GRENADA COUNTY - TIE PLANT MS
KOPPERS INC
0960-00012
1995---------1996

AI 00876

Koppers Inc

General Information

ID	Branch	SIC	County	Basin	Start	End
876	Energy and Transportation	2491	Grenada	Yazoo River	11/09/1981	

Address

Physical Address (Primary)	Mailing Address
1 Koppers Drive Tie Plant, MS 38960	PO Box 160 Tie Plant, MS 38960

Telecommunications

Type	Address or Phone
Work phone number	(662) 226-4584, Ext. 11

Alternate / Historic AI Identifiers

Alt ID	Alt Name	Alt Type	Start Date	End Date
2804300012	Koppers Industries, Inc.	Air-AIRS AFS	10/12/2000	
096000012	Koppers Industries, Inc.	Air-Title V Fee Customer	03/11/1997	
096000012	Koppers Industries, Inc.	Air-Title V Operating	03/11/1997	03/01/2002
096000012	Koppers Industries, Inc.	Air-Title V Operating	01/13/2004	01/01/2009
MSR220005	Koppers Industries, Inc.	GP-Wood Treating	09/25/1992	
MSD007027543	Koppers Industries, Inc.	Hazardous Waste-EPA ID	08/27/1999	
HW8854301	Koppers Industries, Inc.	Hazardous Waste-TSD	06/28/1988	06/28/1998
HW8854301	Koppers Industries, Inc.	Hazardous Waste-TSD	11/10/1999	09/30/2009
876	Koppers Industries, Inc.	Historic Site Name	11/09/1981	12/11/2006
876	Koppers, Inc.	Official Site Name	12/11/2006	
MSP090300	Koppers Industries, Inc.	Water-Pretreatment	11/14/1995	11/13/2000
MSP090300	Koppers Industries, Inc.	Water-Pretreatment	09/18/2001	08/31/2006
MSU081080	Koppers Industries, Inc.	Water-SOP	11/09/1981	11/30/1985

Regulatory Programs

Program	SubProgram	Start Date	End Date
Air	Title V - major	06/01/1900	
Hazardous Waste	Large Quantity Generator	08/27/1999	
Hazardous Waste	TSD - Not Classified	06/28/1988	
Water	Baseline Stormwater	01/01/1900	
Water	PT CIU	11/14/1995	
	PT CIU - Timber Products		

Water	Processing (Subpart 429)	11/14/1995	
Water	PT SIU	11/14/1995	

Locational Data

Latitude	Longitude	Metadata	S / T / R	Map Links
33 ° 44 ' 3 .00 (033.734167)	89 ° 47 ' 8 .06 (089.785572)	**Point Desc:** PG- Plant Entrance (General). Data collected by Mike Hardy on 11/8/2005. Elevation 223 feet. Just inside entrance gate. **Method:** GPS Code (Psuedo Range) Standard Position (SA Off) **Datum:** NAD83 **Type:** MDEQ	Section: Township: Range:	SWIMS TerraServer Map It

12/20/2006 12:16:40 PM

Mississippi Department of Environmental Quality
Office of Pollution Control

I-sys 2000 Master Site Detail Report

Site Name: Koppers Industries Inc

PHYSICAL ADDRESS

LINE 1:	Tie Plant Road
LINE 2:	
LINE 3:	
MUNICIPALITY:	Tie Plant
STATE CODE:	MS
ZIP CODE:	38960-

MAILING ADDRESS

LINE 1:	PO Box 160
LINE 2:	
LINE 3:	
MUNICIPALITY:	Tie Plant
STATE CODE:	MS
ZIP CODE:	38960-

OTHER INFORMATION

MASTER ID:	000876
COUNTY:	Grenada
REGION	NRO
SIC 1:	2491
AIR TYPE:	TITLE V
HW TYPE:	TSD
SOLID TYPE:	
WATER TYPE:	INDUSTRIAL
BRANCH:	Energy

ECED CONTACT:
Collier, Melissa

BASIN:

AIR PROGRAMS ☑ SIP ☐ PSD ☐ NSPS ☐ NESHAPS ☐ MACT

Mississippi Department of Environmental Quality
Office of Pollution Control

Pemits

PROGRAM	PERMIT TYPE	PERMIT #	MDEQ PERMIT CONTACT	ACTIVE
AIR	TITLE V	096000012	Burchfield, David	YES
WATER	PRE-TREATMENT	MSP090300	Collins, Bryan	YES
HAZ. WASTE	TSD	HW8854301		NO
HAZ. WASTE	EPA ID	MSD007027543		NO
HAZ. WASTE	TSD	HW8854301	Stover, Wayne	YES
GENERAL	BASELINE	MSR22005		NO
WATER	SOP	MSU081080		NO

Compliance Actions

MEDIA	ACTIVITY TYPE	SCHEDULED	COMPLETED	INSPECTED B
HAZ WASTE	Financial Record Review	1/18/00	1/18/00	Twitty, Russ
WATER	CMI - PRETREATMENT			Whittington, Darryail
WATER	CEI - PRETREATMENT	9/30/00		Twitty, Russ
WATER	CEI - NA	9/30/00		Twitty, Russ
HAZ WASTE	Compliance Evaluation Inspection	9/30/00		Twitty, Russ
AIR	State Compliance Inspection	9/30/00		Twitty, Russ
WATER	CEI - NA	3/2/99	3/2/99	Twitty, Russ
HAZ WASTE	Compliance Evaluation Inspection	3/2/99	3/2/99	Twitty, Russ
AIR	State Compliance Inspection	3/2/99	3/2/99	Twitty, Russ

KOPPERS INDUSTRIES

David B:

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX and U. S. Mail

November 25, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RECEIVED
DEC - 2 1996
Dept. of Environmental Quality
Office of Pollution Control

RE: Air Pollution Control Permits to Construct and Operate
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

I received the draft permit modifications you faxed today. KII appreciates the extra effort of DEQ to prepare this permit modification to allow operation of our wood fired boiler at Tie Plant. I have reviewed the proposed modifications. I see no problem in these changes and believe we can operate within them. Please proceed to public notice on these changes.

Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc with proposed changes:
T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

THE GREAT SEAL OF THE STATE OF MISSISSIPPI

Mississippi Department of Environmental Quality
Office of Pollution Control

AIR DIVISION

P.O. Box 10385
Jackson, MS 39289-0385
Fax Number (601) 961-5742

FAX TRANSMITTAL SHEET

Please deliver the following 4 Pages including transmittal sheet to:

Name: Mr. Steve Smith

Fax No.: (412) 227-2423

Location: Koppers Industries, Inc.

From: David Burchfield

Phone No: (601) 961-5250

Message: Here are the three draft pages of the modified Permit to Construct as we discussed. The rest of the permit will not be modified in this action.
Please let us know by tomorrow morning if you approve.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX and U. S. Mail

November 4, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Air Pollution Control Permits to Construct and Operate
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

This letter is in response to the draft Title 5 Permit to Operate, dated October 29, 1996 and to the letter relating to questions about the Prevention of Significant Deterioration (PSD) dated November 1, 1996.

Concerning the draft permit, Koppers Industries, Inc. (KII) is extremely pleased that the DEQ has completed the permit to this point. I have reviewed the permit in detail and KII has no further comments or issues to raise. Please proceed with the public notice and EPA review as soon as possible.

Concerning the questions about the plant's PSD major source status and changes to that status over time, KII has concluded and strongly holds that the Grenada plant was not, is not, and will not be a PSD major source. The maximum potential emissions estimates KII provided in the Title 5 application were based on physical and operational design, along with the highest probable business or operational volume estimates. Use of the much higher allowable emission levels, as calculated under Ms regulation APC-S-1, instead of levels which are limited by the physical and operational designs are not appropriate for the sources at the KII plant and may result in significant damage to this company.

In order to facilitate the process and better clarify the PSD status of the plant, a PSD Major Source Evaluation has been prepared and is attached to this letter. It may be that some minor changes are justified in KII's potential to emit emissions inventory. However, it is also clear that a wide margin exists between total potential emissions of the plant and the PSD major threshold. If such changes are necessary, they can be resolved while the permit proceeds with public comment and EPA review.

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

November 1, 1996

Mr. Stephen T. Smith, Environmental Program Manager
Koppers Industries, Inc.
436 Seventh Avenue, K-1800
Pittsburgh, PA 15219-1800

File Copy

Dear Mr. Smith:

Re: Facility No. 0960-00012
Tie Plant, Mississippi

From our phone conversation of October 30, 1996, I understand that the turbine-generator may have been constructed after the effective date of Prevention of Significant Deterioration (PSD) regulations, 40 CFR 52.21. Also, I understand that at a later date equipment was constructed giving the facility the capability to sell electricity on a co-generation basis. I also understand that both boilers supply steam to the same loads and that the boilers are still not utilized to maximum capacity. Therefore, each of these changes in operation of the boiler(s) may be considered modifications. It is also apparent that this facility was a PSD major source of particulate matter (PM) prior to these projects. Therefore, it is necessary that your company make PSD applicability determinations for both of these projects.

It is necessary to resolve this issue prior to issuance of the Title V permit.

If you have any questions, please contact me at (601) 961-5250.

