Heptachlor Epoxide	ND	(200)*
Endosulfan I	ND	(20)*
Dieldrin	ND	(40)*
4,4□- DDE	ND	(40)*
Endrin	ND	(40)*
Endosulfan II	ND	(40)*
4,4'- DDD	ND	(40)*
Endosulfan Sulfate	ND	(40)*
4,4'- DDT	ND	(40)*
Endrin Ketone	ND	(200)*
Methoxychlor	ND	(200)*
Chlordane	ND	(200)*
Toxaphene	ND	(2000)*
Aroclor- 1016	ND	(2000)*
Aroclor- 1221	ND	(2000)*

Table 3-5 (continued)

Organochlorine Pesticide Data, EPA Method 608 (As Modified in the CLP)[1]

Hatcher Incorporated

Sample I.D.:Reaction Water Project: H17

Saukville CLE I.D.: H17-1

Compound	ug/L (ppb)	Found
Aroclor- 1232	ND	(2000)*
Aroclor- 1242	ND	(2000)*
Aroclor- 1248	ND	(1000)*
Aroclor- 1254	ND	(1000)*
Aroclor- 1260	ND	(1000)*
Isodrin	ND	(40)*
Chlorobenzilate	ND	(1000)*
Kepone	ND	(200)*

[1] Source: Cal Lab East Inc., Section 3, FPOR, Revision 2, 2/27/87

ND= Not detected; reporting limits in parentheses.

* = Reporting limits raised due to interference

Table 3-5 (Continued)

Organophosphorus Pesticide Data, EPA Method 614

Hatcher Incorporated
Sample I.D.: Reaction Water
Saukville

Project H17
CLE I.D.: H17-1

	ug/L (ppb)	Found
Thionazin	ND	(2)
Sulfotepp	ND	(2)
Disulfoton	ND	(2)
Methyl Parathion	ND	(2)
Parathion	ND	(2)
Famphur	ND	(10)
Dimethoate	ND	(2)
Phorate	ND	(2)

Table 3-5 (Continued)

Phenoxy Herbicide Data, EPA Method 615

Hatcher Incorporated

Sample I.D.: Reaction Water
Saukville

Project H17
CLE I.D.: H17-1

Compound	ug/L (ppb)	Found
2-4-D	ND	(1600)*
2,4,5-TP	ND	(400)*
2,4,5-T	ND	(400)*

ND= Not detected; reporting limits in parentheses.
* = Reporting limits raised due to interference

Table 3-5 (Continued) Appendix IX Volatile Organics, EPA Method 624

Sample I.D Reaction Water
Saukville

Project H17
CLE I.D.: H17-2

Compound	µg/L (ppb) Measured	Detection Limit
Acetone	ND	(375,000)
Acetonitrile	ND	(62,500)
Acrolein	ND	(62,500)
Allyl Alcohol	ND	(62,500)
Benzene	ND	
Bromodichloromethane	ND	(6,250)
Bromoform	ND	(6,250)
Bromomethane	ND	(6,250)
Carbon disulfide	ND	(12,500)
Carbon tetrachloride	ND	(6,250)
Chlorobenzene	ND	(6,250)
2-Chloroethylvinyl ether	ND	(6,250)
Chloroform	ND	(12,500)
Chloromethane	ND	(6,250)
3-Chloropropene	ND	(12,500)
Dibromochloromethane	ND	(6,250)
1,2-Dibromo-3-chloropropane	ND	(6,250)
1,2-Dibromoethane	ND	(6,250)
trans-1,4-Dichloro-2-butene	ND	(12,500)
Dichlorodifluoromethane	ND	
1,1-Dichloroethane	ND	(6,250)
1,2-Dichloroethane	ND	(6,250)

trans-1,2-Dichloroethene	ND	(6,250)
1,1-Dichloroethene	ND	(6,250)
Dichloromethane	ND	(25,000)
cis-1,3-Dichloropropene	ND	(6,250)
1,3-Dichloro-2-propanol	ND	
trans 1,3 Dichloropropene	ND	(6,250)
1,4-Dioxane	ND	(500,000)
Ethyl benzene	ND	(6,250)
Ethyl cyanide	ND	(375,000)
Ethylene oxide	ND	(62,500)
2-Hexanone	ND	(12,500)
Iodomethane	ND	(12,500)
Isobutyl alcohol	ND	(500,000)
Methacrylonitrile	ND	(25,000)
Methylethyl ketone	ND	(25,000)
4-Methyl-2-pentanone	ND	(12,500)
Paraldehyde	NR	
2-Propn-1-ol	NR	
Styrene	23,000	(6,250)
1,1,1,2-Tetrachloroethane	ND	(6,250)
1,1,2,2-Tetrachloroethane	ND	(6,250)
Tetrachloroethane	ND	(6,250)
Toluene	710,000	(62,500)+
1,1,1-Trichloroethane	ND	(6,250)
1,1,2-Tetrachloroethane	ND	(6,250)
Trichloroethene	ND	(6,250)
1,2,3-Trichloropropane	ND	(6,250)

Vinyl acetate	ND	(12,500)
Vinyl chloride	ND	(12,500)
Xylene (total)	120,000	(6,250)

ND= Not detected; reporting limits in parentheses. Reporting limits have been adjusted for sample dilution.

NR= Not recovered by this method at 100 ppb.

+ Quantitated at second dilution (1:12,500).All other compounds reported based on 1:1250 dilution.

Table 3-5 (Continued)

Appendix IX Semivolatile Organic Data, EPA Method 625

Hatcher Incorporated
Sample I.D.:Reaction Water Project H17
Saukville

CLEI.D.: H17-2

Compound	ug/L (ppb) Found	
	measured	Detection Limit
Acenaphthene	ND	(100,000)
Acenaphthalene	ND	(100,000)
Acetophenone	ND	(100,000)
2-Acetylamminofluorene	ND	(200,000)
4-Aminobiphenyl	ND	(100,000)
Aniline	ND	(100,000)
Anthracene	ND	(100,000)
Aramite	ND	(200,000)
Benz (a) anthracene	ND	(100,000)
Benzenethiol	NR	
Benzidine	ND	(500,000)
Benzo (g, h, i) perylene	ND	(100,000)
p-Benzoquinone	NR	
Benzo(b) fluoranthene	ND	(100,000)
Benzo(k) fluoranthene	ND	(100,000)
Benzo(a) pyrene	ND	(100,000)
Benzoic acid	ND	(500,000)
Benzyl alcohol	ND	(100,000)
Bis(2-Chloroethoxy) methane	ND	(100,000)
Bis(2-Chloroethoxy) ether	ND	(100,000)
Bis(2-chloroisopropyl) ether	ND	(100,000)

Bis(2-ethylhexyl) phthalate	ND	(100,000)
4-Bromophenyl phenyl ether	ND	(100,000)
Butylbenzyl phthalate	ND	(100,000)
2-sec-Buty1-4,6-dinitrophenol	ND	(500,000)
p-Chloroaniline	ND	(100,000)
p-Chloro-m-cresol	ND	(100,000)
2-Chloronaphthalene	ND	(100,000)
2-Chlorophenol	ND	(100,000)
4-Chlorophenyl phenyl ether	ND	(100,000)
3-Chloropropionitrile	ND	(100,000)
o-Cresol	ND	(100,000)
Dibenz (a,h) anthracene	ND	(100,000)
Dibenzofuran	ND	(100,000)
Di-n-butyl phthalate	ND	(100,000)
o--Dichlorobenzene	ND	(100,000)
m--Dichlorobenzene	ND	(100,000)
p-Dichlorobenzene	ND	(100,000)
3,3'-Dichlorobenzidine	ND	(200,000)
2,4-Dichlorophenol	ND	(100,000)
2,6-Dichlorophenol	ND	(100,000)
Diethyl phthalate	ND	(100,000)
3,3'-Dimethoxybenzidine	ND	(800,000)
p-Dimethylaminooazobenzene	ND	(800,000)
3,3'-Dimethoxybenzidine	ND	(100,000)
7,12-Dimethylbenz(a)anthracene	ND	(100,000)
alpha,alpha-dimethylphenethylamine	ND	(500,000)
2,4-Dimethylphenol	ND	(100,000)
Dimethyl phthalate	ND	(100,000)

m-Dinitrobenzene	ND	(100,000)
4,6-Dinitro-o-cresol	ND	(500,000)
2,4-Dinitrophenol	ND	(500,000)
2,4-Dinitrotoluene	ND	(100,000)
2,6-Dinitrotoluene	ND	(100,000)
Di-n-octyl phthalate	ND	(100,000)
Diphenylamine	ND	(100,000)
1,2-Diphenylhydrazine	ND	(100,000)
Di-n-propylnitrosamine	ND	(100,000)
Ethyl methacrylate	ND	(500,000)
Fluoranthene	ND	(100,000)
Fluorene	ND	(100,000)
Hexachlorobenzene	ND	(100,000)
Hexachlorobutadiene		(100,000)
Hexachlorocyclopentadiene	ND	(100,000)
Hexachloroethane	ND	(100,000)
Hexachlorophene	NR	
Hexachloropropene	ND	(200,000)
Indeno(1,2,3-cd) pyrene	ND	(100,000)
Isosafrole	ND	(500,000)
Malonitrile	NR	
Methapyrilene	ND	(100,000)
4,4-Methylenebis (2-chloroaniline)	ND	(500,000)
Methyl methacrylate	ND	(500,000)
Methyl methanesulfonate	ND	(100,000)
2-Methylnaphthalene	ND	(100,000)
Naphthalene	ND	(100,000)
1,4-Naphthoquinone	ND	(100,000)
1-Naphthylamine	ND	(100,000)

2-Naphthylamine	ND	(100,000)
2-Nitroaniline	ND	(500,000)
3-Nitroaniline	NR	(500,000)
4-Nitroaniline	ND	(500,000)
Nitrobenzene	ND	(100,000)
2-Nitrophenol	ND	(100,000)
4-Nitrophenol	ND	(500,000)
N-Nitrosodiphenylamine	ND	(100,000)
N-Nitrosodi-n-butylamine	ND	(100,000)
N-Nitrosodiethylamine	ND	(100,000)
N-Nitrosodimethylethylamine	ND	(100,000)
N-Nitrosomorpholine	ND	(100,000)
N-Nitrosopiperidine	ND	(100,000)
N-Nitrosopyrrolidine	ND	(100,000)
5-Nitro-o-toluidine	ND	(100,000)
Pentachlorobenzene	ND	(100,000)
Pentachloroethane	ND	(100,000)
Pentachloronitrobenzene	ND	(500,000)
Pentachlorophenol	ND	(500,000)
Phenacetin	ND	(100,000)
Phenanthrene	ND	(100,000)
Phenol	2,600,000	(100,000)
2-Picoline	ND	(100,000)
Pronamide	ND	(200,000)
Pyrene	ND	(100,000)
Pyridine		(100,000)
Resorcinol	ND	(100,000)
Safrole	ND	(100,000)
1,2,4,5-Tetrachlorobenzene	ND	(100,000)

2,3,4,6-Tetrachlorophenol	ND	(500,000)
1,2,4-Trichlorophenol	ND	(100,000)
2,4,5-Trichlorophenol	ND	(500,000)
2,4,6-Trichlorophenol	ND	(100,000)

ND= Not detected; detection limits in parentheses. Reporting limits have been adjusted for sample dilution.

NR= Not recovered by this method at 100 ug/L.

(1) Cannot be separated from diphenylamine

Table 3-6

Dioxins and Furans, EPA Method 8280 [1]

Hatcher Incorporated
Sample I.D.: Reaction Water
Saukville

Project H17
CLE I.D.: H17-2

ng/L

Compound	Found	Detection Limit
Tetrachlorodibenzofurans	ND	(0.79) (12.7)*
Pentachlorodibenzofurans	ND	(4.35) (11,100)*
Tetrachlorodbenzodioxins	ND	(0.93)**
Pentachlorodibenzodioxins	ND	(5.4)**
Hexachlorodibenzodioxins	ND	(5.5)**

ND= Not detected; detection limits in parentheses.

* = See cover letter

** = Chemical interference

Note:

[1] Source: Cal Lab East Inc., Section 3, FPOR, Revision 2, 2/27/87

Table 3-7

Inorganic Parameters [1]

Hatcher Incorporated
Sample I.D.: Reaction Water Project H17
Saukville Lab I.D.: 62620-

Parameter	Units	Result
Fluoride	mg/L	ND (0.01)
Total Sulfide	mg/L	ND (0.5)
Total Cyanide	mg/L	ND (0.01)
Total Organic Halogen	ug Cl/L	32 (5)

ND= Not detected;

detection limits in parentheses.

Note:

[1] Source: Cal Lab East Inc., Section 3, FPOR, Revision 2, 2/27/87

Table 3-8

Physical Tests [1]

Hatcher Incorporated

Sample I.D.: Reaction Water Saukville

Project H17

Lab I.D.: 62620-

Parameter	Units	Result
Heat of Combustion	BTU/lb	<150
Carbon	%	15.84
Nitrogen	%	0.36
Sulfur	%	<0.03
Phosphorus	%	0.19
Fluorine	%	0.04
Chlorine	%	0.33
Bromine	%	<0.2
Iodine	%	<0.3
Viscosity	centistokes	2.02
Flash Point	°F	NF
Ash	%	<0.001

NF = No Flash below 200^0 F.
< Shows detection limit

Note:

[1] Source: Cal Lab East Inc., Section 3, FPOR, Revision 2, 2/27/87

3.2 WASTE ANALYSIS PLAN

This Waste Analysis Plan (WAP) describes the procedures that will be used to obtain chemical and physical data on the wastes to be accepted at the existing small hazardous waste storage facility and to be treated in the existing Cook Composites and Polymers hazardous waste incinerator at the Saukville Plant. The responsibility for implementing this WAP lies with the Plant Manager.

Each of the waste streams treated at the Saukville facility is well characterized as to its properties and hazardous constituents. Subsequently the analyses will be repeated yearly, or whenever a major change occurs in the waste composition.

Off-site wastes from CCP's Marshall, Texas plants will be analyzed before acceptance in the existing storage facility to ascertain compatibility with the on-site reaction water and waste solvents, the existing incinerator design, and the operating license.

This Waste Analysis Plan, therefore, has the following protocol:

- Initial waste characterization of the Saukville Plant on-site wastes with analyses repeated on an annual basis.
- Review of raw materials for OHCs before any new products are introduced into the manufacturing process

Characterization and analysis of off-site wastes received at the proposal storage facility for treatment in the existing incinerator.

3.2.1 Parameters and Rationale

The parameters for initial and subsequent annual analysis of the on-site wastes and the rationale for these analyses are identified as follows:

- Viscosity - to ensure that the waste remains a pumpable and burnable liquid
- Elemental Analysis - (including organic halogens) to determine potential acid gas generation (see Table 3-2)
- Water Analysis - to determine water content and incinerability of the water
- Heat Value - to check for significant variations in the waste composition
- Percent Ash - to check for significant variations in the waste composition that can lead to particulate generation.
- Flash Point - to determine ignitability to properly handle wastes

Off-site waste will be analyzed according to the same parameters before being accepted at the existing storage facility for subsequent treatment in the existing incinerator (see Section 12.0 of this report).