Sincerely,

David Burchfield
Air Facilities Branch

DB

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

October 29, 1996

Mr. Stephen T. Smith, Environmental Program Manager
Koppers Industries, Inc.
436 Seventh Avenue, K-1800
Pittsburgh, PA 15219-1800

File Copy

Dear Mr. Smith:

Re: Koppers Industries, Inc.
Facility No. 0960-00012
Tie Plant, Mississippi

Enclosed is a draft Title V Permit to Operate which we feel addresses all requirements applicable to your facility. Section I of this draft contains references and excerpts or paraphrasings of regulatory language which are applicable to all facilities subject to the Title V program but which you may not have specifically identified as applicable requirements in your application. This section of the permit is needed to meet the requirements of the Title V regulation and the corresponding Federal requirements. Since Section I is universally applicable, it is not subject to being altered or removed on a case-by-case basis. If you do not understand any of the Section I requirements, we will be happy to explain them further.

The remainder of the permit *per se* contains the applicable requirements which are specific to your facility. All requirements expressed in these parts of the permit should have already been identified during the application review process and **there should be no requirements with which you are not already complying or with which you are not capable of complying based on your certification of compliance in your application.** You should now review the details of this permit carefully and notify us immediately, in writing, of any specific requirements with which you disagree. **Once the permit is issued, you will be expected to comply with all requirements.** Difficulty in complying will not be cause to reopen the permit.

Because this draft permit should hold no surprises, we feel ten days should be adequate for your review and written response; therefore, we expect to proceed with publication of public notice on this permit on November 22, 1996. We would appreciate your letter of response even if you have no comments, questions, or issues to raise.

H:\WP\0960\00012\DNMTVDL6

Upon your agreement with the draft Title V Permit to Operate, we will proceed concurrently with the 30-day public notice period and the 45-day EPA review. If there are no adverse comments received from either the public or EPA, will then recommend issuance of the final permit to the Permit Board.

If you have any questions, please contact me at (601) 961-5250.

Sincerely,

David Burchfield
Air Facilities Branch

DB
Enclosure

cc: Mr. Thomas L. Henderson, Plant Manager

KOPPERS INDUSTRIES

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, MS 38960

Telephone: (601) 226-4584
FAX: (601) 226-4588

David B.

RECEIVED
OCT 22 1996
Dept. of Environmental Quality
Office of Pollution Control

DATE: October 21, 1996

TO: David Burchfield
Air Facilities Branch
Mississippi Department of Environmental Quality

FROM: Thomas L. Henderson

SUBJECT: Facility No. 960-00012
Tie Plant, Mississippi
Grenada County
Air Permit Reporting For Points AA-001, AA-002

Dear Mr. Burchfield:

Attached is the quarterly data for 3rd quarter 1996 for reporting point AA-001. Reporting point AA-002 was not operated in the 3rd quarter.

Contained in the report for point AA-001 is the Opacity and Cell temperture readings as required by our operating permit. The periods of operation are indicated by "Process Up", periods of shutdown are indicated by "Process Down". The higher Opacity readings in the report are a result of an increase or decrease in steam demand.

Please call me at (601) 226-4585 if you have any questions.

Sincerly,

Thomas L. Henderson

Thomas L. Henderson

cc: Steve Smith

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

RECEIVED
DEC - 6 1996
Dept. of Environmental Quality
Office of Pollution Control

November 25, 1996

Certified Mail No. P 380 049 598

Ms. Maryhardy McElwain, Director
Elizabeth Jones Library
P. O. Box 130
Grenada, MS 38901-0130

Dear Ms. McElwain:

Re: Koppers Industries, Inc.
Facility No. 0960-00012
Tie Plant, Mississippi

Enclosed is a copy of the public notice for comment on the request by Koppers Industries, Inc. for modification of the permit to construct at the facility in Tie Plant, Mississippi. Please post this notice in the library.

Also, enclosed is a copy of information pertinent to Koppers Industries' request. This information should be kept on hand for review by the public until December 29, 1996, after which it may be discarded. The public may photocopy all or any portion of this information, but it should not leave the library.

Finally, enclosed please find a duplication of this letter with a place for your signature and the date acknowledging your receipt of the package and your agreement to carry out our request. A self-addressed stamped envelope is enclosed for your convenience.

We are attempting to better keep the public informed of and involved in this Office's actions regarding permitting of new and expanding industry. Since access to the public library is so convenient for so many we hope to use these facilities as often as possible. Your cooperation in this matter is greatly appreciated.

If you have any questions, please let me know at 961-5171.

Very truly yours,

David Burchfield
Air Facilities Branch

DB
Attachment
cc: Ms. Susan Thornhill, OPC

Received & Agreed to By: Maryhardy B. McElwain, Director 12-4-96
(Name and Title) **(Date)**

H:\WP\0960\00012\PN-PTCM2.7

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

November 25, 1996

Mr. Doug Neeley, Branch Chief
Air & Radiation Technology Branch
Air, Pesticides & Toxics Management Division
U.S. Environmental Protection Agency - Region 4
100 Alabama Street, SW
Atlanta, GA 30303

File Copy

Dear Mr. Neeley:

Re: Koppers Industries, Inc.
Facility No. 0960-00012
Tie Plant, Mississippi

Enclosed is a copy of the draft Permit to Construct and public notice for comment on the above referenced facility.

If you have any questions, please contact David Burchfield of our staff.

Very truly yours,

Wayne B. Anderson, P.E.
Chief, Air Facilities Branch

Enclosure
cc: Ms. Susan Thornhill, OPC

OFFICE OF POLLUTION CONTROL, P. O. BOX 10385, JACKSON, MS 39289-0385, (601) 961-5171

H:\WP\0960\00012\PN-PTCM2.4

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

November 25, 1996

Postmaster
Grenada, MS 38901

Dear Sir:

File Copy

Re: Koppers Industries, Inc.
Facility No. 0960-00012
Tie Plant, Mississippi

Please post the attached public notice in your post office on or before Friday, November 29, 1996.

If you are unable to do so or if you have any questions, please advise.

Very truly yours,

David Burchfield
Air Facilities Branch

Attachment
cc: Ms. Susan Thornhill, OPC

OFFICE OF POLLUTION CONTROL, P. O. BOX 10385, JACKSON, MS 39289-0385, (601) 961-5171

H:\WP\0960\00012\PN-PTCM2.3

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

November 25, 1996

Ms. Michelle Morman
The Daily Sentinal-Star
158 S. Green St.
P. O. Box 907
Grenada, MS 38901

File Copy

Dear Ms. Morman:

Enclosed herewith is a legal notice to be published in your newspaper on Friday, November 29, 1996. Also, please furnish this office with statement and proof of publication in duplicate.

If there are questions concerning this legal notice, please contact David Burchfield of my staff at (601) 961-5250.

Very truly yours,

Dwight K. Wylie, P.E.
Chief, Air Division

DKW:DB
Enclosure
cc: Ms. Pamela Mitchell, OPC (1100)
Ms. Susan Thornhill, OPC

H:\WP\0960\00012\PN-PTCM2.2

MESSAGE CONFIRMATION

11/25/96 15:47

NO.	MODE	BOX	GROUP
987	TX		

DATE/TIME	TIME	DISTANT STATION ID	PAGES	RESULT	ERROR PAGES	S.CODE
11/25 15:46	01'17"	412 227 2423	004	OK		0000

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX and U. S. Mail

November 25, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Air Pollution Control Permits to Construct and Operate
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

I received the draft permit modifications you faxed today. KII appreciates the extra effort of DEQ to prepare this permit modification to allow operation of our wood fired boiler at Tie Plant. I have reviewed the proposed modifications. I see no problem in these changes and believe we can operate within them. Please proceed to public notice on these changes.

Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc with proposed changes:
T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

MESSAGE CONFIRMATION

11/26/96 10:51

NO.	MODE	BOX	GROUP
017	TX		

DATE/TIME	TIME	DISTANT STATION ID	PAGES	RESULT	ERROR PAGES	S.CODE
11/26 10:50	01'06"	601 226 8310	002	OK		0000

KOPPERS INDUSTRIES

Burchfield

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX

September 13, 1996

RECEIVED
SEP 19 1996
DEQ-OPC

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Title 5 Permit Application
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

As we discussed yesterday and today, a summary of process rates for the Koppers Industries, Inc. Grenada plant manufacturing processes follows.

PROCESS	PRODUCTION BASIS	PROCESS RATE (tn/hr)	Allowable E (APC-S-1, Par. 3.6)	
			lb/hr	tn/yr
Plant Wide	(7,000,000 cf/yr X (45 lb/cf wet wood + 8 lb/cf treatment)) / 2000 lb/tn / 8760 hr/yr	21.2	32	139
Wood Preserving	Same as above.	21.2	32	139
Lumber Mill Cyclone	(2,000,000 cf/yr X 45 lb/cf) / 2000 lb/tn / 300 day/yr / 10 hr/day	15.0	25	110
Pole Kiln	(1,600,000 cf/yr X 45 lb/cf) / 2000 lb/tn / 8760 hr/yr	4.1	11	46
Pole Peeler	(440 cf/hr X 45 lb/cf) / 2000 lb/tn	9.9	19	83
Wood Fuel Preparation and Handling	Limited by fuel elevator rate to	12.0	22	95

Mr. David Burchfield, Ms DEQ

September 13, 1996

I think I have covered all sources subject to the the limits of APC-S-1, Section 3.6. Obviously, actual emissions from all of these souces are much less than these allowables.

Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

KOPPERS INDUSTRIES

Burchfield

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX

RECEIVED
SEP 19 1996
Dept. of Environmental Quality
Office of Pollution Control

September 13, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Air Pollution Control Permits to Construct and Operate
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

I accordance with Part III, Paragraph 8 of Air Pollution Control Operating Permit and our discussion of this morning, Koppers Industries, Inc. hereby provides notice that on February 21, 1996 maximum production rate in the wood fired boiler was reached. This occurred during the Stack Test, high fire scenario, where the average steam production rate was 29,600 pounds per hour and fuel burning rate was 7,318 pounds per hour.

These conditions represented approximately 99% of design steam rate and 78% of maximum allowable fuel infeed rate. The fuel feed rate was lower than allowable because the test was designed to evaluate conditions in which used treated wood is used for fuel. Since the treated wood fuel has a higher fuel value, less fuel was required.

Koppers did not provide this notice earlier because we believed the notice requirement would apply when our ability to maintain the maximum rate with treated wood fuel was reached. This will not happen until the new fuel handling equipment is installed and our permit has been modified to allow the higher NOX emissions found during the test.

Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX

September 13, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Air Pollution Control Permits to Construct and Operate
Facility No. 0960-00012
Tie Plant, Grenada County, MS

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Sincerely,

Stephen T. Smith
Environmental Program Manager

Mr. David Burchfield, Ms DEQ

September 13, 1996

cc: T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX

September 13, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Title 5 Permit Application
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

As we discussed yesterday and today, a summary of process rates for the Koppers Industries, Inc. Grenada plant manufacturing processes follows.

PROCESS	PRODUCTION BASIS	PROCESS RATE (tn/hr)	Allowable E (APC-S-1, Par. 3.6)	
			lb/hr	tn/yr
Plant Wide	(7,000,000 cf/yr X (45 lb/cf wet wood + 8 lb/cf treatment)) / 2000 lb/tn / 8760 hr/yr	21.2	32	139
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Pole Kiln	(1,600,000 cf/yr X 45 lb/cf) / 2000 lb/tn / 8760 hr/yr	4.1	11	46
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Mr. David Burchfield, Ms DEQ

September 13, 1996

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Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via FAX

September 6, 1996

Mr. David Burchfield (FAX No. 601-961-5742)
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Title 5 Permit Application
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

The answers to the questions you mentioned in our phone conversation yesterday follow:

Wood Waste Energy received a Permit to Construct and Permit to Operate, dated January 23, 1996. Both permits have number 0960-00026. These permits cover the wood grinding operation, which includes handling the wood on the infeed and fuel handling through the grinder and into Koppers provided containers, either truck trailers or a silo. The grinder will be driven by electic motors.

The compressed air recievers, identified as tanks 21 and 22 in the application, contain only compressed ambient air which is used to drive air operated equipment and for initial air in the treating process. There is no emission from these tanks or from the compressor, which is electric driven. Tank data is as follows:

DATA	TANK 21	TANK 22
Diameter	6 feet	7 feet
Length	60 feet	40 feet
Date of construction	1903	1903

There is just one cyclone in use at the plant. It is at the lumber mill and is used to collect sawdust from the end trim saws and lumber planers. These is one other cyclone at the tie mill, which is not used.

 412 227 2423

Mr. David Burchfield, Ms DEQ

September 6, 1996

I believe this answers all the questions you had. Please call me at (412)227-2677 if you have any additional questions.

Sincerely,

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY

JAMES I. PALMER, JR.

EXECUTIVE DIRECTOR

August 8, 1996

Mr. Thomas L. Henderson, Plant Manager
Koppers Industries, Inc.
Tie Plant Road
P. O. Box 160
Tie Plant, MS 38960

Source File Copy

Dear Mr. Henderson:

Re: Creosote Odor Complaint
Grenada, Mississippi

Due to a complaint of creosote odors in Grenada, Office of Pollution Control personnel performed an inspection of the Koppers Industries, Inc. facility, Facility No. 0960-00012, at Grenada, Mississippi on July 3, 1996. There were no apparent air pollution problems.

If you have any questions, please contact us.

Very truly yours,

David Burchfield
Air Facilities Branch

DB

KOPPERS INDUSTRIES

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, MS 38960

Telephone: (601) 226-4584
FAX: (601) 226-4588

David B.

RECEIVED
JUL 30 1996
Dept. of Environmental Quality
Office of Pollution Control

DATE: July 26, 1996

TO: David Burchfield
Air Facilities Branch
Mississippi Department of Environmental Quality

FROM: Thomas L. Henderson

SUBJECT: Facility No. 960-00012
Tie Plant, Mississippi
Grenada County
Air Permit Reporting For Points AA-001, AA-002

Dear Mr. Burchfield:

Attached is the quarterly data for 2nd quarter 1996 for reporting point AA-001. Reporting point AA-002 was not operated in the 2nd quarter.

Contained in the report for point AA-001 is the Opacity and Cell temperture readings as required by our operating permit. The periods of operation are indicated by "Process Up", periods of shutdown are indicated by "Process Down". The higher Opacity readings in the report are a result of an increase or decrease in steam demand.

Please call me at (601) 226-4585 if you have any questions.

Sincerly,

Thomas L. Henderson

Thomas L. Henderson

cc: Steve Smith

KOPPERS INDUSTRIES

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, Ms.

TELECOPY
****

DATE: 7-26-96 TOTAL NO. OF PAGES 7
(Including this page)

TO: Dave Burchfield

FAX NO.: 601-226-4588

FROM: T. Henderson

IF YOU DO NOT RECEIVE ALL PAGES, CALL

FAX No. -601-226-4588

David Burchfeild,

David B.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

June 21, 1996

Mr. David Burchfield
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RECEIVED
JUN 24 1996
Dept. of Environmental Quality
Office of Pollution Control

RE: Title 5 Permit Application
Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

Koppers Industries, Inc. (KII) has determined that the Grenada plant at Tie Plant, MS has the potential to emit major levels of pollutants and is, therefore, submitting a revision to our previously submitted Synthetic Minor Application to make it a Title 5 Application. KII conducted stack tests of our boiler on February 20-21, 1996 as required by the permit to construct. Results indicated that the major source threshold for hydrochloric acid was exceeded when pentachlorophenol treated wood fuel was used. Additionally, use of the continuous emission monitor (CEM) in conjunction with stack test results indicates that major levels of carbon monoxide (CO) may be emitted when untreated wood fuel is used.

Based on the new information resulting from the February 1996 stack test it is now clear that KII will need a Title 5 Air Permit. The operating restrictions needed to maintain the non-major status as listed in the Synthetic Minor Application are no longer necessary since the plant has the potential to be a major source. KII has reviewed and revised our operating conditions and emissions inventory calculation to reflect new data from the stack test, incorporate more conservative (higher) assumptions in emission factors, and maximum reasonable business or process volumes. The additional small emission sources identified during your plant visit have been included.

Since the application package for a Title 5 permit is basically the same as for a synthetic minor permit, I am making this application as a revision to the application submitted on March 31, 1995 and revised October 2, 1995. However, in order to avoid confusion with new and revised forms, this submittal is being made as a complete package to replace the previous submittals. To assist in your review, a list of new and revised forms in this application compared to the most recent submittal is included in the attached table. An updated Summary of Emission Points is attached. Where few changes to previously submitted forms are made, I have simply lined out the old information and written the new information next to the old. The supplemental information provided to you, dated December 18, 1995, in response to your questions remains valid.

Note that while this data indicates that KII has the potential to be a major source, actual emissions are not expected to exceed major levels due to lower actual business levels and process rates.

KII has concluded that the New Source Performance Standards(NSPS) of 40 CFR 60, Subpart Dc, Small Industrial, Commercial, Institutional, Steam Generating Units, do not apply to Source 01, Wood Fired Boiler. The recent change of fuel to used treated wood should not be considered to be a modification per the NSPS regulations because that change does not cause an increase in any air pollutant. The previous permit, issued November, 1985, allowed use of wood preserving sludge to be co-fired with wood fuel. Up to 400 pounds per hour of pentachlorophenol-in-oil and/or creosote sludge or 800 pounds per hour of creosote only sludge could be burned mixed with wood fuel. Creosote sludge would often contain 50% or more creosote. Pentachlorophenol-in-oil sludge would contain 5% or more pentachlorophenol. These constituent levels and resulting feed rates exceed the constituent feed rates measured in the 2/96 treated wood fuel stack test by over 10 times. The BTU value of the wood mixed with sludge would have exceeded the value of treated wood fuel, resulting in NOX emission rates at least as high as measured in the stack test. Although SO2 and HCl emissions were not tested under the previous permit conditions, fuel sulfur and chlorine levels would have caused emissions of these constituents to have exceeded the emission rates measured in the test burn. Thus, KII concludes that use of treated wood fuel will not cause any increase in emissions compared to emissions under the allowed operations of the November, 1985 permit. Therefore, the change to treated wood fuel does not constitute a modification. The wood fired boiler is an existing source which has not been modified or reconstructed after June 9, 1989 and is not subject to NSPS.