3.2.2 Test Methods

The methods for testing the parameters identified in Section 3.2.1, above and in 40 CFR Section 264.13(b) (1) are presented below. The methods may be modified per current U.S. Environmental Protection Agency (EPA) guidance or the standard of practice for analytical laboratories.

- Viscosity - Brookfield Viscometer, refer to operating manual for methodology
- Elemental Analysis (carbon, nitrogen, phosphorus, sulfur, iodine, chlorine, fluorine, and bromine) - 1980 Annual book of ASTM Standards, Part 26- Gaseous Fuels; Coal and Coke; Atmospheric Analysis. Also Method A003, Sampling and Analysis Methods for Hazardous Waste Combustion, EPA 600/8-84-002, February 1984 or its subsequent revision.
- Organic Chloride- ASTM D808-81
- Water Analysis- ASTM D3173-73
- Heat of Combustion- ASTM D-240-76
- Percent Ash- ASTM D482-80
- Flash Point- Method Number 1010, Sampling and Analysis Methods for Hazardous Waste Combustion, U.S. EPA.

3.2.3 Sampling Methods

3.2.3.1 Waste in On-Site Tanks

Solvent wastes and reaction water are sampled from the 8,500-gallon, vertical, above-ground tanks prior to injection into the existing incinerator. The tanks are 9.5 feet in diameter and 19.5 feet high. Samples are taken through taps along the side of the tank after thorough mixing to eliminate any stratification of tank contents. One-liter samples are drawn from the top, middle, and bottom of the tank and combined to form 2 similar samples for analysis.

3.2.3.2 Waste in Tankwagons

Tankwagons containing off-site hazardous waste for unloading into the existing storage facility will be sampled using a weighted bottle, EPA Method Number S003, in a manner similar that

discussed above for the waste holding tanks. One-liter samples will be drawn from the top, middle, and bottom of each tankwagon and combined to form 2 composite samples for analysis.

3.2.3.3 *Drummed Waste*

Drums containing off-site hazardous waste for unloading into the existing storage facility will be sampled with a Coliwasa sampler, EPA Method Number S001.

Drums containing adsorbent (sawdust) wastes and other drums destined for off-site disposal and/or reclamation by vendor will be sampled using a split-tube thief sampler, EPA Method S005 (see Appendix 3-A). A composite sample, based on 3 grab samples from the top, middle, and bottom of each drum, will be taken.

3.2.4 Frequency of Analysis

Detailed waste analyses for the parameters given in Section 3.2.1 of this report will be conducted once annually on the hazardous wastes stream and as required by disposal facilities for off-site shipment of other hazardous wastes. In addition, when production changes or upsets occur which could alter the characteristics of the waste stream, the Production Supervisor will notify the Plant Manager, and waste analyses will be again be conducted.

3.2.5 Additional Requirements for Wastes Generated Off-Site at Other Cook Composites and Polymers Plants

Hazardous wastes received at the small hazardous waste storage facility for transfer to and treatment in the hazardous waste incinerator from other Cook Composites and Polymers off-site facilities will be analyzed by the test methods in Section 3.2.2 of this report upon arrival at the Saukville Plant. The sampling will be done directly from the shipping containers (tankwagon or drum) using the sampling methods described in Section 3.2.3 of this report. All off-sites wastes will be held in the shipping containers, separate from the on-site Wastes, until the analyses are complete, and the wastes are verified to be compatible with the on-site reaction water and waste solvents, the incinerator design and terms and conditions required by the operating license.

NOTE: Off-site wastes only from CCP plant in Marshall Figure 4-6A. Piping & Instrumentation Diagram for Tanks 1 and 2.

3.2.6 Additional Requirements for Handling Ignitable, Reactive, or Incompatible Wastes

In keeping with CCP, Saukville□s normal operating practices, all liquid wastes are and will be assumed to be and handled as ignitable materials. For example:

- All lift trucks are diesel with air start and special mufflers. They have no electrical system for the ignition or gages.
- The electrical motors used in vicinity of ignitable materials are explosion proof.
- There are no open flames.
- A permit must be issued before any welding or cutting can be done. A second man must be on fire watch during any welding project.
- All tanks and drums are grounded when material is transferred.
- ºo Smoking signs are posted at the gates, throughout the plant, and at the present hazardous waste incinerator facility. Likewise, the storage and incinerator facility will be similarly marked.
- The area around the waste holding and incinerator feed tanks will be classified as Class I, Division 2, under NFPA 30 and NFPA 70 (National Electric Code).

No reactive or incompatible waste will be managed/treated at the incinerator Saukville facility.

3.2.7 Additional Requirements for New Products

When a new product is first manufactured at the Saukville plant, the Plant Manager and other key individuals assess whether its manufacturing process requires the use of new chemicals or will produce new chemical compounds. If new chemicals will be involved, then they are compared to the existing waste streams to identify the following:

1. Potential incompatibilities with wastes: In this case waste handling procedures are established to assure that these wastes are not mixed with the incompatible materials prior to incineration.

2. Potential OHCs: If the process can create wastes that contain halogens, sulfur, nitrogen, or regulated metals, the quantities involved are compared to the permit limits and if the quantities of such OHCs that will be released from the incinerator may exceed the permitted quantities then the new product is not produced or an alternative off-site disposal method for these wastes is found before proceeding with the process. An example of such a condition is if the chlorine content of the waste may result in excessive HCl emissions from the incinerator.

3. If the quantities of OHCs do not exceed the permitted amounts then the OHCs incinerability ranking is compared to the allowable compounds. If higher on the list (harder to incinerate) then the process is either modified to eliminate the problem OHCs,

the particular product is not manufactured at Saukville, or alternate off-site disposal means for that waste are found before proceeding.

3.2.8 Quality Assurance/Quality Control (QA/QC)

The analytical work associated with hazardous waste management will be done by an off-site testing laboratory. The laboratory's QA/QC program will serve to document the quality (i.e., accuracy and precision) of generated data, to maintain that quality of data within predetermined tolerance limits for specific sampling and analysis procedures, and to provide guidelines for corrective action if a procedure is not within control limits.

3.2.8.1 Responsibility

Responsibility for management of the QA/QC program will rest with the QA/QC officer, who will report directly to the plant manager. In addition to routine and random QA/QC checks, the QA/QC Officer will report to the corporate officers QA/QC-related laboratory activities on an annual basis.

3.2.8.2 QA Requirements

The QA/QC laboratory requirements that will be demanded of the off-site laboratory for quality assurance will be used to guide the procurement of waste analysis services. The analytical goals are summarized in the following paragraphs.

Accuracy and Precision. To achieve accuracy goals, reference materials of the highest available quality will be used for calibration and spiking. Errors due to instrument response and incomplete preparation recoveries will be controlled to the greatest extent possible so that random errors do not exceed precision goals. Precision goals will include calibration curve coefficients greater than 0.95 and results of replicate samples within 10%. These goals will be maintained for all parameters and techniques related to the incinerator operations.

Completeness. Analytical results will be obtained for at least 90 percent of the collected samples.

Representativeness. Selection of sampling sites, frequency, procedures, and equipment will assure a representative sample and is based on standardized laboratory practices.

Sampling and Analytical Procedures. Section 3.2.3 of this report details the sampling and analytical procedures and the frequency and number of replicate tests to be run for the waste feed and stack gas samples. These procedures are well documented and will be kept on file in the adjacent plant office.

Calibration Procedures and Frequency. The calibration procedures and frequency for sampling and analytical instruments will be set according to manufacturer specifications and appropriate sampling/analytical procedures. Calibration information will be retained in notebooks.

Data Reduction/Validation. Validation of data integrity, from the raw data through the data reduction phase of analysis, will be achieved by frequent verification of raw data, by storage in computer files, and by examination and tracing data through the final reported values. In addition, all associated blank, standard, and QC data will be reported with analytical results to provide an internal check on the reasonableness of the results.

Internal Quality Control Checks. Replicate and spike QC samples and calibration standards will serve as internal quality control checks. Blank samples (field, method, and reagent and solvent blanks) will be used to assess possible contamination from the field an/or laboratory. Analytical replicates will serve to check the validity of analogous samples, while spiked samples will serve to check the accuracy of sample preparation and analysis procedures.

4.1 GENERAL INFORMATION

All of the hazardous waste handling activities covered within this FPOR occur within the incinerator building and the adjacent off-site waste receiving unloading station. The incinerator building contains six waste storage tanks and the incinerator itself. Both the fully-enclosed building and the adjacent truck unloading facility are paved with monolithic concrete pads and they are sealed, bermed and diked to contain accidental spills and prevent them from contaminating soil and water. Figure 4-1 shows the floor plan of the building to scale. Figure 4-2 shows the fire sprinkler configuration and piping plan for the incinerator building. Figure 4-3 shows the emergency exits for the building.

Containers are used at the CCP Saukville Plant only for temporary storage (less than 90 days), prior to off-site shipment for reclamation and/or final disposal. Appropriate drums (dependent on waste type and/or final destination off-site) are used to temporarily hold hazardous solid wastes, hazardous liquid wastes too viscous for incineration on-site, and hazardous liquid wastes not permitted to be combusted by the incinerator.

This temporary hazardous waste storage is in Building 45, completely separate from the incinerator. See Figure 2-3 for the location. As this temporary container storage will be for 90 days or less, no further detailed information is required for this report.

While during normal operation the incinerator is maintained at operating temperature by the combustion of the waste solvent, it also contains a natural gas burner which is to bring it to up to its operating temperature (1,800°F) prior to the introduction of the hazardous waste and to supplement the waste solvents, if needed.

The incinerator and tank systems are designed to selectively pump the waste solvent and reaction water in the four waste holding tanks to the two feed tanks. Waste solvent, for example, will be selectively drawn out of each of the four holding tanks and transferred through the piping and filter system to the dedicated solvent incinerator feed tank. These two phases will then be fed to the incinerator feed tank, and then fed to the incinerator from the feed tanks through dedicated lines. The wastes will not be changed or interchanged during incineration.

4.2 MATERIAL OF CONSTRUCTION

The incinerator is a vertical carbon steel chamber lined with 4 ½ inches of firebrick rated at $3,000^0$ F backed by 2 inches of castable refractory rated at $2,300^0$ F. The floor is lined with 5 inches of castable refractory rated 3000° F backed by 4 inches of castable refractory rated at 2,300° F.

The stack consists of a carbon steel outer shell lined with 3 inches of castable refractory rated at 2,500°F (see Figure 4-4 and Appendix 4-A for additional design details). All metal parts of the system are painted with one coat of primer.

4.3 TREATMENT CRITERIA

4.3.1 Quantities and Characteristics of Waste for Incineration

The hazardous wastes to be destroyed in the incinerator result from the production of alkyds and polyester resins at the Saukville Plant and the CCP Marshall, Texas plant. The quantities of these wastes will vary widely according to production demands and operational schedule.

Fumes from the six waste management tanks and raw material storage tanks (e.g., xylene and styrene) in the process area is fed to an on-site thermal oxidizer.

The incinerator is designed to burn up to 60 gallons per hours of waste solvents, up to 180 gallons per hour of reaction water, and up to 700 cubic feet per minute of fumes. This is under the maximum design conditions of operating for 24 hour per day, 5 to 7 days per week. Constant operation under maximum design conditions is not anticipated.

The four hazardous waste holding tanks and two incinerator feed tanks will accommodate a total 51,000 gallons of combined waste solvents and reaction water. Operation of the incinerator with the tanks at full capacity is not anticipated. Maintaining the holding tanks at a considerably lower level of contained waste will be the normal operating procedure so as to allow for maximum flexibility in management of the hazardous wastes.

Section 3.1 of this report and Tables 3-1 through, 3-4, therein, give specific chemical and physical information for the wastes to be incinerated.

4.3.2 Hazardous Constituents and POHC's in Waste for Incineration

As shown Table 3-1, the hazardous constituents and Principal Organic Hazardous Constituents (POHCs) contained in the wastes to be incinerated in the incinerator are the following Table VI constituents:

Maleic Anhydride

Phthalic Anhydride

Toluene Diisocyanate

p-Benzoquinone

Methyl Methacrylate

Bis(2-ethylhexyl) Phthalate

Isobutyl Alcohol

Toluene

Phenol

NOTE: No wastes containing sulfur will be burned in the incinerator

4.3.3 General Equipment Description

4.3.3.1 Incinerator

The incinerator is a vertical liquid injection incinerator comprised of a thermal oxidizer (combustion chamber), stack, and automatic and manual controls. It is fueled by natural gas and waste solvents. Figure 4-4 gives the details of its layout and construction. Additional information can be found in Section 4.3.1 of this report.

4.3.3.2 Tanks

A series of six identical tanks (four holding and two incinerator feed tanks) manage the hazardous wastes for incineration in the incinerator. Each tank is constructed of stainless steel, 9.5 feet in diameter, 19.5 feet in height, and of an 8,500-gallon capacity. The tanks, with the exception of the #1 holding tank, are interconnected with piping and valves. Each tank has a high-level cut-off switch to prevent overfilling. The tanks are housed under roof in the incinerator building. The tanks are identical in construction. The construction detail of each tank is shown in Figure 4-5.

NOTE: The #1 waste holding tank is used as a small hazardous waste storage facility to receive off-site compatible hazardous waste from the CCP plant site in Marshall, Texas (see Section 12.0 details). Additional information and engineering drawings can be found in Section 4.3.3.

4.3.3.3 Interconnecting Piping

The hazardous waste tanks are interconnected with a system of piping and valves that allow for maximum flexibility in waste management control. The piping runs through a network of headers fitted with automatic valves to allow easy direction of wastes from tank to tank and/or the incinerator. See Figures 4-6, 4-6A, 4-6B, and 4-6C for the incinerator and tank system Piping and Instrumentation Diagrams (P&IDs). Figure 4-7 is a list of the standard symbols used in Figures 4-6.

4.3.4 Detailed Treatment System Description

The various manufacturing processes at the Saukville Plant produce reaction water and various waste solvents which are piped directly to the holding tanks in the incinerator building. Liquid hazardous wastes from CCPs Marshall Texas manufacturing location are delivered by tankwagon and/or drum to the truck unloading facility immediately adjacent to the incinerator building. These wastes are pumped directly to the #1 holding tank as a small hazardous waste storage facility. The off-site wastes are then transferred directly to the incinerator feed tanks (#5 or #6) as soon as is possible for priority incineration. The waste management tanks are identical 8,500-gallon tanks connected by various valves and piping for allowing maximum flexibility in managing the contained liquids. Generally, the four holding tanks hold the reaction water and waste solvents in varying amounts and mixtures with only the #1 holding tank receiving off-site wastes. The two incinerator feed tanks are used to hold the reaction water and waste solvents prior to incineration.

The incinerator is brought up to operating temperature by burning natural gas. When the incinerator reaches the proper operating temperature (1,800°F), the waste solvents are introduced through the specially designed combination burner.