Similarly, the NSPS Subpart AAA, Residential Wood Heaters, does not apply to the wood stove in the shop because it was installed in 1985 and the applicability date for that Subpart is July 1, 1988.

Concerning the revised Permit to Construct which will result from this application, attached are suggested permit conditions. For the wood fired boiler, these conditions are intended to provide assurance of good combustion conditions, especially when treated wood fuel is being used, and are based on the results of the 2/96 stack test.

As you understand from our previous discussions, obtaining a permit to allow use of treated wood fuel in the cogeneration boiler is critical to our business. Our customer, the Illinois Central Railroad has a large inventory of used ties on hand which we have committed to recycle to energy. They are very anxious for us to proceed. Your efforts to speed the permitting process will be appreciated.

I also apologize for putting you to the trouble of these permit changes and thank you for your patience in working with me. Please call me at (412)227-2677 if you have questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
cc w/o attachments:
G. W. Caric, K-1726
John Heller, K-2050
W. R. Donley, K-2000
R. D. Collins, K-1701

FILE COPY

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY

JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

May 31, 1996

Mr. Ronald Murphy
Plant Manager
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphy:

Re: Title V Air Operating Permit Program
Facility No. 0960-00012

The Title V Operating Permit program fee for 1996 will soon be due. The attached reporting form shows your source's allowable emissions as currently recorded in our files.

As provided by Section 49-17-32 of the Mississippi Code Annotated, you may elect to use either actual or allowable (potential) emissions in determining the annual quantity of emissions to be used in assessing fees. Acceptable methods for calculating actual annual emissions were specified in Section 49-17-30 and are listed on the attachments. If you choose the basis of actual emissions, you must submit the attached reporting form showing your inventory of emissions for the 1995 calendar year by July 1, 1996, along with the calculations and the methodology used in determining the inventory. If an inventory of emissions has not been received by July 1, 1996, the allowable emissions shown on the attached reporting form will be used as the basis for this year's assessment of fees.

This fee is due September 1st of each year. An invoice which reflects the billable emissions and amount due will be sent to you prior to September 1, 1996. If you have a billing address different from the address at which you received this letter, please indicate the correct billing address in your response. The invoice you receive will allow you to make quarterly payments if you so desire.

If you have any questions concerning this letter or the attachments, feel free to contact me at (601) 961-5171.

Sincerely,

David Burchfield
Air Facilities Branch

Attachments

T5LET4.236

KOPPERS
INDUSTRIES

David B.

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

May 6, 1996

Mr. Don Watts
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: **Stack Test Report and Request for Minor Permit Modification**
Facility No. 0960-00012
Koppers Industries, Inc.
Tie Plant, Grenada County, MS

Dear Mr. Watts:

Enclosed are two copies of the Stack Test Report for the test conducted at the Koppers Industries, Inc. (KII) boiler on February 20-21, 1996. As documented by the report, most parameters are well within the requirements of the permit. Issues related to some other parameters need to be addressed.

Based on the test results and as I have discussed previously with Mr. Burchfield, KII recognizes that emission levels indicated by the test for some constituents exceed levels allowed by the permit. KII hereby requests that a minor permit modification be made to adjust some parameters to allow continued operation of the boiler in compliance with the Permit to Operate. The permit changes KII requests are listed and discussed below.

1. **Revise the Nitrogen Oxides emission limitation to 15.63 pounds per hour and 68.47 tons per year.**

This level is based on the high fire average NOX emission rate of 10.05 lb/hr, fuel feed rate of 7318 lb/hr, and an allowance for variability of 20% which results in a NOX factor of 3.30 lb-NOX per ton of fuel. This factor is then multplied by the maximum permitted fuel feed rate of 9375 lb/hr to obtain the maximum hourly emission rate. The NOX emission level included in the application by KII and subsequently put into the permit was based on KII's expectation of NOX emissions from this boiler based on results at other boilers.

This level of NOX emission is still low by standards of most boilers. In a rule proposed by EPA in 61 Federal Register, January 19, 1996 on Nitrogen Oxides Emission Reduction Program, EPA cited emission rate factors for known low NOX boilers (LNBs). Emission factors for these LNBs ranged from 0.262 to .484 lb-NOX/mmBTU. The factor for the KII boiler in this test was 0.232 lb-NOX/mmBTU, significantly lower than the low NOX boilers cited by EPA. Thus, the emission level requested by KII is at a "low" level and does not exceed major source levels.

2. **Revise the emission limitation for Carbon Monoxide to 5.63 pounds per hour and 24.64 tons per year when burning any amount of treated wood fuel and 19.62 pounds per hour and 85.94 tons per year when burning only untreated wood fuel.**

With CO emissions during the stack test under 2 lb/hr, no problem is expected in meeting the existing permit limit for CO when treated wood fuel is being used. Additionally, KII has found that burning a mixture of approximately 50% untreated and 50% treated wood fuel also results in low CO emissions. However, when only untreated wood fuel is burned, the fuel quality is such that the boiler cannot be adjusted to maintain CO levels within the permit limits. KII, therefore, proposes a dual permit standard with a low limit applying whenever any amount of treated wood fuel is being burned and a higher level applying when only untreated wood fuel is in use. As discussed in the test report, the small particle size of the locally available untreated wood fuel which restricts air flow through the fuel pile is believed to be mostly responsible for the higher CO levels. The higher proposed levels equate approximately to 300 ppm.

It remains KII's intention and expectation that most of the time the boiler will be run primarily on treated wood fuel. However, KII also expects that at times it will be necessary to run on untreated wood fuel due to low availability of the treated material.

The proposed dual standard is proposed in recognition of concerns that poorer combustion, which may be indicated by higher CO levels, could cause increased emissions of products of incomplete combustion and/or wood preservative constituents. The revised limitation will assure that treated wood fuel will only be used when the lowest emission levels can be maintained.

3. **Revise the temperature limitation to read; "The temperature in the Woodwaste Boiler must be maintained at 1140 °F or greater when firing treated wood.**

This revision is justified by the stack test results and corresponds to conditions of the low fire test scenario. The stack test was designed to show 1) the relationship between temperature probes just above the combustion cells and the probes located near the top of the secondary combustion chamber near the superheat tubes and 2) that the required DRE could be maintained during low fire conditions. Temperatures in the secondary chamber were found to be about 100 and 400°F lower under low fire and high fire conditions, respectively, than measured just above the cells. Both low and high fire condition DREs significantly exceeded the required DRE of 99.9%.

4. **Revise the description of the boiler in Part II to read; "... the 60 MMBTU/hr Wellons/Nebraska Woodwaste Boiler ..."**

The actual heat input during the high fire test was 52 mmBTU. In order to allow for fuel variability in which wetter fuel will require more heat input, the test input level is increased by 15%.

These revisions should be processed as a minor permit modification because the changes do not relate to any practical change in operations, the change of fuel to allow treated wood fuel has recently gone through public comment, and the increased emissions will not change the plant's Title 5 permitting status. Additionally, it is likely that re-permitting will occur in the near future due to the expected issuance of a Synthetic Minor permit.

KII is unwilling to risk the further capital expense of installing the new silo, fuel grinder, and handling equipment until we can reach agreement with MS DEQ on the revised permit conditions. Therefore, you prompt review and consideration of the test report and this permit modification request will be greatly appreciated. Additionally, I will welcome the opportunity to meet with you and/or other DEQ staff concerning this permit.

Please call me at (412)227-2677 if you have questions or would like to arrange a meeting.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: T. L. Henderson, Grenada, MS
M. Sylvester, Grenada, MS
W. A. Meisinger, Harmarville Tech. Center
Bob Daniel, Columbus, MS

cc w/o attachment:
Danny Russell, EML, P. O. Box 655, Ridgeland, Ms 39158
G. W. Caric, K-1726
W. R. Donley, K-2000
John Heller, K-2050
T. D. Loadman, K-2000
R. D. Collins, K-1701

See separate file for stack test report received May 8, 1996.

KOPPERS INDUSTRIES

RECEIVED
APR 25 1996
Dept. of Environmental Quality
Office of Pollution Control

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, MS 38960

Telephone: (601) 226-4584
FAX: (601) 226-4588

David B.
0960-00012

DATE: April 18, 1996

TO: David Burchfield
Air Facilities Branch
Mississippi Department of Environmental Quality

FROM: Thomas L. Henderson

SUBJECT: Facility No. 960-00012
Tie Plant, Mississippi
Grenada County
Air Permit Reporting For Points AA-001, AA-002

Dear Mr. Burchfield:

Attached is the quarterly data for 1st quarter 1996 for reproting points AA-001, AA-002.

Please call me at (601) 226-4585 if you have any questions.

Sincerly,

Thomas L. Henderson
Thomas L. Henderson

cc: Steve Smith

412 227 2423

KOPPERS INDUSTRIES

RECEIVED
FEB 15 1996
DEQ-OPC

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

February 2, 1996

Mr. David Burchfield
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

Post-It™ brand fax transmittal memo 7671

To D. Burchfield		From S. Smith	# of pages ▸ 1
Co. DEQ		Co. Koppers	
Dept.		Phone # 412-227-2677	
Fax # 601-961-5742		Fax # 412-227-2423	

RE: Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

As we discussed on January 31 and as indicated in my letter to you on January 25, 1996, KII did begin burning treated wood in the boiler on January 25, 1996, at which time "initial startup" began as described in paragraph III(2) of the permit. This letter constitutes notification of initial startup as required by paragraph III(8) of the Operating Permit.

The stack test remains scheduled for the week of February 19, 1996. We expect sampling to take place on February 20 and 21. I remain hopeful that we can reach agreement on requirements of the stack test plan soon enough that we can keep this schedule.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada, MS
W. A. Meisinger, Harmarville Tech. Center
Bob Daniel, Columbus, MS
Danny Russell, EML, P. O. Box 655, Ridgeland, Ms 39158

David B.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

February 2, 1996

Mr. David Burchfield
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RECEIVED
FEB - 7 1996
Dept. of Environmental Quality
Office of Pollution Control

RE: Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

As we discussed on January 31 and as indicated in my letter to you on January 25, 1996, KII did begin burning treated wood in the boiler on January 25, 1996, at which time "initial startup" began as described in paragraph III(2) of the permit. This letter constitutes notification of initial startup as required by paragraph III(8) of the Operating Permit.

The stack test remains scheduled for the week of February 19, 1996. We expect sampling to take place on February 20 and 21. I remain hopeful that we can reach agreement on requirements of the stack test plan soon enough that we can keep this schedule.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada, MS
W. A. Meisinger, Harmarville Tech. Center
Bob Daniel, Columbus, MS
Danny Russell, EML, P. O. Box 655, Ridgeland, Ms 39158

MEMO

To: Jay Barkley
From: David Burchfield
Date: February 8, 1996
Subject: Koppers Industries, Inc.
Grenada, Mississippi
Facility No. 0960-00012
Stack test proposal for woodwaste boiler submitted 1/29/96

Problems identified include:

1) The notification of testing was received January 29, 1996 for testing February 19-22, 1996, which is only 21 days prior to testing, not 30 as the permit requires.

2) Koppers has begun firing treated wood in the boiler. They are currently receiving waste from several sources. The waste is being ground on their site by a contractor who is not permitted, and there are apparently air emissions from the grinding process, material handling, and there may even be an internal combustion engine providing power.

3) The permit says "Total woodwaste feed rate shall not exceed 9,375 lbs/hr.". This seems to imply that feed rate requires monitoring by weighing. Koppers lacks the necessary weighing equipment. Koppers proposes that estimates of feed rate are sufficient. I disagree. What do you think?

4) Koppers measures steam flow rate with an orifice meter connected to a recording instrument. I think that we need to know the orifice plate number, have its calibration data, use another meter to verify the pressure differential during the test, and compare to the recorded data.

5) PTO & PTC require 1600°F or greater when firing treated wood. They want to monitor temperature at locations where temperature is less than 1600°F in order to maximize probe life. They intend to propose to demonstrate that combustion temperature is 1600+ when probe shows less. This appears acceptable and I verbally told them I think it can be done administratively without permit changes.

6) Koppers letter says "KII expects to begin burning treated wood in the boiler today, January 25, 1996, at which time "initial startup" will begin as described in paragraph III(2) of the permit. This letter constitutes notification as required by paragraph III(8) of the Operating Permit of initial startup." Is this sufficient, or must the notification be after startup has occurred?

7) In determining whether DRE of 99.9% has been met, Koppers wants to subtract out any levels they can detect when burning untreated wood. This appears unacceptable, since the permit requires a DRE of 99.9% no matter whether the pollutants come from the wood or the treating chemicals.

8) Koppers has not identified all the HAPs that may be emitted. Do they need to?

9) Koppers has not addressed emissions of dioxins and furans, though conditions are apparently excellent for the generation of these compounds. Emission rates will probably be less than ten tons per year for each individual HAP. Input levels are probably not detectable. Emission rates can be expected to be higher than input rates, resulting in a negative DRE. This means that the required DRE cannot be expected to be achieved. What do we tell them on this situation?

10) Koppers proposes to show that the required DRE is met when total HAP pollutants emitted is less than the total HAP input rate and not show the required DRE for each individual HAP. This does not appear to be acceptable.

11) EPA contacts referred me to documents "Incineration of Creosote and Pentachlorophenol Wood Preserving Wastewater Treatment Sludges" PB90-130493 EPA 600S289060 and "Guidance for the Reregistration of Pesticide Products Containing Coal Tar/Creosote as the Active Ingredient" EPA 540-RS88-066 of April 1988. Renita Lane says she can get copies for $25.00 to $30.00 each. They apparently indicate "over 500 compounds injurious to human health" are found in creosote, tell which ones may be expected in what amounts from different coals. Ordering these may tell us what particular HAPs we should be concerned with.

12) Koppers plans to construct auxiliary equipment after passing the stack test, then notify us that construction is complete and maximum production rate is achieved. It appears that doing so may require retesting. I have tried to clarify this with Mr. Smith. Exactly what, if anything, should we say about this?

13) If testing fails to demonstrate compliance, Koppers proposes to "make additional boiler modifications which would allow operating in compliance and repeat the stack testing. I verbally warned Mr. Smith that modifications which increase the potential to emit would apparently require further permitting and that burning treated wood after failing the test is not permitted. We apparently need to say that in writing also.

14) I believe that the fuel testing scheme proposed is inadequate. Four samples per run would be better, with grinding of all material collected in each sample, compositing a portion of each sample, and submission to the lab of the resulting sample for each run.

David B.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

January 25, 1996

RECEIVED
JAN 29 1996
Dept. of Environmental Quality
Office of Pollution Control

Mr. David Burchfield
Air Facilities Branch
Department of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: Facility No. 0960-00012
Tie Plant, Grenada County, MS

Dear Mr. Burchfield:

Enclosed is the boiler stack test plan for Koppers Industries, Inc. (KII) plant in Tie Plant, MS. As we discussed a few days ago, this plan is required by our Permit to Construct, dated November 8, 1994.

KII expects to begin burning treated wood in the boiler today, January 25, 1996, at which time "initial startup" will begin as described in paragraph III(2) of the permit. This letter constitutes notification as required by paragraph III(8) of the Operating Permit of initial startup.

The stack test is scheduled for February 19 through 22, 1996. Please advise as soon as possible if a pretest conference will be required. I recognize that we are now somewhat less that 30 days prior to the test and ask for your help in meeting this schedule. It is likely we can work out any issues or changes needed by phone.

After you have a chance to review this plan, please call me to discuss it.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada, MS
W. A. Meisinger, Harmarville Tech. Center
Bob Daniel, Columbus, MS
Danny Russell, EML, P. O. Box 655, Ridgeland, Ms 39158

David B.

KOPPERS INDUSTRIES

RECEIVED
JAN 29 1996
Dept. of Environmental Quality
Office of Pollution Control

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, MS 38960

Telephone: (601) 226-4584
FAX: (601) 226-4588

DATE: January 26, 1996

TO: David Burchfield
Air Facilities Branch
Mississippi Department of Environmental Quality

FROM: Ron Murphey

SUBJECT: Facility No. 960-00012
Tie Plant, Mississippi
Grenada County
Air Permit Reporting For Point AA-002

Dear Mr. Burchfield:

Attached is the quarterly data for 4th quarter 1995 for reprot ing point AA-002.

Please call me at (601)226-4585 if you have any questions.

Sincerly,

Ronald P Murphy

Ronald P. Murphey

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY

JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

October 26, 1995

Certified Mail No. P 380 049 433

File Copy

Mr. Ronald P. Murphey, Plant Manager
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphey:

Re: Facility No. 0960-00012
Tie Plant, Mississippi
Grenada County

On September 27, 1995, we received your letter of September 18, 1995 which included the delinquent fuel oil sulfur content reports for Emission Point AA-002. Also, on October 12, 1995, we received your letter of October 9, 1995 with the attached third quarter fuel oil sulfur content report for Emission Point AA-002.

While we agree that the temperature, opacity, and CO reports for Emission Point AA-001 need not be submitted until after you begin burning treated wood, we again remind you that Part III, condition 8 of the Permit To Operate requires that you provide in writing the date of startup and the date maximum production rates are reached for the firing of treated wood not later than ten days after the actual date.

If you have any questions or if we can be of assistance, please let us know.

Very truly yours,

David Burchfield
Air Facilities Branch

DB

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

August 29, 1995

Certified Mail No. P 390 339 711

Mr. Thomas L. Henderson, General Yard Foreman
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

File

Dear Mr. Henderson:

Re: Facility No. 0960-0001
Tie Plant, Mississippi
Grenada County

As discussed in our phone conversation of July 27, 1995, we are unable to locate in c submissions of the quarterly reports for Emission Points AA-001 and AA-002 requi Permit to Operate issued November 8, 1994. If these reports are being sent, please r are addressed to:

Mississippi Office of Pollution Control
Air Division
P. O. Box 10385
Jackson, MS 39289-0385

Please provide copies of the three past due reports for each emission point.