The reaction water is injected into the incinerator just above the combination burner through an atomizing nozzle (see Figure 4-8). The incineration temperature effectively destroys the hazardous constituents of the reaction water. Because of the inherent purity nature of the wastes and the excellent combustion conditions in the stack, the emissions do not require any further treatment prior to their release to the atmosphere. See Section 5 reference for test data demonstrating the quality of the emissions and Section 13 further demonstrating the fact that the system is highly protective of health and of the environment.

The gases from the combustion process are monitored in the stack for oxygen, carbon monoxide, temperature, and flow rate. Also, the incinerator internal temperature is monitored. Operation outside of established acceptable limits will cause the built-in safety equipment to cut off waste feed and/or fuel to the incinerator. Any interruption in either fuel or waste feed (and in the future, fume feed) will also automatically cause the safety equipment to shut down the other component(s) of the incinerator. Refer to Section 4.3.1 for more detailed information concerning incinerator design and operation.

4.3.5 Description of Waste Management in Tanks

The incinerator building will house six identical 8,500-gallon tanks connected by valves and piping for the management of the waste solvents and reaction water for incineration. See Figures 4-5, 4-6A, 4-6B and 4-6C for details. The #1 waste holding tank is a small hazardous waste storage

facility to receive off-site waste from other CCP plant sites (See Section 12.0 of this report for details).

4.3.5.1 Overflow Prevention System

Each of the six hazardous waste tanks has a high-level sensor which will activate an indicator light on the centrally located incinerator control panel. This same sensor will also activate an automatic cut-off to prevent tank overfilling. See Figures 4-6A, 4-6B, and 4-6C for details.

4.3.5.2 Automatic Cut-Offs

Activation of the high-level sensor on each hazardous waste tank will do the following: 1) automatically shut the valves that control the waste feed to the tank and 2) if it is the #1 waste holding tank, will shut off the unloading pump from the exterior truck unloading station. In either case, an alarm will also sound. Once the alarm is triggered, the flow of waste has to be manually redirected to another tank or to another part of the hazardous waste treatment system (e.g., back to a tankwagon in the exterior truck unloading station).

NOTE: The #1 waste holding tank as the small storage facility will accept an unloading limit of 6,500 gallons per shipment (see Section 12.4.2.2.2 of this report for a detailed explanation.)

4.3.5.3 Piping Network

The interconnecting piping between the six hazardous waste tanks will all run through a network of piping headers fitted with automatic valves. These valves are used to direct the waste solvents and/or reaction water to any of the tanks or the incinerator. However, the #1 waste holding tank, as the small storage facility, will receive off-site wastes. These off-site wastes are routed directly to the solvent and/or reaction water feed tanks for priority incineration.

4.4 DETAILED ENGINEERING DESIGN INFORMATION

4.4.1 Incinerator

Figure 4-4 is a detailed description of the incinerator. Waste solvents and fumes are fired through a combination (multi-fuel) burner located near the base of the incinerator. Reaction water is injected at the two points in the chamber above the combination burner. The reaction water is injected through an air-atomized nozzle whose detail is shown in Figure 4-8. The method used to inject these wastes into the combustion chamber and the burner creates an extremely high turbulence, producing rapid mixing of the wastes solvent and of the aqueous waste.

The incinerator is sized for a maximum heat release of 8,900,000 Btu/hr. The retention time of the gases is 1 second at 1,800°F. Primary temperature control is maintained by manually modulating the flow of the aqueous waste. Fine temperature control is maintained by automatic modulation of the solvent waste feedrate and (if used) the natural gas feed rate.

4.4.1.1 Manufacturer's Name and Model Number

The hazardous waste incineration system for CCP is designed and manufactured by the John Zink Company, Tulsa, Oklahoma. The design is unique and carries no model designation. This system is designed to operate according to the parameters given in Table 4-1. The design conditions for the incinerator are given in Table 4-2a (waste and fuel properties and system parameters) and Table 4-2b (flue gas properties).

Table 4-1. Incinerator Operating Parameters

WASTE STREAMS	
Waste Solvents	
Material:	Xylene, toluene, waste solvents and other hydrocarbons
Heating Value:	18,000 Btu per pound
Burning Rate:	35 to 60 gallons per hour
Burning Cycle:	24 hours per day; 5 to 7 days per week (maximum design conditions)
Reaction Water	
Material:	Organic acids (pH between 2 and 4.5)
Heating Value:	150 to 3,000 Btu per pound
Burning Rate:	60 to 180 gallons per hour
Burning Cycle:	24 hours per day; 5 to 7 days per week (maximum design conditions)
Fumes	
Material:	Xylene and styrene fumes

Table 4-1. Incinerator Operating Parameters	
Heating Value:*	40 to 230 Btu per cubic feet
Burning Rate*:	20 to 700 cubic feet per minute (cfm)
Burning Cycle:	24 hours per day; 5 to 7 days per week (maximum design conditions)
Utilities	
Auxiliary Fuel:	Natural gas
Pilot Fuel:	Natural gas
Electrical Requirements:	220 volts, 3 phase, 60 hertz, grounded bus
Compressed Air:	130 psig
Steam:	130 psig
Instrument Air:	25 psig
Temperatures	
Warm-up Temperature:	1,800°F
Operating Temperature:	1,800°F
High Temperature:	1,900°F
Excess Temperature:	2,000°F
Low Temperature:	1,750°F
Time Delay Settings	
Purge Timer	3 minutes
Ignition Timer:	10 seconds
Pilot shut-off Timer:	10 seconds

NOTE: The normal fume flow rate is between 20 and 200 cfm. At this flow rate, the heating value of the fumes is between 170 and 230 Btu per cubic foot. During the fume surge (once a day for each thinning tank), the flow increases to 700 cfm. The heating value at flow rate is 40 Btu per cubic foot.

NOTE: Waste solvent and reaction water waste streams are filtered to 40 mesh before entering the incinerator.

Table 4-2a

Incinerator Case Flow Rate, Input Stream

	Design Case #1 Maximum Waste Flow	Design Case #2 Maximum Flue Gas Flow	Design Case #3 Normal Reaction Water Flow	Design Case #4 Normal Aqueous Waste Flow
Reaction (Esterification) Water				
H (BTU/lb)	152	152	152	152
W (lb/hr)	2,500	2,500	2,500	2,500
T (°F)	70	70	70	70
Q68 (MM BTU/hr)	0.38	0.38	0.38	0.38
Atomizing Air for Water Feed				
T (°F,)	100	100	100	100
W (lb/hr)	750	750	750	750
V (SCFM)	163	163	163	163
Combustion and Quench Air				
T (°F)	100	80	80	80
W (lb/hr)	750	17,070	3000	3842
V (SCFM)	163	3,730	2,254	17676
Solvent Waste				
H (BTU/hr)	17,614	None	17,614	17,614
T (°F)	68		68	68
W (lb/hr)	650		528	256
Q68 (MM BTU/hr)	11.45		9.3	4.5
Atomizing Air				
Natural Gas				
MM BTU/hr	None	12.41	None	None
lb/hr		583		

Table 4-2b

Incinerator Case Flow Rates, Operating Conditions, and Gas Properties

	Design Case #1 Maximum Waste Flow	**Design Case #2 Maximum Flue Gas Flow**	**Design Case #3 Normal Reaction Water Flow**	**Design Case #4 Normal Aqueous Waste Flow**
Total Heat Input (MMBTU/hr)	13.51	5.65	11.06	13.39
Combustion Chamber Exit Gas Temperature (°F)	1,800	1,800	1,800	1,800
Gas Residence Time (sec)	1.24	1.13	1.65	1.16
Flue Gas Composition (percent)				
CO_2	7.95	5.65	8.67	6.97
H_2O	24.64	27.76	31.5	20.03
N_2	64.82	63.95	56.98	65.43
O_2	2.92	2.64	2.85	7.57

4.4.1.2 Type of Incinerator

The incinerator is a vertical cylinder, liquid injection incinerator. It consists of a thermal oxidizer, stack, and automatic and manual controls. The incinerator description provided by the John Zink Company is presented in Appendix 4-A. The detailed design drawings for this system are presented in Figures 4-4, 4-7, 4-8 and 4-9.

4.4.1.3 Linear Dimensions

The thermal oxidizer is a vertical cylinder, 4 feet 11-1/2 ID by 23 feet long. The stack is 2 feet 2-1/2 inches inner diameter (ID) by 2 feet 9 inches outer diameter (OD) with a discharge height 60 feet above the thermal oxidizer base.

4.4.1.4 Cross-Sectional Area of Combustion Chamber

The cross-sectional area of the thermal oxidizer combustion chamber is 19.3 ft2.

4.4.1.5 Nozzle and Burner Design

One combination natural gas/waste solvent, air atomized, forced draft burner is supplied with the incinerator. This burner is custom design by the John Zink Company for this incineration and carries no standard model number. This burner uses a John Zink model EA atomizer (or equal) to fire the waste solvent into the combustion chamber (see Figures 4-3 and 4-8 for details).

4.4.1.6 Changing Waste During Incineration

Presently, the waste to be burned as fuel in the incinerator is waste solvent. When the waste solvent flow is insufficient to maintain temperature, natural gas automatically is fired through the specially designed combination burner.

This waste treatment system is designed to selectively pump the waste solvent and reaction water in the four waste holding tanks to the two feed tanks. Waste solvent, for example, is selectively drawn out of each of the four holding tanks and transferred through the piping and filter system to the dedicated solvent incinerator feed tank. Likewise, the reaction tank is transferred to its incinerator in feed tank. These two phases then are fed to the incinerator feed tank. These two phases are then fed to the incinerator from the feed tanks through dedicated lines. The wastes will not be changed or interchanged during incineration.

4.4.1.7 Material of Construction

The thermal oxidizer is a vertical carbon steel chamber lined with 4 ½ inches of firebrick rated at 3,000°F backed by 2 inches of castable refractory rated at 2,300°F. The floor is lined 5 inches of castable refractory rated 3,000°F backed by 4 inches of castable refractory rated at 2,300°F.

The stack has a carbon steel outer shell lined with 3 inches of castable refractory rated at 2,500°F (see Figure 4-4 and Appendix 4-A for details). All metal parts of the system are painted with one coat of primer.

4.4.1.8 Auxiliary Fuel System

Natural gas is used as auxiliary fuel in the combination burner supplied with the thermal oxidizer. Auxiliary fuel is used to bring the incinerator up to operating temperature (1,800°F) and to supplement the waste solvents and fumes used as fuel to maintain that temperature to properly oxidize the reaction water. See Figures 4-3, 4-4, and 4-6.

4.4.1.9 Capacity and Type of Prime Mover

The incinerator has no forced induction system. There are multiple inputs, including waste and fuel feeds, atomizing air, fumes, and combustion air. By far the greatest contribution to flow contribution to flow is the combustion air. While the actual amount of combustion air will fluctuate with demand, the design capacity is 1,900 scfm max. (at 8" water). The fan is a single stage centrifugal fan with a 7.5 hp motor.

4.4.1.10 Automatic Waste Feed Cut-Off System and Emergency Shutdown

Instruments will monitor process conditions; provide data to assure compliance with regulatory requirements; and assure appropriate process responses and control, operational flexibility, and safety interlocking and shutdown. The safety control circuits are summarized in Table 4-3. This table describes the automatic waste feed cut-off system related to carbon monoxide, oxygen, waste feed rate, combustion temperature, and combustion gas flow rate, etc.

Table 4-3

Safety and Waste Feed Cut-Offs for Incinerator

I. SAFETY CIRCUITS

A. High temperature in thermal oxidizer (1,900° F).
   1. Reaction water flow shuts off.

B. Excess temperature in thermal oxidizer (2,000° F).
   1. Fuel/solvent flow shuts off.
   2. Burner shuts off.
   3. All air dampers open.
   4. Alarm horn is energized.

C. Loss of burner
   1. Fuel/solvent flow shuts off.
   2. Reaction water flow shuts off.
   3. Burner air damper opens.
   4. Reaction water air damper opens.
   5. Alarm horn is energized.

D. Loss of burner air will reset the purge timer.
   1. Burner will shut off (see above).
   2. Thermal oxidizer start pushbutton must be operated to repurge the system and re-ignite the burner.
   3. Alarm horn is energized.

E. Loss of fuel pressure will de-energize (close) the safety shut-off valve.
   1. Burner flame will go out.
   2. Shutdown per C above.
   3. Alarm horn will energize.

F. The following streams are shut down upon loss of supply pressure.
   1. Waste solvent.
   2. Atomizing air (will shut down all air atomized streams).
   3. Reaction water.

G. If the carbon monoxide (CO) levels exceed high level (100 ppm), an alarm sounds.

H. If the oxygen (O_2) level drops below the low level, an alarm sounds.

I. If the oxygen (O_2) level drops below the low-low level, the reaction water flow shuts off, and the combustion air dampers open.

Table 4-3 (Continued)

II. WASTE FEED CUT-OFF CIRCUITS

A. Liquid waste feed rates exceed set point on waste solvent or reaction water flow controllers.
   1. Alarm horn will energize.
   2. Waste solvent flow shuts off.
   3. Auxiliary fuel starts.
   4. Reaction water flow shuts off..

B. Combustion gas flow exceeds set point on flow monitor.
   1. Alarm horn will energize.
   2. Waste solvent flow shuts off.
   3. Auxiliary fuel starts.
   4. Reaction water flow shuts off.

C. Temperature drops below 1,750°F (for greater than 2 minutes).
   1. Alarm horn will energize.
   2. Waste solvent flow shuts off.
   3. Auxiliary fuel starts.
   4. Reaction water flow shuts off.

D. Carbon monoxide exceeds 100 ppm (for greater than 1 minute).
   1. Alarm horn will energize.
   2. Waste solvent flow shuts off.
   3. Auxiliary fuel starts.
   4. Reaction water flow shuts off.

- Summarized from John Zink Company Burner Management Safety Interlocks on pages 7 and 8 of the company□s report given in Appendix 4-A.

NOTE: Following any waste feed cut-off event, the cause of the cut-off is determined and repaired before the hazardous waste streams are reintroduced into the incinerator.

4.4.1.11 Stack Gas/Pollution Control Monitoring Equipment

The stack gas temperature, oxygen (O_2), carbon monoxide (CO), and flow rate, all of which are continuously recorded. The preferred instrument vendors are listed in Table 4-4. No other pollution control monitoring equipment is included. No solid or halogenated wastes is burned in this incinerator; therefore, very low particulate and HCl emissions is produced, and this type of monitoring equipment is not needed.

4.4.1.12 Location and Description of Temperature, Pressure, and Flow Indicators and Controls

The control instruments described in Table 4-4, or their equivalents, are used at the facility. Specifications for these instruments are given in Appendix 4-C. The locations of all sensors are given in Table 4-5. The instruments measure the incinerator's flue gas exit temperature, the concentrations of O_2 and of CO in the incinerator exhaust stack. The instruments for measuring the flow of the waste solvents, the reaction water, the combustion air, the supplementary natural gas, and the atomizing air, are located in the individual dedicated feed lines delivering each of these measuring items to the incinerator (see Figure 4-5).

4.4.1.13 Sampling and Monitoring

The gaseous emissions produced by the combustion process are continuously monitored by instruments in the stack. The various pieces of monitoring equipment and their locations are given in Tables 4-3 and 4-4.