Also, we understand that no treated wood is yet being burned in Emission Point AA Woodwaste Boiler. Please be aware that Condition 8, Part III of the Permit to Oper that you "provide in writing the date of startup and the date maximum production r reached for the firing of treated wood" within ten days after the actual date.

If you have any questions or if we can be of assistance, please let us know.

Very truly yours,

David Burchfield
Air Facilities Branch

DB

OFFICE OF POLLUTION CONTROL, P. O. BOX 10385, JACKSON, MS 39289-0385, (601) 961-5171

Mr. David Burchfield, Ms DEQ

October 2, 1995

The above described changes and additions require changes in the following forms, which are also attached:

- Application Addendum for a Synthetic Minor Operating Permit - Restrictions for the wood grinder operation have been added and the new form has been signed.
- Section E, Pole Kiln, has been revised to reflect different material quantity and emission amount.
- An additional site plan, Figure 2, has been attached which shows all the plant property and on which the pole peeler is located.
- Flow Diagram has been revised to show sources added in this submittal.

The following Application Update Instructions will assist you in updating the original application with this submittal. I believe this provides all the information requested in your letter. Please call me at (412)227-2677 if you have questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada Plant, MS

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

August 24, 1995

Mr. Ronald Murphey, Plant Manager
Koppers Industries, Inc.
Tie Plant Road
P. O. Box 160
Tie Plant, MS 38960

File Copy

Dear Mr. Murphey:

Re: Facility No. 0960-00012
Tie Plant, Mississippi
Grenada County

This letter is to inform you that we have received all the major components required for the review process and your Synthetic Minor Operating Permit application is complete. Additional items may be identified during the detailed review.

If you have any questions or if we can be of assistance, please let us know.

Sincerely,

David Burchfield
Air Facilities Branch

DB

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

August 24, 1995

Mr. Ronald Murphey, Plant Manager
Koppers Industries, Inc.
Tie Plant Road
P. O. Box 160
Tie Plant, MS 38960

File Copy

Dear Mr. Murphey:

Re: Facility No. 0960-00012
Tie Plant, Mississippi
Grenada County

A cursory review of the Synthetic Minor Operating Permit Application for this facility reveals that the items on the enclosed list need to be addressed. Additional items may be identified during the detailed review.

If you have any questions or if we can be of assistance, please let us know.

Sincerely,

David Burchfield
Air Facilities Branch

DB

enclosure

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
[illegible], PA 15219-1800

[illegible] 227-2001

via FAX and U. S. Mail

[illegible]

[illegible] Burchfield
[illegible] Branch
Dept. of Environmental Quality
Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289-0385
FAX 601-961-5742

RE: Facility No. 0900-00012, Tie Plant, MS

Dear [illegible] Burchfield:

[illegible] response to your letter of July 10, 1995 to Mr. Ronald Murphey, Plant Manager of Koppers Industries Inc. (KII) plant at Tie Plant, MS. Your letter pointed out an inconsistency in the [illegible] emission rate and permitted emission rate of the oil fired Murray boiler, AA-002. I have [illegible] files related to the permit and emission calculations and found an error in my calculations which I believe lead to this inconsistency.

[illegible] calculations were based on the emission rate for an oil fired boiler [illegible] 250 gallons per hour. However, the boiler has a rated capacity of [illegible], or 206 gallons per hour. When this correct fuel use rate is entered into [illegible], the estimated actual particulate emission rate is 0.41 pound per hour [illegible] permitted level of 0.45 pound per hour. A copy of the corrected [illegible] attached. This correction does not change any of the [illegible] reported on the Annual Emissions Reporting Form submitted to [illegible]

[illegible] confusion my error may have caused. Please call me at (412)227-267[illegible]

[illegible]

David B.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001

via FAX and U. S. Mail

July 17, 1995

RECEIVED
JUL 21 1995
Dept. of Environmental Quality
Office of Pollution Control

Mr. David Burchfield
Air Facilities Branch
Dept. of Environmental Quality
Office of Pollution Control
P. O. Box 10385
Jackson, MS 29289-0385
FAX 601-961-5742

RE: Facility No. 0960-00012, Tie Plant, MS

Dear Mr. Burchfield:

I am writing in response to your letter of July 10, 1995 to Mr. Ronald Murphey, Plant Manager of Koppers Industries Inc. (KII) plant in Tie Plant, MS. Your letter pointed out an inconsistency in the reported emission rate and permitted emission rate of the oil fired Murray boiler, AA-002. I have reviewed my files related to the permit and emission calculations and found an error in my calculations which I believe lead to this inconsistency.

The emission calculations were based on the emission rate for an oil fired boiler presented in AP-42 for a fuel use rate of 250 gallons per hour. However, the boiler has a rated capacity of 3.4 gallons per minute, or 204 gallons per hour. When this correct fuel use rate is entering into the emission spreadsheet, the estimated actual particulate emission rate is 0.41 pound per hour, which is less than the permitted level of 0.43 pound per hour. A copy of the corrected Emission Inventory Calculation is attached. This correction does not change any of the Actual Annual Emission Rates reported on the Annual Emissions Reporting Form submitted to your office on June 30, 1995.

I apologize for any confusion my error may have caused. Please call me at (412)227-2677 if you have questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada Plant, MS

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

July 10, 1995

File Copy

Mr. Ronald Murphey, Plant Manager
Koppers Industries, Inc.
Tie Plant Road
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphey:

Re: Facility No. 0960-00012
Tie Plant, Mississippi
Grenada County

In your June 30, 1995 submission of the Major Air Pollution Source Annual Emissions Reporting Form, you reported the Particulate Matter emission rate for Emission Point AA-002, the 28.5 MMBTU/hr fuel oil fired Murray Boiler, as 0.50 pounds per hour. The Permit to Operate limits the Particulate Matter emission rate to 0.43 pounds per hour. Please explain this apparent violation. Your written response by July 17, 1995 is requested.

If you have any questions, please let us know.

Sincerely,

David Burchfield
Air Facilities Branch

DB

KOPPERS INDUSTRIES

Koppers Industries, Inc.
P.O. Box 160
Tie Plant, MS 38960

Telephone: (601) 226-4584
FAX: (601) 226-4588

David B.

D. Burchfield

June 30, 1995

Mr. Wayne B. Anderson. P.E., Chief
Air Facilities Branch
Department of Environmental Quality
P.O. Box 10385
Jackson, Ms.39289-0385
Re: Facility No. 0960-00012

Certified Mail #
P 140 485 495

Dear Mr. Anderson,

Please find enclosed our Title V Air Operating Permit Program, Annual Emissions Reporting form and attached calculations for the 1994 calendar year.

If you have any questions concerning this submittal, please call Tommy Henderson or myself at 226-4584.

Sincerely,

Ron Murphey

Ron Murphey
Plant Manager

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

June 1, 1995

Mr. Ron Murphy
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphy:

Re: Title V Air Operating
Permit Program
Facility No. 0960-00012

The Title V Operating Permit program fee for 1995 will soon be due. The attached reporting form shows your source's allowable emissions as currently recorded in our files.

As provided by Section 49-17-32 of the Mississippi Code Annotated, you may elect to use either actual or allowable (potential) emissions in determining the annual quantity of emissions to be used in assessing fees. Acceptable methods for calculating actual annual emissions were specified in Section 49-17-30 and are listed on the attachments. If you choose the basis of actual emissions, you must submit the attached reporting form showing your inventory of emissions for the 1994 calendar year by July 1, 1995, along with the calculations and the methodology used in determining the inventory. If an inventory of emissions has not been received by July 1, 1995, the allowable emissions shown on the attached reporting form will be used as the basis for this year's assessment of fees.

This fee is due September 1st of each year. An invoice which reflects the billable emissions and amount due will be sent to you prior to September 1, 1995. If you have a billing address different from the address at which you received this letter, please indicate the correct billing address in your response. The invoice you receive will allow you to make quarterly payments if you so desire.

If you have any questions concerning this letter or the attachments, feel free to contact the Air Facilities Branch at (601) 961-5171.

Sincerely,

Wayne B. Anderson, P.E., Chief
Air Facilities Branch

WBA:sr
Attachments

T5LET3.156

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

via Express Mail

RECEIVED
APR - 3 1995
DEQ-OPC

March 31, 1995

Air Permitting Branch
Office of Pollution Control
Mississippi Dept. of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

RE: **APPLICATION FOR SYNTHETIC MINOR OPERATING PERMIT FOR KOPPERS INDUSTRIES, INC. , TIE PLANT, MS FACILITY NO. 0960-00012**

Dear Sir or Madam:

Enclosed is an Application for a Synthetic Minor Operating Permit for the Koppers Industries, Inc. (Koppers) wood preserving plant located in Tie Plant, MS. There are many identifiable point and fugitive sources at the plant, many of which have been combined for reporting purposes. I would like to explain some parts of this application package.

For clarity in reviewing this application, I first call your attention to the Flow Diagram and to the table following this letter titled Summary of Emission Points. The Source No. for each source on the table corresponds to the source numbers (circled) on the Diagram. The right column of the table indicates where emissions for sources for which emissions are combined and reported with another source are reported.

Next, note pages beginning at the tab for Emission Calculation Tables. The first table is titled Emission Inventory Calculation. Following this table are a series of Emission Inventory Calculation tables. For each scenario, there are three pages of the calculation sheets which calculate and summarize plant wide estimated emissions for the conditions assumed under each scenario. The Estimated Actual Emissions scenario best represents current operating conditions. The Maximum Potential Emissions scenario represents the "potential to emit" level of operations assuming all equipment operates at full power 365 days per year without consideration of other practical considerations. Three scenarios are included presenting maximum operating conditions which maintain the plant within non-major emission levels. The Synthetic Maximum (Mixed) scenario assumes roughly the same business mix as currently exists, but increased to reasonably achievable levels of business. The other two are based on potential changed in business mix. The Synthetic Maximum (High Creo) scenario assumes no pentachlorophenol treatment and that all production is shifted to creosote treatment. The Synthetic Maximum (High Penta) scenario assumes very high demand for pentachlorophenol treated poles causing one of the three creosote treating cylinders to be converted to pentachlorophenol treatment with reasonably high creosote treatment volumes continuing in the remaining two cylinders. Koppers is seeking a permit which allows operations under either of these "Synthetic Maximum" scenarios to maintain the most possible operational flexibility.

Also note that this plant recently received a new state operating permit. The unit specific Proposed Allowable Emissions stated in Section D are the same as in the existing permit.

I have tried to make this application clear and complete, but expect questions will arise. Koppers will welcome the opportunity to meet with your staff as the permit is being drafted. Please call me at (412)227-2677 if you have questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada Plant, Tie Plant, MS (UPS Next Day)

cc w/o attachment:
W. R. Donley, K-2050
R. D. Collins, K-1701

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY

JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

April 6, 1995

File Copy

Mr. Stephen Smith, Environmental Manager
Koppers Industries Inc.
436 Seventh Avenue
Pittsburgh, PA 15219

Dear Mr. Smith:

Re: Facility No. 0960-00012
Tie Plant, Mississippi

This letter is to acknowledge receipt of your application on April 3, 1995 for a Synthetic Minor Operating Permit.

If you have any questions, please write or call me at (601) 961-5250.

Sincerely,

David Burchfield

David Burchfield
Air Facilities Section

DB

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY

JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

February 7, 1995

Mr. Ron Murphy
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphy:

Re: Facility No. 0960-00012

On October 20, 1993, the Environmental Protection Agency (EPA) proposed a regulation governing accidental release prevention. This rule proposes requirements for a risk management program for facilities that have more than a threshold quantity of a regulated substance. Also, the list of the regulated substances and the threshold quantities was promulgated January 31, 1994.

We have attached a copy of the proposed regulation, the promulgated regulated substance list and a "fact sheet" which clarifies some of the provisions. We are sending this information to assist you in completing Section C of your Title V Permit Application. We understand that EPA will not be promulgating the final risk management program regulation until some time in 1996.

If you have any questions, please contact Joseph Curro at (601) 961-5655, Kirk Shelton at (601) 961-5333, or me at (601) 961-5390.

Sincerely,

Melanie Magee

Melanie Magee
Air Toxics Branch

MM
Enclosures

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

January 25, 1995

Mr. Ron Murphy
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphy:

Re: Facility No. 0960-00012

As you know, Mississippi's Title V operating permit program becomes effective on January 27, 1995. At that time, the provisions of Section 112(g) of the Clear Air Act as amended in 1990 also become effective. Under Section 112(g), a major source of hazardous air pollutants proposing new construction, reconstruction, or modifications must perform a Case-by-Case Maximum Achievable Control Technology (MACT) determination when no federal promulgated MACT standard exists. The MACT determination must reflect the maximum degree of reduction of HAP emissions taking into consideration the costs of achieving such emission reductions, and any non-air quality health and environmental impacts, and energy requirements.

The MACT determination must be submitted to our office prior to construction in order to establish federally enforceable emission limitations. Once reviewed, the permitting authority will issue a Notice of MACT Approval containing the MACT emission limitation and any other requirements.

The proposed regulations (40 CFR Part 63, Subpart B) for implementing Section 112(g) were published in the Federal Register on April 1, 1994. This regulation and the proposed Guidelines for MACT Determinations under Section 112(g) [EPA 450/3-92/007(b)] are available in the EPA library or by contacting this agency. At this time, we are expecting further EPA guidance on the modification provision of the proposed regulations.

Enclosed is a promulgation schedule for source category MACT standards. If you have any questions, please call me at 601-961-5538 or Richard Sumrall at 601-961-5791.

Sincerely,

D. Anthony Robinson
Air Toxics Branch

MACT.FIN.157

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

FILE COPY

January 12, 1995

Certified Mail No. Z 200 270 468

Mr. Ron Murphy
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, MS 38960

Dear Mr. Murphy:

Re: Facility No. 0960-00012

As you know from previous correspondence, the referenced facility is one that we have identified as subject to Title V, and, as such, requires a Title V Operating Permit.

On Wednesday, December 28, 1994, EPA promulgated in the Federal Register full approval of our Title V Operating Permit Program. The effective date of this promulgation is January 27, 1995. In accordance with State and Federal requirements the deadline for submission of the facility's application for a Title V Operating Permit is **January 27, 1996.** Enclosed is an application form. This form must be used for the Title V application.

Also enclosed is an addendum to the Title V application forms necessary for making application for a synthetic minor Operating Permit. Please note that the facility must have either been issued a synthetic minor Operating Permit or have submitted a Title V application by January 17, 1996. If you plan on obtaining a synthetic minor Operating Permit, we suggest that you submit that application by April 1, 1995, to facilitate obtaining that permit prior to the deadline for filing your Title V application.

If you have any questions, feel free to contact us.

Very truly yours,

Don Watts, Chief
Air Permitting Branch

DW:sr
Enclosure

OFFICE OF POLLUTION CONTROL, P. O. BOX 10385, JACKSON, MS 39289-0385, (601) 961-5171

T5APPSUB.FIN.212

DEPT OF ENVIRONMENTAL QUALITY
TITLE V AIR PERMIT FEE
P. O. Box 20325
Jackson, MS 39289-1325

** INVOICE **

*** TITLE V AIR OPERATING PERMIT FEE ***

BILL TO:
KOPPERS INDUSTRIES INC

P O BOX 160
TIE PLANT, MS 38960

INVOICE # 132
INVOICE DATE: 7/29/96

CONTACT PERSON: Alice Brown
TELEPHONE: 601-961-5572

FACILITY I.D. # 0960-00012

TERMS: DUE 9/1/96

POLLUTANT	ACTUAL OR ALLOWABLE EMISSIONS	TONS OF EMISSIONS BILLED	FEE PER TON OF EMISSIONS	TOTAL FEE
PARTICULATE MATTER	40.210	40.210	16.00	643.36
SO2	157.810	157.810	16.00	2,524.96
NOX	47.740	47.740	16.00	763.84
CO	29.370	0.000	16.00	0.00
VOC	18.880	18.880	16.00	302.08
LEAD	0.000	0.000	16.00	0.00
TRS	0.000	0.000	16.00	0.00
TOTAL HAP's (VOC)	0.000	0.000	16.00	0.00
TOTAL HAPs (Non-Voc)	0.000	0.000	16.00	0.00
CFC's / HCFC's	0.000	0.000	16.00	0.00

TOTAL ANNUAL FEE DUE 4,234.24

As per Section 49-17-30 of the MS Code, the maximum emission rate used for calculation of fees for any pollutant is 4,000 tons, with total fees not to exceed $250,000 per facility. You were billed for actual or allowable emissions based upon the option which you previously indicated.

* * * FAILURE TO REMIT PAYMENT BY THE DUE DATE MAY * * *
* * * * * * * * RESULT IN A LATE PENALTY * * * * * * * *

* *FILE COPY* *

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM
P.O. BOX 10385
JACKSON, MS 39289-0385

In accordance with Section 49-17-30, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

MDEQ Facility ID #: 0960 - 00012 SIC Code: 2491

Facility Name: Koppers Industries, Inc.

Site Address: 543 Tie Plant Road (Street Location) Tie Plant (City) MS (State) - (Zip Code)

If actual emissions are reported, they should be the actual emissions that were emitted from the facility during calendar year 1995. The annual permit fee is due on September 1st of each year.

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	20.96
SO2	157.81	3.64
NOX	47.74	31.73
CO	29.37	78.90
VOC*	18.88	40.71
TRS	0.00	0
LEAD	0.00	0
CFCs/HCFCs	0.00	0
Other	0.00	0
Total HAPs (Voc)	0.00	12.67
Total HAPs (Non-Voc)	0.00	0

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

Thomas L. Henderson Plant Manager
Signature and Title

6/18/96
Date

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

	tn/yr	Sulfur	Chlorine
Total Wood Burned:	18,768	0.01%	0.04%
Creo Wood Burned:	0	0.25%	0.04%
Penta Wood Burned:	0	0.25%	0.25%
Untreated Wood Burned:	18,768	0.01%	0.04%
Removal Efficiency (1):		70.00%	45.00%

(lb/hr): 9375

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
Particulate	2.07	lb/tn	2/96 Test	19.42	9.70
SO2	0.12	lb/tn	Mass Calc	1.13	0.56
NOX (3)	3.3	lb/tn	2/96 test	30.97	15.47
CO (2)	8.3	lb/tn	CEM	77.89	38.91
VOC	0.91	lb/tn	FR Test	8.54	4.27
HCl	0.452	lb/tn	2/96 Test	4.25	2.12
Arsenic	8.8E-05	lb/tn	AP-42	0.0008	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0002	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0012	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0029	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.0835	0.042
Nickel	5.6E-04	lb/tn	AP-42	0.0053	0.003
Selenium	1.8E-05	lb/tn	AP-42	0.0002	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.09	0.047

(1) Removal efficiencies based on 2/96 stack test.
(2) CO factor is 8.3 for 600 ppm fired on untreated fuel, 2.1 for 150 ppm fired on treated fuel.
(3) NOX factor is 3.3 for high fire, treated wood. Use 1.6 for untreated wood.