Two 3-inch ports 6 feet below the top of the stack and spaced 900 apart will provide access for monitoring and/or sampling. Sampling procedures for incinerator emissions (should they be needed) would be similar to the procedures outlined for the Trial Burn in Section 5.4.2 of this report. Sampling methods for the waste streams are discussed in relation to the hazardous waste tanks in Section 3.2.3 of this report. Figure 4-6D is the piping and instrumentation diagram for the continuous process and emission monitoring and interlock controls.

Table 4-4. Preferred Vendors for Monitoring Instruments*		
	Preferred	**Alternate**
Carbon Monoxide Analyzer	Infra Red Model AR-500R Manufactured by Anarad	Teledyne Model 9700 Thermox
Oxygen Analyzer	Cell type model 326 AI-20 manufactured by Teledyne	Teledyne Model 9700 Thermox
Flue Gas Flow	Annubar Model No. ANR 75	----
Waste Solvent Flow	Barton-Floco PD Meter FL-10-BAEC Complete with Floco 308 Pulse Transmitter and Honeywell Series 1400, Model 1406 Valve	------
Reaction Water Flow	Barton-Floco PD Meter FL-10-BAEC Complete with Floco 308 Pulse Transmitter and Honeywell Series 1400, Model 1406 Valve	-------
Thermal Oxidizer Gas Exit Temperature	Thermo Sensor Corp. Type K Thermocuple PN-494-3647-18-K Honeywell UDC-300 Controller	Marlin Mfg. Corp. Type K Thermocouple

* Detailed specifications on all monitoring instruments are given in Appendix 4-C.

Table 4-5. Location of Sensor Instruments

	Type	Drawing Location Shown on Drawing Number (Figure Number)
1. Thermal Oxidizer gas exits temperature	Type K Thermocouple	202, 501** (4-4, 4-6)
2. Waste solvent flow rate	Positive Displacement Meter	501 (4-6C, 4-6)
3. Reaction water flow rate	Positive Displacement Meter	501 (4-6C, 4-6)
4. Combustion air flow rate	Venturi Tube or Flow Nozzle	501 (4-6)
5. O_2	See Table 4-4	501 (4-6)
6. CO	See Table 4-4	501 (4-6)
7. Flue gas flow	Averaging Pitot Tube***	501 (4-6)
8. Natural gas flow rate	Orifice Assembly with D/P cell	501 (4-6)
9. Atomizing Air	Orifice Assembly with D/P cell	501 (4-6)

* Detailed specifications on all monitoring instruments are given in Appendix 4-C.

** Symbols are defined on Drawing Number 0324, Figure Number 4-6.

*** Constructed of RA 330 Stainless steel. See detailed specifications in Appendix 4-C.

4.4.2 Treatment Facility Building

4.4.2.1 Building Layout and Description

As shown in Figures 4-1 and 4-2, the small hazardous waste storage and incinerator facility is housed in a specially designed building. This building will provide a completely self-contained hazardous waste treatment facility fully equipped with safety monitoring equipment (including a fume monitor for the building interior), fire control equipment (i.e., overhead sprinkler system and

firehose), a ventilation system, and waste management equipment (i.e., the tank interconnecting piping system). This building also provides protection of the hazardous waste treatment facility from the outside elements, as well as protection of the surrounding environment from any accidental spills.

The six hazardous waste tanks (Identified as #1 through #6) occupy the majority of the building space.

More than adequate space has been designed into the building floor plan for monitoring and repair of the equipment, if necessary, and for access and maneuvering during emergency response (see Figure 4-1). For added safety, the incinerator itself is housed in a separate room in one corner of the building, isolated from the hazardous waste tanks by a firewall.

4.4.2.2 Run-On Controls

The incinerator building has been designed and located on a topographic high to prevent run-on from the surrounding area. These features are described in detail in Section 4.4.3.7.4 of this report.

4.4.2.3 Run-Off Controls

The floor in both the tank room and incinerate room is sloped to a sump. Any spilled materials will flow to and be contained in these sumps. All door sills are well above the sump level to prevent any spilled material from leaving the building. Sections 4.4.3.7.1 through 4.4.3.7.3 of this report describe these features in detail.

4.4.3 Tanks

Six tanks are used to store the waste for the incinerator. Their functions are described in Section 3.1 and in Section 12.0.

4.4.3.1 Manufacturer's Name and Model Number

The six tanks for management of the waste solvent and reaction water in the small hazardous waste storage and incinerator facility are specially designed for this application by Triad Engineering Incorporated of Milwaukee, Wisconsin. Therefore, they do not carry a particular model number. They meet or exceed the Hazardous Waste Federal Tank Standards set forth in the July 14, 1986, Federal Register. These tanks were built and installed by Felker Brothers Corporation, Marshfield, Wisconsin.

4.4.3.2 General Description

Each of the six tanks has a capacity of 8,500 gallons. The reaction water and the waste solvent each have a separate feed tank directly connected to the incinerator. Prior to being selectively pumped for feed to the incinerator, the reaction water and waste solvents are stored together in mixtures of varying proportion in the remaining four tanks. With exception of Tank #1, (the tank for holding off-site waste) the tanks are to be interchangeable and interconnected by a network or pipes (see Figures 4-6A, 4-6B, 4-6C, 4-12 and 4-13 for details). This allows for maximum storage flexibility and control. Total hazardous waste storage capacity is 51,000 gallons.

The hazardous waste tanks are 9.5 feet in diameter and 19.5 feet high. The tanks are designed for a maximum liquid height 18.25 feet (specific gravity of 0.7 to 1.16). However, a much lower (but widely variable) liquid level in all tanks is anticipated. See Figures 4-5, 4-6A, 4-6B, and 4-6C and Appendix 4-C for task design and foundation details and for other information on the tanks.

4.4.3.3 Tank Venting

The tanks are equipped with emergency and conservation (breather) vents to allow each to breathe during normal operation of the mechanical system. The designed venting pressures are 1 psig for the emergency vents and 3-1/2 oz/ in^2 for the breather vents which are far below the tank design of 10 psig. Venting calculations are contained in Appendix 4-C. The vent ducts are constructed of non-leaking mechanical joint piping and fittings. All vents are ducted to the plant's fume thermal oxidizer system which is permitted and regulated under Wisconsin's Clean Air regulations.

4.4.3.4 Materials of Construction

The tanks are built to API specification ACI-650, 1985 and each is constructed of 3/16-inch thick No. 304L stainless steel mounted on reinforced concrete footings. See Appendix 4-C for details.

4.4.3.5 Tank Corrosion and Erosion

All six of the hazardous waste tanks are located completely within the fully enclosed building and, therefore, will not be subject to external corrosion factors. In addition, the tanks are properly painted to control rusting and to maintain their general appearance. Their appearance would make any leaks or corrosion immediately apparent during a visual inspection.

The contents of each of these types of tanks are non-corrosive and completely compatible with each tank□s materials and mode of construction. Therefore, allowance for corrosion has been made. The calculated required tank wall thickness for the hazardous waste tanks is 3/32 of an inch (see Appendix 4-C for the tank design calculations), but construction is of a minimum of 3/16-inch thick materials. Once every five years, the hazardous waste tanks are emptied, cleaned, inspected, and tested as specified in Section 7.3.2.

The hazardous waste tanks will potentially contain varying amounts of the following Table VI constituents:

- Maleic Anhydride
- Phthalic Anhydride
- Toluene Diisocyanate
- p-Benzoquinone
- Methyl Methacrylate
- Bis(2-ethylhexyl) Phthalate
- Isobutyl Alcohol
- Toluene
- Phenol

4.4.3.6 Description of Tank Surrounding Area

The six hazardous waste holding tanks (including the #1 waste holding tank) are housed inside the hazardous waste incinerator building, completely under roof and completely within the tank containment system described in Section 4.4.3.7, below. The tank room is separated from the incinerator room by a fire wall. The area of the tank room is fully covered by a water sprinkler system for fire control (see Figure 4-2).

The storage tank building ventilation system has been designed to change the complete air volume in the room four times per hour. Under normal condition, ¾ of the air movement is recirculated as heated air for economizing the system during winter months; the room needs to be heated due to the installation of a wet sprinkler system. Fume monitors are installed at the entrance of the air return duct openings to monitor the air quality of the room. These monitors will automatically energize the heating, ventilation, and air conditioning (HVAC) emergency venting system to bring in 100 percent fresh air and exhausting the explosive air. The HVAC system is designed to operate continuously. As a backup system designed for use during maintenance of the HVAC system, additional fans and exhaust dampers are located in the room and operated as required.

The four receiving tanks (as opposed to the two incinerator feed tanks) are accessible from a multi-level system of steel platforms and stairs.

4.4.3.7 Tank Containment System

All six hazardous waste holding tanks (including the #1 waste holding tank as a small hazardous waste storage facility) are housed under roof in a 59-foot by 68.3-foot, fully enclosed building on an impervious concrete floor designed to contain a spill of 9,259 gallons, more than equivalent to the contents of one full tank (see Appendix 4-B for calculations).

General Description: The floors in the incinerator building are constructed of concrete from monolithic pours. The floor in the tank room will slope to drain to a sump. All joints and joint treatment are above the containment level. Thus, the floors will form an impermeable containment for any waste solvents and reaction water that might be spilled. See Appendix 4-B.

The tank room floor has sufficient load-bearing capacity to carry the weight of all six tanks fully loaded. Also, all floors in the incinerator building have foundations designed to minimize cracking due to the effects of frost heave. Detailed calculations related to building floor design are presented in Appendix 4-C.

Containment System Drainage: As shown in Figure 4-1 and Appendix 4-B, the floors in both the tank room and the incinerator room is sloped to drain to a sump. The sump in the tank room (the area most susceptible to hazardous waste spills) is piped to the building exterior to facilitate pump removal of any accumulated waste spillage. (This pipe is constructed to prevent siphoning of wastes from the sump to the outside.)

A spill and fume monitoring device is installed in the floor sump to produce a visual and audible alarm and override the control functions of the air handling unit to provide 100 percent replacement with outside air.

The tank room floor accommodate a large volume of spilled wastes (see below). Also, all tanks are supported on steel legs to hold them well above the level of any spillage (see Figure 4-5 and Appendix 4-B). All pumps, fans, and similar equipment are equipped with explosion proof motors and are elevated above the possible spillage level of the floors in the incinerator building.

Containment System Capacity: As shown by the calculations in Appendix 4-B, the spillage capacity of the tank room floor is 9,259 gallons. This is in excess of the volume of any one of the identical tanks in this room (8,500 gallons) and, therefore, complies with the capacity requirement of NR 181.43(6)(d). The floor in the room is sloped to a sump with a 60-gallon capacity.

Containment of run-on is not a factor, as both the tank and incinerator rooms are totally under roof. (Run-on control is discussed in the next section).

Control of Run-On: The site's elevation is 769.5 feet (above mean sea level [MSL]). As shown in Figures 2-3 and 4-1, this location is the highest in the immediate area. The paved aprons on all sides of the incinerator building slope away from the walls. All door sills are curbed and ramped

to contain spillage but allow wheeled entry. The roof is equipped with a gutter system to catch precipitation and direct it away from the building.

Removal of Liquids from Containment System: Should spillage occur, the liquid will flow towards the sump. The sump is equipped with a pump that transfers it through the sump exterior access pipe into drums or a tankwagon, depending on the volume of the spill.

If volatile fumes are present in the building as a result of the spill, the explosion monitor alarm will sound. The buildingÕs ventilation system is automatically activated and operated until a safe atmosphere in the building is obtained. The floor area will then be cleaned by rinsing and the rinsate added to the spilled material . After spill cleanup, as specified in the Contingency Plan, Section 9.0 of this report, the temporarily stored wastes and liquid cleanup residues is returned to one of the holding tanks in the incinerator building.

Description of Piping: The piping details are presented in Figures 4-6A, 4-6B, and 4-6C. The piping is installed according to procedures described in ANSI STD. B 31.3 ▪etroleum – Refinery Piping and B-31.4 Ŗiquid Petroleum Transportation Piping System, as applicable. The objective of this standard is to ensure proper piping supports and designs to limit stress or excess vibration which could result in failure of the auxiliary system.

Inspections: The piping, pumps, fittings and tanks are visually inspected daily for signs of leakage as well as the following:

1. weld breaks;
2. punctures;
3. dents;
4. cracks;
5. corrosion;
6. other structural damage or inadequate construction and/or installation

The liquid incinerator at the Saukville Plant was thoroughly tested prior to receiving FPOR final approval and the operating license from WDNR and the RCRA permit from the U.S. EPA. The test report presented in Appendix 5-A clearly demonstrated full compliance with all applicable regulations and that the system was operating below the applicable feed rate screening limits. Since that time the waste treated by the incinerator has remained substantively unchanged. The incinerator was only modified in the following two ways; both modifications reduced particulate emissions even further:

- Eliminated the use of fuel oil as a supplemental fuel in favor of natural gas. This inherently caused a reduction in regulated emissions such as particulate and sulfur oxides.
- Eliminated the introduction of fumes from storage and process units to the incinerator. This change reduced the introduction of certain VOCs to the combustion chamber and reduced particulate emissions by substantially decreasing refractory degradation.

With these changes, the incinerator's operation substantially approached that of CCP's incinerator at our Chatham, Virginia plant, an incinerator which is made by the same manufacturer and design as the incinerator in Saukville. The CCP plant in Chatham also manufactures the same types of products as the Saukville Plant; it produces the same type of wastes that are treated in the Saukville incinerator. From an engineering point of view, the Saukville incinerator is essentially a twin of the Chatham incinerator.

The CCP Chatham liquid incinerator, operating under substantially the same conditions as the Saukville incinerator, is now operating was tested by Entropy, Inc. in June, 1995. The results of these tests are presented in Appendix 5-B and they confirm that the emissions from the unit are well below regulatory limits and are protective of health and of the environment.

Security for the CCP Saukville Plant is provided by 24-hour surveillance, a perimeter fence with gates, and ample site lighting. The base station for a plant-wide public address system is located in the Plant Production Office. Also, a telephone system provides communication both within and outside the hazardous waste small storage and incinerator facility. Because the facility is small and everyone is acquainted with each other employees are not normally required to show identification cards; however, employees and all visitors are issued identification and must show it on demand. All personnel are trained to report the presence of any unauthorized person(s).

6.1 TWENTY-FOUR HOUR SURVEILLANCE SYSTEM

Cook Composites and Polymers maintains 24-hour security at the Saukville Plant on weekends and holidays. The site is totally fenced so there is no risk of anyone inadvertently walking onto the site. All personnel are trained to report the presence of any unauthorized person(s).

6.2 BARRIER AND ENTRY CONTROL

Except for the parking area adjacent to Railroad Street, the entire facility is enclosed within an 8-foot-high chain-link fence topped with three strands of barbed wire. There are two normally used access gates which are open when the facility is in operation. They are located on the north side off Railroad Street and on the south side off Linden Street. There are four other gates that are normally locked. For example, the gate across from the railroad siding is locked except when receiving or shipping a railroad carload. The normally locked gates are also considered emergency exit gates. (See Figures 2-3 and 4-3 for location of all gates).

At the main gate adjacent to Railroad Street are a telephone and instructions for all visitors, truck drivers, etc. to call the operator and state their business before entering the plant site. All gates are lock when the plant is not operating, usually on weekends. During this period there is continuos surveillance of the facility by a 24-hour security guard.

The gates are locked with Medeco padlocks. Because of the locking mechanism of these locks, only the Medeco Company can make duplicate keys. This is done only upon authorization of the Saukville plant management.

6.3 WARNING SIGNS

"Danger- Unauthorized Personnel Keep Out" signs are posted at the access gates. Also, "No-Smoking" signs are posted at the gates, throughout the plant, and in the present hazardous waste treatment areas. "No Smoking" signs are also posted in the small storage and incinerator facility.

7.1 GENERAL INSPECTION REQUIREMENTS

The Cook Composites and Polymers hazardous waste management personnel conduct all routine inspection of the hazardous waste small storage and incinerator facility equipment for malfunctions, structural deterioration, operator errors, and discharges that could cause or lead to the release of hazardous waste constituents and adversely affect the environment or human health.

The #1 waste holding tank will function as a hazardous waste small storage facility (described in Section 12.0 of this report). This storage facility is an integral part of the incinerator under the tank inspection program for the incinerator facility described in this section. The inspection frequencies of this program meet the requirements of Sections NR 181.43(6)(a) and 181.43(7)(m) and (o) as pertains to a small hazardous waste storage facility.

7.2 TYPES OF PROBLEMS AND INSPECTION FREQUENCY

Table 7-1 presents the frequency schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, operating and structural equipment, and auxiliary equipment. These items prevent, detect, or respond to environmental or human health hazards. Provided with each item is a list of problem conditions which might be encountered.

7.3 SPECIFIC INSPECTION

7.3.1 Container Inspection

Solid hazardous wastes, wastes too viscous for the incinerator, and wastes not licensed for the incinerator are drummed, properly labeled, and stored temporarily on-site in Building 45 for less than 90 days prior to off-site shipment for incineration or final disposal. A visual inspection of these containers is performed during at least one daily shift as shown in Table 7-1. During these inspections the containers are checked for proper storage (e.g., properly labeled, covers in place), signs of leaking, and container deterioration. Also, the surrounding storage area are inspected for signs of container leakage and any deterioration in the confinement structure (e.g., the integrity of the building□s concrete floor). These inspections are documented on the appropriate forms shown in Appendix 7-A and kept on file for three years.

Tank inspections are recorded on the pertinent forms shown in Appendix 7-A and kept on file for three years.

Table 7-1

Inspection Schedule

Items	Procedure	Frequency	Conditions
Tanks and Surrounding Tank Area*	Visual	Daily**	Waste levels, overflow control equipment and pressure gauges working, and surrounding area for evidence of leakage, leaks, tank corrosion, tank and containment structure deterioration, interconnecting piping condition
	Mechanical	Every 5 years	Wall thickness, internal corrosion
Containers and Surrounding Area	Visual	Daily**	Proper storage, leaking container, container and surrounding area deterioration
Pumps	Visual	Daily**	Leaks, vibration, bearing and seal condition
Fans	Visual	Daily**	Vibration
Sensors and Monitoring Equipment	Electro-mechanical	Weekly	Operability
	Electronic	Annually	Accuracy of calibration
Process equipment	Visual	Daily**	Physical conditions, operability

* This tank inspection includes the #1 waste holding tank as the hazardous waste storage facility as well as a component of the incinerator system.

** These items are inspected during at least one shift per day. There are normally 3 8-hour shifts per day, 5-7 days per week.

Table 7-1

Inspection Schedule (Continued)

Items	Procedure	Frequency	Conditions
Incinerator*	Visual, Optical	Annually	Refractory condition
Incinerator Emergency Shutdown System	Mechanical	Annually**	Operability of each component of the system
Incinerator, General Condition	Visual	Daily**	Leaks, noises, instrument readings, adverse operating conditions
Emergency Equipment**	Visual	Monthly	Operability, inventory complete
	Fire extinguishers	Annually	Operability, recharge as needed
Perimeter Fence and Gates	Visual Mechanical	Weekly	Integrity of fence and gates, operability of locks and gates
Telephone, Public Address, and Alarm Systems and Pagers	Mechanical	Weekly	Operability, sufficient auditory level

* The operational conditions, i.e., temperature, CO level, fuel feed, and residence time are measured continuously as described in Section 4.0. All pumps, fans, etc. are referred to in this table.

**These items are inspected during at least one shift per day. There are normally 3 8-hour shifts per day, 5-7 days per week.

*** See Table 9-2 for a detailed listing of Emergency Equipment.

7.3.2 Tank Inspection

At least daily (during at least one shift per day) the hazardous waste facility operator checks the overflow prevention system on all six hazardous waste holding tanks. As a first step in the inspection, the emergency pump cut-off and plant feed-line valve cut-off are activated for each tank to ascertain their working status. At the same time the operator records the various waste levels in all hazardous waste holding tanks and the incinerator feed tanks. The facility operator then inspects the general tank area. Specifically, he looks for signs of material failure (i.e., cracking or corrosion), leaky gaskets or valve packing (i.e., wet spots on the floor), and overflows resulting from failure of the overflow prevention system.

On a weekly basis, a thorough visual examination is conducted of the hazardous waste holding tanks, the incinerator feed tanks, and the interconnecting piping associated with the tanks, for any leakage and signs of corrosion. During this inspection, the steel tanks and the surrounding concrete containment system are also checked for any deterioration which may lead to possible release of hazardous wastes to the outside environment.

The results of these inspections and the completion of any needed repairs are noted on the forms shown in Appendix 7-A and are kept in a three-ring binder designed to accommodate a year□s worth of forms. The forms are kept on file at the facility for at least three years.

The waste solvent and reaction water are held in tanks constructed of metals which have insignificant corrosion rates (stainless steel). Once every five years each tank is emptied, and a through inspection is performed. This five-year inspection includes sonic testing (See Appendix 7-B) to verify the tank's structural integrity. This type of testing has been performed every five years since the tanks were installed. The tanks were last tested and certified to be in good condition was in 1998.

As a first step in this inspection the cut-off valve in the line to each tank is closed and locked and the hazardous waste tanks are drawn down through the sampling ports spaced down the side of the tanks. The contents are transferred to either an appropriate vessel or vessels until the liquid waste level are even with the top of the conical bottom section. The contents of the conical section are withdrawn from the bottom port into drums. The filter solids are placed in drums for off-site disposal. The filtrate is held until the inspection is completed and it is then returned to one of the holding tanks for ultimate incineration.

Once empty, the tanks are cleaned by an outside contractor with a high-pressure, fine water jet. Any residues removed and the water used in cleaning are transferred to another tank or a tankwagon and analyzed. Based on the analysis, it will either be discharged to the Saukville sanitary sewer or incinerated.

Once apparently clean, the air inside the tank is tested with a ┗niffer. If free from fumes, a plant engineer or technician from an outside testing firm enters the tank, wearing appropriate

safety equipment (Self-contained Breathing Apparatus (SCBA), coverall, neoprene gloves, etc.). Each tank is inspected for visible signs of corrosion or material failure. The tank wall thickness is measured following the suggested method in Appendix 7-B.

7.3.3 Incinerator Inspection

The hazardous waste incinerator is normally be operated 5 to 7 days per week, 24 hours per day, using 8-hour work shifts (maximum design conditions). The incinerator and associated equipment are inspected visually once each shift for leaks, noises, instrument readings, spills, fugitive emissions, and signs of tampering. The inspection results are recorded for evaluation by the Plant Manager or other production supervisor, who initiates corrective action, if necessary.

The emergency shutdown systems and associated alarms also are tested on a daily basis. All inspections are recorded on forms (see Appendix 7-A) and kept for three years. Testing of the incinerator waste feed cut-off systems is accomplished by decreasing the set points on:

- Reaction water and waste solvent flow controllers
- Carbon monoxide monitor
- Flue gas flow monitor

The high temperature check will also be accomplished by decreasing the high temperature set point. The low temperature cut-off is tested by increasing the low temperature set point. By decreasing (or increasing) the set points on these instruments below (above) what is occurring at that point in time, an increase (or decrease) in flow (or temperature) is simulated. This will activate the waste feed cut-off valves on the waste solvent and reaction water lines. If changing the set points of any of the instruments fails to activate waste feed cut-off, solvent is manually replaced by auxiliary fuel. After the incinerator has stabilized, the reaction water is manually shut off. Only after the instrumentation defect causing the failure of waste feed cut-off has been found and corrected are the two waste streams introduced into the incinerator.

7.3.4 Security Devices

The perimeter fence and gates, plant public address system, plant alarm system, pagers, and plant internal and public (external) telephone systems are inspected weekly to determine their general condition and working status. Needed repair/replacement are reported to the Plant Manager, and corrective action are initiated as necessary.

The results of these inspections are kept on the forms in Appendix 7-A and kept on file for three years.

The Cook Composites and Polymers hazardous waste storage (see Section 12.0 of this report) and incinerator facility site is provided with equipment for internal and external communications, emergencies, and fire control.

Safety and fire protection programs have been implemented to ensure that all activities are performed in a manner that prevents personal injury and unauthorized discharges to the environment. Safety and fire protection training (described in Section 10.0 of this report) is presently conducted at regular intervals for all plant personnel, not just personnel directly involved with the facility. This training is adapted to the condition of the facility upon arrival.

8.1 LOADING/UNLOADING OPERATIONS

Hazardous solid wastes, liquid wastes too viscous for the incinerator, and burnable hazardous wastes not licensed for on-site incineration are placed in appropriate drums in the resin preparation areas of the plant. A hazardous waste label indicating contents of the drum, owner, and date of filling is placed on each drum when it receives hazardous waste. These drums are temporarily stored (less than 90 days) in Building 45 prior to shipment off-site for incineration and/or final disposal.

All rinse solvents and reaction water (generated on-site and received from off-site at the small storage portion of the facility described in Section 12.0 of this report) are transported to the hazardous waste incinerator facility in 55-gallon drums, pumped pipeline, and/or tankwagons, as appropriate. The on-site solvents and reaction water are transferred to 8,500- gallon holding tanks. The transfer operation will take place under roof, on a concrete floor with an appropriate sump with suction pipe for removal of spilled wastes. A complete description of the facility building is given in Section 4.4.2 of this report.

8.2 RUN-OFF FROM HAZARDOUS WASTE HANDLING AREA

All spill run-off from the hazardous waste holding and incinerator feed tanks (including the #1 waste holding tank as a small storage facility) is contained by the floor of the incinerator building and are collected in the sump in that floor. The sump is inspected daily and after any spill. Sump liquids are pumped directly into an appropriate container, any one of the standby 8,500-gallon tank(s), a tankwagon, or drums, depending on the material and amount spilled. After spill cleanup and any required repairs, the collected wastes may then be pumped back into a waste holding tank or disposed of off-site, depending on the physical and chemical nature of the spilled and collected liquid(s).

This hazardous waste incineration system will not contaminate any rainwater run-off to other parts of the plant site. The hazardous waste facility is housed entirely under roof in an enclosed

building designed with containment features to prevent any spilled hazardous waste from leaving the building. See Figure 4-1 for design details.

8.3 PROTECTION OF WATER SUPPLIES

No potential will exist for contamination of water supplies with hazardous waste or run-off during routine hazardous waste treatment operations. Run-off are controlled as stated above in Section 8.2. All hazardous wastes are retained in sealed tanks or pipes. In the event of an emergency threatening contamination of water supplies, the Contingency Plan, detailed in Section 9.0 of this report are instituted to prevent or minimize water supply contamination. Specific protection measures are given in Section 9.4.3.3.

8.4 FLOOD PROTECTION

As stated in Section 2.2.2 of this report, the Saukville Plant hazardous waste storage and incinerator facility and the adjacent truck unloading station, as well as the entire plant site, is located well above the 100-year floodplain (see Figure 2-1). Therefore, no measures to control flooding are anticipated and are not required for this report.

8.5 IMPACT OF EQUIPMENT FAILURE AND OUTAGES

All hazardous wastes for off-site disposal/or reclamation in properly licensed facilities are handled manually. A power failure will not affect their disposal.

The waste solvents and reaction water are fed to the incinerator with electrical pumps. These pumps will stop in the event of a power failure or flame failure. There are automatic solenoid valves in the incinerator feed lines which will close upon power failure or flame failure. This issue is discussed in detail in Section 4.3.1.9 of this report

Cook Composites and Polymers does not have backup power generation equipment because they believe no physical or environmental danger would result from a power failure. In case of power failure, all pumps feeding wastes to the incinerator would simply stop and all hazardous waste feeds would, therefore, immediately cease.

8.6 PERSONNEL PROTECTIVE EQUIPMENT

All hazardous management personnel are required to wear personnel protective equipment and clothing (coveralls, gloves, goggles, respirators) during routine operations as well as emergency situations to prevent accidental contact with hazardous materials. Other protective and emergency equipment is described in detail in Section 9.5 of this report, as are the procedures and

conditions for utilizing that equipment. Use of protective and emergency is a routine item in employee training as described in Section 10.0 of this report.

8.7 PRECAUTIONS TO PREVENTION IGNITION OF WASTE

- Both the rinse solvent and the waste resins are ignitable, as are most of the raw materials used and products produced at Cook Composites and Polymers.
- This plant is designed and operated to handle all materials as if they were ignitable. For example:
- All lift trucks are diesel with air start and special mufflers. They have no electrical system for the ignition or gages.
- The electric motors used in the vicinity of ignitable materials are explosion proof.
- There are no open flames.
- A permit must be issued before any welding or cutting can be done. A second man must be on fire watch during any welding project.
- All tanks and drums are grounded when material is transferred.
- "No Smoking signs are posted at the gates, throughout the plant, and at the present hazardous waste incinerator facility and are posted at the facility.

8.8 PRECAUTIONS FOR HANDLING INCOMPATIBLE WASTES

The Cook Composites and Polymers Saukville Plant generates no incompatible wastes and will not accept off-site waste which is incompatible with its own waste. Therefore, precautions for handling such wastes are not required.

The two hazardous wastes for incineration on-site, reaction water and waste solvents, are "ccreted together and managed throughout the various manufacturing processes and are stored in the incinerator building in mixtures of varying proportion. As described in Section 4.3.1.6 of this report, the reaction water and waste solvents are selectively pumped to the individual dedicated incinerator feed tanks.

8.9 PRECAUTIONS FOR HANDLING IGNITABLE WASTES IN TANKS

CCP's entire manufacturing operation involves handling ignitable liquids in tanks. Therefore, the precautions necessary to prevent fires are constantly and rigorously enforced. The specific precautions taken to prevent ignition of the hazardous waste to be kept in the tanks are listed in Section 8.7 of this report. The hazardous waste holding and incinerator feed tanks are used daily, not just for emergencies. The liquids in the tanks are flammable and are treated as such. The

location of the tanks complies with the National Fire Protection Association□s (NFPA) buffer zone requirements, in particular with NFPA 30-1984. Table 2-6 on page 23 of this code states that flammable liquids (50,000 to 100,000 gallons total storage) must be at least 50 feet from the property line and at least 15 feet from the nearest important building.

The Contingency Plan for this facility is embodied in the facility's Emergency Response Guide. The Guide is duplicated in its entirety in Appendix 9-B. Appendix 9-A is the letter authorizing the responsible individuals to expend the necessary funds required to mitigate an emergency situation.

10.1 GENERAL INFORMATION

Training responsibility at the Saukville Plant is shared by several supervisory positions, depending on expertise. These various responsibilities are detailed in Section 10.1.1, following. Training includes safety, spill prevention and control, and operation procedures. Operating directives, safety directives, and the Spill Prevention Control and Countermeasures (SPCC) and Contingency Plans are also reviewed by and always available to all personnel.

10.1.1 Training Directors

Training is divided into two general areas of responsibility: 1.) normal, routine training and 2.) Specialized hazardous-waste training. Table 1 lists the individuals responsible for these functions. In addition, CCP utilizes an outside consultant, URS Greiner Woodward Clyde to conduct RCRA training. The job descriptions for these individuals is given in Section 9.

Table 10-1. Individuals Responsible for Personnel Training

Name	Position	Training Responsibility
Gary M. Masse, PhD	Plant Manager and Primary Emergency Response Coordinator	Assist in normal plant training
Tim White	Alternate Emergency Response Coordinator, Plant Supervisor	Normal plant training
Tom Braunschweig	Regulatory Affairs Coordinator	Specialized RCRA training
Randy Zurbuchen	Plant Engineer	Assist in RCRA Training

10.1.2 Relevance of Training to Job Description

All Cook Composites and Polymers plant personnel are well trained in the handling of hazardous materials and response to emergencies and have received all the training outlined in this training program except the specialized RCRA training. Personnel working directly in the hazardous waste treatment area(s), and who are referred to in this report as hazardous waste management personnel, are additionally trained in the proper handling of hazardous waste in the storage (described in Section 12.0 of this report) and incinerator, spill control in the treatment area, etc., as required RCRA. Section 9 contains job descriptions for all hazardous waste management personnel positions (supervisory and labor) directly related to the present and hazardous waste facilities. Specifically, these positions or functions are the Plant Manager, Plant Supervisor, Chief Engineer, Regulatory Affairs Coordinator, Plant Foreman, Production Scheduler, and/or Material Handler(s).

10.1.3 Implementation of Training Program

All present personnel, both general operating personnel and hazardous waste management personnel, have gone through the training program outlined herein. All new personnel start the training program immediately and complete the initial phase (classroom instruction and on-the-job training) before assignment to a work position in the plant. Additionally safety training is received at the regular quarterly sessions. For the hazardous waste management personnel, the entire training program, including RCRA training, must be completed within six months after the date of employment and prior to assignment to the hazardous waste storage and incinerator facility. Hazardous waste management personnel will not work in unsupervised positions until they have completed this training program. Each hazardous waste management employee's training is documented on a Record of Employee Training (see Appendix 10-A) for the initial training program (classroom and on-the-job training), the quarterly routine safety training, and the supplemental yearly RCRA training.

RCRA training reviews are conducted during the first month of each year. Should additional RCRA update training be needed, specialized training sessions are scheduled. The subjects of these reviews will include:

1. The statements of incinerator operating conditions and procedures, noting any areas where there are problems or potential problems. Hazardous waste management personnel will participate in developing effective solutions. The requirements contained in the RCRA permit, noting any changes that have occurred during the past year. Areas where compliance is a problem are identified and discussed, and effective solutions are sought.
2. A detailed review of the initial training as outlined in this section and the associated hazardous waste regulations in the NR 600 series are completed on an annual basis.

3. Incidents that have occurred in the past year that warranted use of the Contingency Plan and/or any emergency action. This review focuses on the cause of the incident and identification of prevention or better emergency procedures.

Records documenting the job title for all hazardous waste management personnel positions, job descriptions, names of employees, and completed training programs are kept in the Saukville Plant Office. Records for current employees are kept until closure of the incinerator; records for former employees are kept for three years from the date of termination.

10.2 TRAINING CONTENT, FREQUENCY, AND TECHNIQUES

The hazardous waste training at the Saukville Plant is actually an extension of the normal and routine training all CCP employees receive who work in the chemical plant environment. The additional training for the hazardous waste management personnel involves familiarization with RCRA regulations and the specialized requirements of the hazardous waste incinerator.

The normal employee training at the Saukville Plant is a four-part program.

1. Initial training for new hires.
2. Quarterly training on emergency procedures. These are conducted by the Plant Foreman and alternate between fire drills and training on emergency equipment.
3. Quarterly training meeting coordinated by the Plant Supervisor. Each meeting addresses a different subject.
4. A booklet of memos on plant procedure provided to each employee.

This normal and routine employee training is supplemented by specialized RCRA training, updates yearly, for all hazardous waste management personnel.

10.2.1 Initial Training for New Hires

This one-day course, given to all new employees before the start of work in the Saukville Plant, includes:

- Completion of paperwork for the Personnel office
- Video presentation on Cook Composites and Polymers
- Tour of the Saukville Plant
- Video on fire safety
- Discussion on fire safety

- Discussion of duties during fire
- Fire extinguishers
- Discussion of handling chemical(s) safely:
    1. inhibitor burns
    2. gloves, glasses, hard hat
    3. materials Safety Fact Sheets
- Video on lift truck safety
- Lift truck driving practice
- Video on confined space entry
- Discussion of permit system for confined space entry
- Discussion of proper grounding
- Respirators- types and uses of each type
- Training on cathode ray tube (CRT) unit
- Training on gear pumps
- Introduction to plant supervisors

10.2.2 Quarterly Training on Emergency Procedures

These sessions for all Saukville Plant personnel are conducted at least four times a year, as scheduled, by the Plant Foreman, under the supervision of the Plant Supervisor, to review and practice emergency procedures. These quarterly courses alternate between fire drills and the use of emergency equipment as follows:

Use of Emergency Equipment

1. Use of respirators
2. Use of light water foam
3. Use of dry chemical extinguishers
4. Equipment in emergency equipment cart
5. Location of first aid equipment

Fire Drill

1. Identification of different alarms
2. Shutting down work in process

3. Locating fire
4. Notification of fire department
5. Laying hose line and dry chemical extinguishers
6. Accounting for all people and rescue, if necessary
7. Containing fire, removing surrounding materials
8. Directing fire department to area and establishing communications
9. Cleaning up and inspecting equipment

10.2.3 Quarterly Training by Plant Supervisor

These sessions for all Saukville Plant personnel are designed to cover various previously discussed subjects in more depth using audio-visual aids and local experts, such as the Mine Safety Apparatus representative on respirators. These classes are designed to compliment the quarterly review and practice classes on emergency procedures and include the following subjects.

Health Hazards and Handling Procedures

1. General precautions by code number
2. Material Safety Data Sheet (MSDS)
3. Personal Protection Index
4. Discuss specific materials
5. Importance of cleanliness

Entering Enclosed Areas

1. Describe dangers
2. Explain check list and approval by supervisor
3. Flammability and oxygen monitors

Grounding and Sparks

1. Describe dangers
2. Describe proper grounding

3 Reason for explosion-proof equipment

4. Welding and cutting permits

Respirators

1. Use and limitations of dust masks
2. Use and limitations of canister masks
3. Check for fit on masks
4. Maintenance of masks
5. Use of self-contained breathing apparatus
6. Importance of proper ventilation

Spill Containment Equipment

1. Importance of prevention and urgency of cleanup
2. Use of absorbents, sewer covers, flotation boom, overpack drums, and sand bags

Videos

1. Lift Truck safety
2. Use of extinguishers
3. Fire safety

Employees Assistance Program

Emergency First Aid

Discuss New Government Regulations

10.2.4 Specialized RCRA Training

All hazardous waste management personnel named in Section 10.1.2 of this report attend specialized RCRA training sessions held during the first month of each year, covering the following.

New RCRA Regulations

Hazards in Handling Cook Composites and Polymers Waste

1. Ignition
2. Spills
3. Groundwater contamination

Review Methods to Prevent Hazards

1. Grounding

2. Explosion-proof equipment
3. Importance of spill prevention and detection
4. No open flames

Inspection and Operating Logs

1. Review inspection forms
2. Review daily logs
3. Review reporting of material stored and burned

Review Manifest System

1. Manifest
2. Inspection of waste and quantity manifested
3. Exception reporting

Emergency Procedures

1. Authorized to take immediate action
2. Implementation of Contingency Plan
3. Spill containment and clean up
4. Communication and alarm systems
5. Review emergency shutdown procedures

Review of Standard Startup, Operating, and Shutdown Procedures

10.2.5 Booklet of Plant Procedures

This booklet contains memos on plant procedures covering the following subjects:

Standard operating procedures

Startup and shutdown procedures

Safety procedures

Emergency procedures.

These memos detail in writing the above procedures, complimenting the quarterly training sessions.

10.3 TRAINING FOR EMERGENCY RESPONSE

CCP's Saukville Plant training program is designed to ensure that all personnel handle hazardous materials and/or waste and respond to emergency situations properly and safely. The program trains hazardous waste management personnel to maintain compliance under both normal operating conditions and emergency conditions. Training elements addressing non-routine and emergency situations are discussed in Sections 10.3.1 through 10.3.6, following:

10.3.1 Use of Facility Emergency and Monitoring Equipment

The emergency response equipment and monitoring equipment at the Saukville Plant are integral to the safety and operations of the entire plant, not just the hazardous waste storage and incinerator facility. Maintenance and operation of all emergency equipment is the responsibility of the Saukville Maintenance Department, under the direction of the Plant Supervisor. The monitoring and control equipment specific to the hazardous waste incinerator are the responsibility of the Plant Engineer. All employees are trained in the location and use of all emergency response equipment.

10.3.2 Location and Operation of Emergency Waste Feed Cut-Off Systems

The Saukville Plant incinerator system will require three critical areas for automatic cut-off systems. The incinerator feed systems for both waste solvent and reaction water are interlocked with safety controls for automatic feed cut-off in the event of breakage in either line (see Table 4-3). All six tanks for the waste solvent and reaction water has high-level and emergency cut-off switches to safeguard against overfilling. Hazardous waste management personnel are trained in the location and operation of these cut-off systems.

10.3.3 Use of Communication and Alarm Systems

As discussed in Section 9.4.1.1 of this report Saukville Plant has developed a unique, distinctive alarm system keyed to the kinds of emergency situations expected for this type facility and plant. The public address system and individual pagers are also used to distribute emergency information. All employees are trained to quickly and property respond to any emergency situation triggering these systems is the responsibility of the Maintenance Department.

10.3.4 Response to Fires and Explosions

Emergency response to fires and explosions is covered in the normal employee emergency response training for all Saukville Plant employees as all plant operations deal with ignitable materials to some degree. The plant response to the fire and explosions is described in detail in the Contingency Plan contained in Section 9 of this report.

10.3.5 Response to Surface and Groundwater Contamination Incidents

The entire hazardous waste incinerator area is enclosed under roof and on an impervious concrete floor. The floor is sloped to a sump equipped with a suction pipe to collect any spilled materials and to transport them back to the appropriate tank(s) or container(s). However, should a situation arise involving potential or actual surface water or groundwater contamination, plant response would be as outlined in the Contingency Plan in Section 9.4.3.3 of this report. All employees are trained to quickly and properly respond to any potential or actual contamination incident.

Cleanup of groundwater contamination would be beyond the normal training and expectations of plant personnel and would require the assistance of a professional geotechnical firm specialized in groundwater remedial actions. Such a firm would be retained in this event.

10.3.6 Shutdown of Operations

Only the Primary or Alternate Emergency Response Coordinator would make the decision to shut down the operation of the hazardous waste incinerator. Hazardous waste management personnel are trained to immediately report any information and/or situation relative to incinerator shutdown, as this decision is outside of the authority of these employees.

11.1 CLOSURE PLAN

11.1.1 General Information

This Plan identifies all steps that are necessary to close the Cook Composites and Polymers Saukville Plant hazardous waste small storage (see Section 12.0 of this report) and incinerator facility at any point during its intended operating life. No post-closure plan information is included as this will not be a disposal facility, and no hazardous wastes or residues will remain at closure. CCP expects that the ongoing corrective action will bring a successful conclusion to the site remediation project which will not necessitate the need for post-closure activities. See Section 14.

Cook Composites and Polymers will maintain on-site copies of the approved Closure Plan and all revisions to that Plan until the certification of closure completeness has been submitted and accepted by the WNDR. Cook Composites and Polymers will notify at least 180 days prior to the date initiating final closure, Cook Composites and Polymers will submit to WDNR a revised closure plan, as needed for approval. Upon completion of closure activities, certification of closure that the incinerator facility has been closed in accordance with the specifications in the approved Closure Plan will be performed by a local independent registered professional engineer.

11.1.2 Closure Performance Standards

This Closure Plan is designed to conform to the closure performance standard, namely, removal of all hazardous wastes from the facility site at closure. Therefore, the Plan insures that the Cook Composites and Polymers -Saukville storage and incinerator facility are closed so as to minimize threats to human health and the environment and to eliminate post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated run-off, and/or waste decomposition products to the groundwater, surface waters, and/or atmosphere.

11.1.3 Partial-Closure and Final Closure Activities

Cook Composites and Polymers does not plan to partially close the Saukville Plant storage and incinerator facility. Final closure of this Cook Composites and Polymers site is not planned until the year 2035.

11.1.4 Maximum Waste Inventory

The inventory of wastes held for treatment at the Saukville Plant storage and incinerator facility is limited to a maximum of 51,000 gallons of waste solvent and/or reaction water.

NOTE: The incinerator will not burn any solid wastes; therefore, no ash is anticipated and is not included in this waste inventory.

11.1.5 Inventory Disposal and Decontamination of Equipment

Final closure is initiated following the treatment of the final batch of hazardous wastes to be processed in the Saukville Plant incinerator and/or the off-site shipment of remaining hazardous waste in the holding tanks for final disposal. Closure is completed within 180 days of this occurrence.

Clean-up and decontamination are performed under a shift supervisor, with the Plant Engineer present. Whenever the clean-up/decontamination personnel are handling materials containing toxics or irritants, SCBA are worn (e.g., for collecting samples, disconnecting lines used to pipe material, and cleaning spills). There are a minimum of two people performing any task that requires the use of SCBA. Also, neoprene gloves and impermeable protective clothing are worn at all times during the clean-up and decontamination process. Appendix 11-A presents equipment decontamination procedures and treatment of rinsates and residues.

Prior to leaving the decontamination area, personnel protective clothing is decontaminated by removing all bulk materials from the boots and spraying, washing, and scrubbing with detergent solution all outside protective clothing materials. Personnel undergoing decontamination will stand in drip pans to catch all rinsate and residues which are disposed of off-site at properly licensed facilities.

11.1.6 Closure of Containers

Containers are used at the Saukville Plant only for temporary storage (less than 90 days) prior to off-site shipment for incineration, reclamation, or final disposal in approved facilities. Also, this Closure Plan will utilize a limited number of 55-gallon drums which are shipped off-site for final disposal. No further closure response is required.

11.1.7 Closure of Tanks

Typically, the tanks will be closed when the incinerator is still in operation so that the tank contents will be treated by the incinerator until the tanks are empty. The remaining contents of all six hazardous waste tanks, if any, are pumped into tankwagons for off-site disposal at an approved treatment or disposal facility. All hazardous wastes are properly manifested

Any unloading or transfer lines that precede the hazardous waste holding and incinerator feed tanks are flushed (triple rinsed) with a biodegradable solvent or detergent fluid. The fluid is

pumped through these lines to the tanks and fed directly through the waste feed lines plumbed to discharge to the tankwagon.

Each tank is flushed three times with approximately 500 gallons of fluid. The tanks also are sprayed with a portable spray system to internally rinse them. The fluids are transported off-site to an approved disposal or treatment facility.

11.1.8 Closure of Incinerator

The incinerator waste solvent and reaction water charging systems and the thermal oxidizer combustion chamber are inspected for contamination by wipe tests. Cellulose pads are used to collect surface samples for extraction analysis followed by GC/MS scanning. A comparison of these results from a scan of the biodegradable detergent fluid is used to detect the presence of contaminates that could indicate incomplete decontamination. Incineration system equipment decontamination are repeated as needed to assure complete decontamination.

During the cleaning and decontamination process, any possible contamination in the holding tank area and on the incinerator concrete floors are treated. The cleanup crew will follow procedures similar to those used for tank decontamination, i.e., use an appropriate wash on the surface and rinse thoroughly, collecting the rinsing for analysis. This procedure is repeated until contaminant residues are gone. GC/MS analysis are performed on the rinsings to insure that the decontamination process has been successful. The definition of hazardous waste under NR 605. the appropriate EPA contaminated debris rule, or an alternative method approved by WDNR will be followed for management of any waste generated from the closure activities.

Cook Composites and Polymers will provide the WDNR certification that the incinerator has been closed in accordance with the specifications contained in the approved Closure Plan. An independent professional engineer is present during the decontamination process and will certify that closure activities were performed in accordance with the approved Closure Plan.

11.1.9 Continuance of Operation and Schedule of Closure

Closure will not begin until completion of the last hazardous waste treatment cycle and/or the off-site shipment of any remaining untreated reaction water and waste solvents in the hazardous waste tanks. Therefore, operational controls would not be needed during closure. Composites and Polymers presently plans to operate the Saukville Plant hazardous waste small storage and incinerator facility until the year 2035. The WDNR Director will be notified by Cook Composites and Polymers at least 180 days before beginning closure. The schedule for closure follows, in Table 11-1.

11.1.10 Notice in Deed

No hazardous liquid wastes are left on-site. Therefore, notification in the property deed and notification of the local zoning authority for land use concerning remaining wastes after closure will not be required.

11.1.11 Closure Cost Estimate

The latest cost estimate for conducting closure of the Cook Composites and Polymers hazardous waste small storage and incinerator facility at the Saukville Plant is shown in Table 11-2. This figure assumes that the hazardous waste storage and incineration facility is operated until closure. As CCP has passed a trial burn, minimum or no decontamination of the internal incinerator components are expected to be necessary. The closure costs are summarized by activity in Table 11-2.

The closure cost estimate will be revised whenever a change in the hazardous waste incineration unit that affects the cost of closure may occur. The closure cost estimate will also be adjusted regularly for inflation and other changes such as changes in costs for transport, labor, or disposal. The Department of Commerce Annual Implicit Price Deflator for Gross National Product will be used to make the inflation adjustment. This latest adjusted cost estimate is retained at the Saukville Plant Manager's Office together with the latest cost estimate throughout the life of the storage and incinerator facility and final closure of that facility.

11.2 FINANCIAL ASSURANCE AND MECHANISM OF CLOSURE

Cook Composites and Polymers assures closure of the facility by a Letter of Credit issued by a financial institution. A copy of this instrument is shown in Appendix 11-B.

11.3 LIABILITY REQUIREMENT

A copy of the Certificate of Insurance for sudden accidental occurrences is shown in Appendix 11-C.

Table 11-1. Scheduled Closure for Saukville Storage and Incinerator Facility

Scheduled Event	**Days After Closure Initiation**
Off-site disposal of all accumulated hazardous wastes	0-15
Flushing with decontamination fluid and decontamination of piping, containment systems, unloading and transfer lines, and waste holding and feed tanks	15-25
Collection and sampling of sump liquids, incinerator wastewater, and surface "swabs	25
Receipt of analytical verification of decontamination	60
Review laboratory analysis results and treat (if necessary)wastewater and discharge	60-90
Certify closure complete	180

Table 11-2

Estimated Closure Cost

Item	Cost
1. Equipment decontamination and disposal of aqueous rinsates and residues (estimate 4,000 gallons)	$15,000
2. Disposal of Maximum Inventor (51,000 gallons)	45,000
3. Disposal of process residues	8,000
4. Professional Certification	2,000
5. Administrative Costs	2,400
6. TOTAL	$72,400
7. Contingencies (10% of 6)	7,240
8. TOTAL COST	$79,640

The hazardous waste small storage and incinerator facility at CCPs Saukville Plant accepts reaction water and waste solvent from other Cook Composites and Polymers plant Marshall Texas site on a very infrequent basis. The information in this section is presented to satisfy the requirements of NR 181,435 to license the #1 waste holding tank housed in the tank room of the incinerator building as a small hazardous waste storage facility

12.1 APPLICABILITY

The #1 waste holding tank is an above-ground tank fully housed inside the enclosed and roofed incinerator building (see Figure 4-1) which is located in the center of the Saukville Plant site (see Figure 2-3). This building and storage facility is accessed, inspected, and otherwise managed by Cook Composites and Polymers hazardous waste management personnel only. These personnel are identified in Section 10.1.2 of this report.

This storage facility occupies approximately 125 square feet of floor area, based on the 9.5-foot diameter of the tank itself plus associated valves, pump(s), and supporting structures (see Figure 4-5 for details). The capacity of this tank is 8,500 gallons; however, the most hazardous waste that would be accepted at this storage facility from one shipment would be 6,500 gallons, the capacity of one tankwagon.

This storage facility is used for off-site hazardous waste very infrequently, with no fixed schedule of delivery. However, Cook Composites and Polymers desires to have the ability to accept off-site hazardous waste at the Saukville storage and incinerator facility, as needed, from the Cook Composites and Polymers plant at Marshall Texas. Only hazardous wastes compatible with the incinerator design and TSD permit are accepted, i.e., reaction water and waste solvents. Only hazardous waste from the Marshall Texas Cook Composites and Polymers site are accepted.

12.2 HAZARDOUS WASTE STORAGE EXPERIENCE

The Cook Composites and Polymers Saukville Plant has been in operation producing various resins since 1949. Hazardous chemicals, and therefore hazardous wastes, have always been associated with their manufacturing processes. Thus, this company has a long history of managing hazardous materials and wastes. In December of 1985, this plant was issued an interim hazardous waste storage facility license by the Wisconsin DNR. CCP received approval for the FPOR, covering both the liquid incinerator and the storage tank, on February 9, 1988 and a license to operate on June 1, 1989.

12.3 STORAGE FACILITY DESCRIPTION

The #1 waste holding tank, at the small hazardous waste storage facility, is used very infrequently, on an irregular schedule, and for very short periods of time as a storage facility for off-site

hazardous wastes. During these periods, this tank is emptied of any on-site hazardous wastes and then isolated from the feed tanks in this building by closing and locking the valves in the interconnecting piping system before any off-site hazardous waste is accepted into this tank. When not actually receiving and holding off-site wastes, this tank may be employed in the same manner as the other five waste holding tanks in this building and will then be a functioning part of CCP's hazardous waste incinerator.

12.3.1 Storage Area and Adjacent Area Description

The small hazardous waste storage area is in the northwest corner of the floorspace of the tank room in the incinerator building (see Figure 4-1). The floors in this building are constructed of concrete from monolithic pours. The floor in the tank room will form an impermeable containment for any waste solvents and reaction water that might be spilled.

The tankroom floor has been designed and built with sufficient capacity to bear the load of the tank and its foundation and the building's foundations have been designed to minimize cracking due to frost heave. The building floor is bermed and diked to contain spills of greater than 8,500 gallons as discussed in Section 4. The detailed spill containment capacity calculations are given in Appendix 4-B.

12.3.2 Prevention and Security Procedures and Equipment

The prevention and security procedures and equipment for this small hazardous waste storage facility are actually also a physical and functioning part of the incinerator system.

12.3.2.1 Fire Prevention and Control

As shown in Figure 4-2, the entire incinerator building, and therefore the hazardous waste storage facility, are covered with an overhead sprinkler system for fire control. Also, in the southwest corner of the incinerator building are a firehouse for use with both water and pressurized foam for fire control. Four other fire hydrants equipped with hoses are strategically placed throughout the entire plant site (see Figure 2-3) and should also be considered available for use in fire control at the hazardous waste storage facility.

The storage tank building ventilation system has been designed to change the complete air volume in the room four times per hour. Under normal conditions, ¾ of the air movement is re-circulated as heated air for economizing the system during the winter months; the room needs to be heated due to the installation of a wet sprinkler system.

Fume monitors are installed at the entrance of the air return duct openings to monitor the air quality of the room. Should the monitors sense a potentially explosive situation, they automatically energize the HVAC emergency venting system to bring in 100 percent fresh air and

exhaust the explosive air. The HVAC system is designed to operate continuously. A backup system designed for use during the maintenance of the HVAC system, additional fans and exhaust dampers are located in the room and operated as required.

Fire prevention is a major issue throughout the entire plant site, not just in the hazardous waste treatment areas. oo Smoking are posted in the hazardous waste incinerator building and, therefore, in the hazardous waste storage facility.

As detailed in Section 8.7 of this FPOR, the entire Saukville plant site, including the storage and incinerator facility detailed in this report, is and are operated to handle all materials as if they were ignitable. For example:

1. All lifts trucks are diesel with air start and special mufflers. They have no electrical system of rate ignition and gages which could produce sparks.
2. The electric motors used in the vicinity of all ignitable materials are explosion proof.
3. No open flames are allowed.
4. A permit must be issued before any welding or cutting can be done, and a second must be on fire watch during any welding project.
5. All tanks and drums are grounded when materials are transferred.
6. "No Smoking signs are posted throughout the plant and are posted in the facilities.

Also as an aid in preventing the spread of a fire, the location of the tank as the storage facility complies with the NFPA buffer zone requirements for a tank of this capacity (8,500 gallons). This tank is located at least 50 feet from the property line and at least 15 feet from the nearest important building. See section 8.9 of this FPOR for additional information on CCP's practices of fire and safety.

Lastly, the Contingency Plan in Section 9.0 of this report addresses in detail the Saukville plant response to a fire or explosion in the hazardous waste incinerator and, therefore, in this storage facility as well (see specifically Section 9.4.3.1 of this report).

12.3.2.2 Communication System

The Saukville Plant and the hazardous waste storage and incinerator facility are equipped with several communication systems. All main plant buildings are equipped with a telephone system for external (public) as well as internal communication. Also, the plant public address system and individual pagers are used to distribute routine and emergency information.

Because of the ignitable and hazardous nature of the materials routinely handled throughout the Saukville Plant site, a unique, distinctive alarm system keyed to the various kinds of possible emergency situations has been developed. Section 9.4.1.1 of this report describes these various

alarms in detail. This alarm system also serve the hazardous waste storage and incinerator facility. All employees are trained to quickly and properly respond to emergency information disseminated by means of these various communications systems.

12.3.2.3 Security

The Saukville Plant security procedures and equipment detailed in Section 6.0 of this report will also provide security for the hazardous waste storage facility. The entire plant site is surrounded by an 8-foot fence with gates at all entrances. The two normally used access gates are open when the plant is in operation, but all other gates are kept locked except when access is actually needed, e.g., to send or receive a rail shipment. See Figure 2-3 and 9-1 for the location of the fence and all gates.

The plant and the hazardous waste storage facility are under 24-hour surveillance by either the workforce during normal operational hours or by security guards during weekends and holidays.

Lastly, " Danger- Unauthorized Personnel Keep Out signs are posted at the access gates and are posted in the hazardous waste storage facility.

12.3.3 Wastes for Storage

The hazardous wastes of storage in this small hazardous waste storage facility result from the production of alkyd and polyester resins and urethane foams at Cook Composites and Polymers plant sites other than the Saukville Plant, namely reaction water and waste solvents. These hazardous wastes are identical to and fully compatible with the on-site wastes the Saukville Plant proposes to incinerate in the facility described in Section 4.0 of this report. No other off-site wastes from any other source are accepted or stored in this storage facility.

12.3.3.1 Reaction Water

This water is generated in the chemical reaction that forms the polyester and alkyd resins. It is codistilled with the solvents toluene and xylene and removed from the mixture by means of a separation process unit. The reaction water is hazardous waste because of its potential to flash below 140^0 F. the off-site reaction water received in the hazardous waste storage facility are transferred as soon as is manageably possible to the incinerator for treatment. See Tables 3-2, 3-3, and 3-4 for chemical information on this hazardous waste.

12.3.3.2 Waste Solvents

These solvents fall into two categories: 1. Rinse solvents used for rinsing and cleaning production equipment involved in resin production (xylene and other hydrocarbons) and 2. Process solvents used in an azeotrophic distillation to remove condensation water formed in the product during the

esterification reaction (xylene and toluene). These solvents are blended and are used as fuel for the incinerator. They are hazardous because of ignitability, listing, and content of significant but highly variable quantities of toluene. The off-site waste solvents received in the hazardous waste storage facility are transferred as soon as is manageably possible to the incinerator for treatment. See Tables 3-2, 3-3, and 3-4 for chemical information on this hazardous waste.

12.3.3.3 Volume of Wastes

The volume of off-site hazardous wastes received at the hazardous waste storage facility at any one time will vary greatly. However, the most off-site waste that would be accepted at any single unloading (shipment) would be 6,500 gallons, the capacity of a single tankwagon. Should off-site hazardous waste in excess of this amount arrive at the storage facility, the off-site waste already received in the storage facility tank are transferred to the incinerator treatment facility through the interconnecting piping described in Section 4.2.3.3 of this report (also see Figure 4-6C). The hazardous waste in the storage facility tank are transferred directly to the incinerator feed tanks and given priority for incineration. Then, when the storage facility tank has been verified as empty, off-site hazardous waste will again be accepted, up to the 6,500-gallon limit. This process is repeated as necessary to unload all waiting off-site hazardous waste into the storage facility.

12.3.4 Storage Facility Containment System

The small hazardous waste storage facility containment system is the same as the tank containment system for the hazardous waste incinerator and is described in detail in Section 4.0 of this report as well as in the following paragraphs.

12.3.4.1 Description

Tank #1 occupies approximately 125 square feet of floor space and is housed in the 59-foot by 68.3-foot, fully enclosed incinerator building on an impervious concrete floor. As described in Section 12.3.1 of this FPOR, the floors in this building are monolithic pours of concrete footers that incorporates concrete dikes and berms to a level well above the level of any spillage (see Figure 4-14 for details). The bottom of the bottom cone of the tank is 2.5 feet above the top of the footers, keeping it above the level of any conceivable spill or leak.

12.3.4.2 Analysis and Removal of Accumulated Wastes

Since only wastes from very well known sources (Only reaction water and waste solvents from this facility and from the CCP facility in Marshall, Texas) are accepted by the facility their composition is very well known. All off-site hazardous waste received from the Marshall Texas facility are analyzed by the test methods described in Section 3.2.2 of this report upon arrival. The sampling is done directly from the shipping containers (i.e., tankwagon, drum) using the

sampling methods described in Section 3.2.3 of this report. All off-site hazardous wastes are held in the shipping containers, separate from any on-site wastes, until the analyses are complete, and the wastes are verified to be reaction water and waste solvents that are compatible with the on-site hazardous wastes, the incinerator design, and are allowable by the operating license the incinerator. If compatible, the off-site hazardous wastes will then be unloaded into the storage facility.

As discussed in Section 12.3.4.1 of this report, the slope of the concrete floor under and immediately adjacent to the storage facility will direct any spilled wastes in the containment system to a sump which is equipped with a pipe to the building exterior to facilitate pump removal of any accumulated waste spillage. This sump pipe is constructed in a manner to prevent siphoning of any accumulated wastes in the sump to the outside environment.

12.4 OPERATION

Cook Composites and Polymers proposes to license the #1 waste holding tank housed in the hazardous waste incinerator building as a small hazardous waste storage facility to receive off-site hazardous wastes from its plant in Marshall, Texas on a very infrequent basis and to store those off-site wastes for very short periods of time. By doing so, the Saukville Plant will then be able to receive reaction water and waste solvents from this other Cook Composites and Polymers plant site for treatment in the incinerator. Wastes that are incompatible with the incinerator design or with on-site wastes and wastes from any other sources will not be accepted at the hazardous waste storage facility.

12.4.1 Tank Standard

The storage facility tank is identical to the tanks described in Section 4.3.3. of this FPOR. The information is duplicated below for ease of evaluation of this free-standing section of the FPOR which covers, specifically Tank 1 as a Small Hazardous Waste Storage Facility.

12.4.1.1 General Description

Tank #1 is 9.5 feet in diameter and 19.5 feet high. The tank is designed for a maximum liquid height of 18.25 feet when the liquids specific gravity is in the range of 0.7 to 1.16; however, a much lower volume of off-site hazardous waste is received in this tank from any one shipment (approximately 75 percent or less of capacity). Design details are shown in Figure 4-5.

The tank is vented to the plant□s fume control system that is permitted under clean air regulations. It is also equipped with emergency and conservation (breather) vents to allow the tank to breath during normal operation of the mechanical system. The designed venting pressures are 1 psig for

the emergency vents and 3-1/2 oz/in^2 for the breather vents which are far below the tank design of 10 psig.

12.4.1.2 Manufacturer's Name and Model Number

Tank #1 as the storage facility has been specially designed for use in the incinerator system by Triad Engineering Incorporated in Milwaukee, Wisconsin. Therefore, this tank design does not carry a particular model number. This tank was built and installed by Felker Brothers Corporation, Marshfield, Wisconsin.

12.4.1.3 Tank Capacity and Wall Thickness

The tank as the storage facility is designed and built to API specification ACI-650, 1985. The tank holds 8,500 gallons and it is constructed of minimum 3/16-inch thick No. 304L stainless steel.

12.4.1.4 Materials of Construction

As stated in Section 12.4.1.3, above, Tank #1 is constructed of No. 304L stainless steel, with supporting legs of A36 steel mounted on reinforced concrete footings. See Figure 4-5 and Appendix 4-C for design details.

12.4.1.5 Tank Corrosion and Erosion

Tank #1 is housed completely inside an enclosed and roofed building. Therefore, it will not be subject to external corrosion factors from the environment.

The inside of this tank is smooth, and only liquid hazardous wastes are stored in this tank. Therefore, there should be no physical erosion of the interior of the tank.

The reaction water and waste solvents to be stored in this tank are non-corrosive and completely compatible with the tank□s materials and mode of construction. The calculated required tank wall thickness for this tank 3/32 of an inch (see Appendix 4-C for calculations); however, this tank are constructed of 3/16-inch-thick materials. Therefore, the increased wall thickness more than allows for any corrosion.

12.4.1.6 Tank Testing

To assure the interior condition of the tank relative to corrosion and erosion, it is periodically emptied, cleaned, inspected, and tested in the same manner as the other five tanks in the

incinerator system. See Section 7.3.2 and Appendix 7-A of this report for a detailed description of this process.

This storage facility receives and stores off-site hazardous wastes for very short periods of time on a very infrequent basis, probably even less than 1 percent of the time. During the remaining time, this tank holds on-site wastes and function as part of the incinerator system. Therefore, the testing of this tank is done when it is functioning as one of the holding tanks in the incinerator system. As stated above, this process is described in Section 7.3.2 of this report.

12.4.1.7 Tank Piping, Fittings, and Connections

All piping, fittings, and connections for Tank #1 are above ground. The piping, fittings, and connections are actually above the concrete floor of the building housing the tank (see Section 12.3.4 of this report for detailed description of the storage facility containment system).

Tank #1 is directly connected to the hazardous waste incinerator through the interconnecting piping system shown in Figures 4-6A 4-6B, and 4-6C. This piping system runs through a network of headers fitted with automatic valves which provides maximum flexibility in directing the waste solvents and/or reaction water to any part of the incinerator system.

Before any off-site hazardous waste are accepted in the storage facility, the #1 waste holding tank is isolated from the interconnecting piping to the incinerator system and directly connected to the outside unloading pump by closing and locking the appropriate valves. Then the off-site hazardous waste is piped directly to the #1 waste holding tank. Because the tank outlet valves have been closed and locked, no waste received in this tank can transfer to the incinerator treatment facility until the entire off-site hazardous waste shipment (a maximum of 6,500 gallons at any single unloading) has been received and duly recorded as described in Section 12.4.2.2 of this report.

12.4.1.8 Tank Management to Prevention Ignition of Contained Wastes

As described in Section 12.3.2.1 of this report, fire prevention is of prime importance throughout the entire Saukville Plant site. oo Smoking signs are posted at the storage facility. Also, all equipment used in the storage facility are explosion proof or of such design to prevent sparks or open flames that could be an ignition source.

The off-site hazardous wastes in the storage facility are delivered and transferred to the incinerator only through closed pipelines. The residence time of the received off-site wastes in the storage facility are very short, as described in Section 12.4.1.9, below. Therefore, during the time period that off-site hazardous wastes are actually in the storage facility, the tank and the

interconnecting tank piping provide isolation of the contained hazardous wastes from possible ignition sources.

12.4.1.9 Storage Time

As described in Section 12.3.2.1 of this report, fire prevention is of prime importance throughout the entire Saukville Plant site. °o Smoking signs are posted at the storage facility. Also, all equipment used in the storage facility are explosion proof or of such design to prevent sparks or open flames that could be an ignition source.

The off-site hazardous wastes in the storage facility are delivered and transferred to the incinerator only through closed pipelines. The residence time of the received off-site wastes in the storage facility are very short, as described in Section 12.4.1.9, below. Therefore, during the time period that off-site hazardous wastes are actually in the storage facility, the tank and the interconnecting tank piping provide isolation of the contained hazardous wastes from possible ignition sources.

NOTE: As soon as it is possible, any off-site hazardous waste received in the storage facility is transferred to the incinerator through the interconnecting piping system directly to the incinerator feed tanks.

Once received in the incinerator feed tanks, the off-site wastes are given priority for incineration. Therefore, the received off-site hazardous wastes will remain in the system less than one working day. Once all received off-site hazardous waste incinerator, the #1 waste holding tank will function as part of the incinerator system and be used to hold on-site hazardous wastes.

12.4.1.10 Waste Sampling

As described in Sections 3.2.5 and 12.3.4.5, each load of off-site hazardous wastes is sampled and its content confirmed by laboratory analysis prior to being accepted and unloaded into the storage facility. Sampling is directly done from shipping container(s), either the tankwagon or each of the drums. The sampling methods used are described in Section 3.2.3. All off-site hazardous wastes are sampled for two reasons: 1) to verify or confirm that the contents of the shipping container matches the shipping manifest and 2) to verify that the off-site hazardous wastes are indeed compatible with on-site hazardous wastes, with the incinerator design, and with the TSD permit for the incinerator. All sampling is recorded on the Facility Sampling and Management Record (one record per shipment) and records are kept on file for at least three years.

12.4.1.11 Buffer Zone Requirements

The #1 waste holding tank is a small storage facility. When not receiving and storing off-site hazardous waste, it will hold on-site hazardous wastes and function as one of the holding tanks in

the incinerator. This tank is housed within the enclosed incinerator building and complies with the National Fire Protection Association buffer zone requirements, in particular with NFPA 30-1984. Table 2-6 on page 23 of this code states that flammable liquids (50,000 to 100,000 gallons total storage) must be at least 50 feet from the property line and at least 15 feet from the nearest important building. Therefore, the #1 tank, functioning as the storage facility, will more than meet buffer zone requirements. Also, the tank is isolated from the outside environment by the incinerator building's concrete and steel construction and from the incinerator itself by an interior firewall (see Figure 4-1).

12.4.2 General Operating Requirements

The #1 waste holding tank is a small hazardous waste storage facility. It receives and stores off-site hazardous wastes for very short periods of time (perhaps less than 1 percent of the time) on a very irregular schedule. At all other times, this tank holds on-site hazardous wastes and functions as part of the incinerator system similarly to the other three holding tanks. For the most part, the tank operating procedures for the storage facility and the incinerator are the same.

12.4.2.1 Inspection

Because the tank is a small hazardous waste storage facility housed in the incinerator building and is physically connected to and operate as part of the incinerator system, it is inspected under the tank inspection program followed for the facility as a whole. This program meets the inspection requirements of a small hazardous waste storage facility.

As described in detail in Section 7.3.2 and summarized in Table 7-1 of this report, the #1 waste holding tank as well as the other incinerator tanks are inspected on a regular basis, and the results of those inspections are reported on the forms presented in Appendix 7-A of this report and kept on file for at least three years.

The #1 waste holding tank is inspected daily to monitor and record the level of hazardous wastes it contains and to determine that the waste feed cut-off valves for the overflow prevention are in working order. The general surrounding area and interconnecting piping are examined for signs of leakage.

On a weekly basis this tank is inspected for signs of leakage, signs of corrosion, and evidence of other deterioration in its steel construction materials. The surrounding concrete containment structure also is checked for signs of deterioration.

Every five years this tank is emptied, cleaned, and inspected internally to assess its general condition and to determine any internal corrosion and/or deterioration. This process is described in detail in Section 7.3.2 of this report.

12.4.2.2 Small Hazardous Waste Storage Management

The small hazardous waste storage facility is managed as described in the following subsections:

Hazardous Waste Sampling for Compatibility. As discussed in Sections 3.2.5 and 12.4.10 of this report, all off-site hazardous waste for unloading into the storage facility is sampled directly from the shipping container (i.e., tankwagon, drum) and analyzed for compatibility before being accepted at the incinerator design (i.e., must be injectable), and with the TSD permit for the incinerator. Any off-site hazardous wastes not meeting these criteria are not accepted at the storage facility. Only after a shipment (e.g., one tankwagon load) is proven to be compatible is it assigned a unique Storage Facility Management Number. This number and the sampling information for that shipment is then entered on a Facility Sampling and Management Record for tracking purposes.

Management of Hazardous Wastes in Storage Facility Tanks.. Before any off-site hazardous waste is accepted at the storage facility, it is sampled, verified as compatible, and assigned a unique Storage Facility Management Number; see Section 12.4.2.2.1, above.

Tank #1 as the off-site hazardous waste storage facility is operated in the following manner. As each step is completed, it is recorded on the Facility Sampling and Management Record (Figure 12-1) for each shipment.

1. The #1 waste holding tank is emptied of all on-site hazardous reaction water and waste solvents.
2. The #1 waste holding tank is verified and recorded as empty on the Facility Sampling and Management Record for the particular shipment to be unloaded.
3. Tank #1 is isolated from the interconnecting piping from the on-site processes and to the incinerator feed tanks and then directly connected to the unloading pump by closing and locking the appropriate valves.
4. The off-site hazardous waste is pumped directly from the shipping container(s) into the #1 waste holding tank
5. The amount of waste received is recorded on the Facility Sampling and Management Record for that shipment
6. The valves from the unloading pumps are closed and the valves leading to the incinerator feed tanks are opened.
7. The received off-site hazardous waste is then transferred directly to the incinerator feed tanks through the interconnecting piping for priority incineration.

Corrective Action Objectives have been implemented at Cook Composites and Polymers Co. (CCP) due to the indication that levels of residual contaminants present in soil and groundwater at Areas of Concern (AOCs) 1-3 exceeded the generic NR 720 soil standards. The three AOCs are as follows:

- Area 1 - Former Urethane Laboratory/Former Liquids Incinerator;
- Area 2 - Former Dry Well; and
- Area 3 - Former Tank Farm Storage Area

Corrective action objectives are established by considering the risk of these residual contaminants to the public health and the environment, as well as the concentration of contaminants in the context of applicable requirements.

Based on the screening of the corrective measure alternatives and evaluation of the corrective measure strategies with respect to the defined corrective action objectives, the following recommended corrective measure strategies have been implemented:

14.1 GROUNDWATER HYDRAULIC CONTROL

- Continued operation of the Ranney collector system to dewater unconsolidated soil and maintain hydraulic control of the shallow groundwater system. Samples are collected from the Ranney Collectors on a quarterly basis.

- Continued operation of the shallow dolomite wells to maintain hydraulic control of the shallow groundwater system and prevent contamination of the deep dolomite aquifer. Samples are collected on an annual basis from the pumped shallow dolomite wells.

- Continued operation of the deep dolomite pumping well (W-30) to maintain the effective site-wide hydraulic control and provide an inward gradient for capture and recovery of off-site contaminated groundwater. Groundwater results indicate that the pumping of W-30 is effectively containing the plume of contaminants on the site.

14.2 ENGINEERING CONTROLS

- Maintain the existing three acre concrete pavement system as an engineered barrier to eliminate surface water infiltration and minimize the human health risk exposure pathways for contaminated soil of direct contact, ingestion, and inhalation. This measure satisfies the criteria of performance standard for soil as described in s. NR 720.19(2).

- Maintain and operate the poly-drain system on site to divert and collect surface water runoff from the concrete surface pavement. The collection of this surface water improves the effectiveness of the pavement as an impermeable barrier and assists site dewatering by reducing near-site infiltration.

14.3 INSTITUTIONAL CONTROLS

- Minimize potential for human health risk exposure by maintaining the facility security fence and the facility policy which limits site access to authorized personnel. Each visitor must sign in prior to entering the facility.

- Implement a property deed restriction which prohibits installation of a water supply well for potable use.

- Implement a property deed restriction which establishes necessary protective measures including worker health and safety procedures and specifications for maintenance or repair of the pavement if subsurface construction activities are required on site. Each employee and visitor to the site is required to view a training video which outlines safety procedures.

Appendix 14-A presents the Corrective Action Letter of Credit which assures that sufficient funds are available for the corrective actions.