26-BOILER, FUEL OIL

Oil Burned(MGal/yr): 70.893
Fuel Use Rate(MGal/hr): 0.204
Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
Particulate	2	lb/MGal	AP-42	0.07	0.41
SO2	71	lb/MGal	AP-42	2.52	14.48
NOX	20	lb/MGal	AP-42	0.71	4.08
CO	5	lb/MGal	AP-42	0.18	1.02
VOC	0.2	lb/MGal	AP-42	0.01	0.04

Number of days boiler assumed to operate is 14

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,876,227	C. F.
Creosote Poles	134,076	C. F.
Total Creosote Wood	2,010,303	C. F.
Oil/Penta Poles	971,402	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote (VOC)	0.015	lb/cf	Form R	15.08	3.44
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.32	0.76
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.58	0.58
P-Xylenes	4.5	% in vapor	Calculation	0.66	0.15
Phenol	1.4	% in vapor	Calculation	0.21	0.05
Quinoline	1.5	% in vapor	Calculation	0.23	0.05
Toluene	26	% in vapor	Calculation	3.92	0.89
TOTAL CREO. HAP	73.63	% in vapor		11.10	2.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.86	1.11
TOTAL VOC				19.95	4.55

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.99	0.91
Naphthalene	1.37E-03	lb/cf	FR Test	1.29	0.29
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.77	0.18
Naphthalene	3.34E-03	lb/cf	FR Test	0.224	0.051
Benzene	4.23E-06	lb/cf	FR Test	0.000	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.010	0.002
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	5.59	1.27
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.001	0.000
Totals					
VOC				10.34	2.36
Naphthalene				1.51	0.34
Benzene				0.002	0.000
Toluene				0.043	0.010
Pentachlorophenol				0.001	0.000
HAP Organics (Total)				1.56	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried: 455,668 C. F.

Batch size (cf): 13000
Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
VOC	0.05	lb/cf	Alabama	11.39	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones: 1
Ave. Hours/Day: 8
Ave Days/Yr Each: 50
Total Hours: 400

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor= 1.00
s=silt content (%) of road= 10 %
S=mean vehicle speed= 15 mph
W=mean vehicle weight= 15 tons
w=mean no. of wheels= 4 wheels
p=no. wet days/year= 110 days
VMT=Veh. Mi. Traveled= 70,200 VMT

6 =No. vehicles driving
15 =Typ. miles/hr driving
2.5 =Typ. hrs driving/day
6 =Typ. d/wk driving
1 =Trtng volume factor
70,200 =Ann veh mi. traveled

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled= 240,000 CF/yr
Pole Density= 45 lb/CF
Pole Amount Peeled= 5,400 tn/yr

440 CF/hr
9.9 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated Emissions (tn/yr)	(lb/hr)
Particulate	0.350	lb/ton	AP-42	0.95	3.465

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed: 18,768 Tn/Yr; 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	2.35	3.00

35-STEAM CLEANER, NATURAL GAS FIRED

Annual Usage: 2000 hours/yr; Fuel Use Rate: 440 CF/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	12	lb/MMCF	AP-42	0.01	0.01
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	100	lb/MMCF	AP-42	0.04	0.04
CO	21	lb/MMCF	AP-42	0.01	0.01
VOC	5.8	lb/MMCF	AP-42	0.00	0.00

36-WOOD STOVE HEATER, SHOP

Annual Usage: 7.2 tn/yr; Fuel Use Rate: 0.01 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	30.6	lb/tn	AP-42	0.11	0.31
SO2	0.4	lb/tn	AP-42	0.00	0.00
NOX	2.8	lb/tn	AP-42	0.01	0.03
CO	230.8	lb/tn	AP-42	0.83	2.31
VOC	43.8	lb/tn	AP-42	0.16	0.44

37-PARTS CLEANERS, DEGREASERS

Number of units operating: 2

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.33	tn/unit/yr	AP-42	0.66	0.00

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

TOTAL PLANT EMISSIONS

Pollutant		Estimated Emissions (tn/yr)	(lb/hr)
Particulate (less fugitive)	....	20.96	15.89
SO2 (2)	....	3.64	15.05
NOX	....	31.73	19.62
CO	....	78.90	42.24
VOC(less fugitive)	....	40.71	18.32
HAPs(Organics/VOC)	....	12.67	2.89
Naphthalene	....	4.07	0.93
HAP Metals	....	0.09	0.05
HCl	....	4.25	2.12
Total HAPs	....	17.01	5.06

(2) Assumes backup boiler operating at same time as primary for number of days shown.

SUGGESTED PERMIT CONDITIONS

KII offers these suggested conditions to facilitate permit preparation and does not intend that this list is complete.

Source 01, Wood Fired Boiler

Continuous monitoring of carbon monoxide was previously included in the permit based on the assumption that treated wood fuel might be more difficult to burn than untreated wood fuel. However, the 2/96 test burn indicated that treated wood fuel burned hotter and would be less likely to results in emissions of products of incomplete combustion than use of untreated wood fuel. Additionally, combustion temperature monitoring serves as an indicator of good combustion conditions. Thus, KII recommends that continuous monitoring of CO not be required in the permit for the wood fired boiler.

Emission Limitations should reflect requirements of APC-S-1, Section 3.4(b) for PM and PM-10, Section 3.1 for opacity, and Section 4.1(c) for SO2.

Operating Limitations

> Combustion temperature should be monitored as an indicator of good combustion conditions. While treated wood fuel is being used hourly average temperature should be maintained at or above 1140°F (as indicated by probes located in the upper part of the secondary combustion chamber).
>
> If carbon monoxide monitoring is required, while treated wood fuel is being used, hourly average CO should be maintained at or below 150 ppm (corrected to 7% O2).
>
> Materials other than untreated wood, creosote treated wood, pentachlorophenol treated wood, or waste office paper shall not be burned in the boiler. The waste office paper shall be limited to paper waste generated on site by Koppers' operations and shall not contain plastic or non-combustible waste.
>
> The steam production rate shall not exceed 33,000 pounds per hour, hourly average basis. (This rate is based on 110% of rated capacity.)

Recordkeeping and Reporting Requirements

> Combustion temperatures, on continuous basis, with notations indicating when treated wood is being fired.
>
> In-stack opacity, continuous monitor.
>
> If carbon monoxide monitoring is required, CO concentration at the exit of the boiler

stack, on a continuous basis. CO monitoring system shall correct to a reference O2 concentration.

Daily steam flow charts, maintained on site for inspection.

Total steam production, no less than by quarter of the year, as indicated by steam flow totalizer.

Other Requirements

The stack test of February 20-21, 1996 has demonstrated emission rates under conditions appropriate for this permit. No further compliance demonstration testing is required.

<u>Other Sources</u>

Recordkeeping and Reporting Requirements

Records shall be maintained as needed to support annual estimates of actual emissions. These shall include:

For the Murray Oil Fired Boiler;

Fuel oil burned, by quarter, and sulfur content of the oil burned.

Dates and times of boiler operation.

Daily steam flow charts.

For Wood Preserving Processes;

Annual production, in cubic feet, of;
creosote treated lumber (including ties),
creosote treated round stock,
pentachlorophenol treated wood.

Annual usage of creosote, pentachlorophenol, and oil.

For Tie Mill with cyclone, annual production of ties, in cubic feet.

For Dry Kiln, annual volume of wood dried, in cubic feet.

For Pole Peeler, annual number of poles peeled.

APPLICATION REVISIONS

DESCRIPTION OF ITEM	REVISION
Summary of Emission Points	Sources 35 - 37 added.
Application Addendum for a Synthetic Minor Operating Permit	Deleted. No longer applicable.
Section B	Item #8 revised, updated signature.
Section C, Page 19	Changed to reflect added forms.
Section D, Source 01, Wood Fired Boiler	Various changes, including emission rates.
Section D, Source 26, Oil Fired Boiler	Changes to item 7.
Section D, Source 33, Natural Gas Space Heaters	Changes to item 7.
Section D, Source 35, Natural Gas Fired Steam Cleaner	New form.
Section D, Source 36, Wood Stove Shop Heater	New form.
Section E, Source 05, Wood Preserving Process	Revised volumes and emissions.
Section E, Source 08, Treated Wood Storage	Revised quantities.
Section E, Source 31, Pole Kiln	Revised quantities.
Section E, Source 32, Pole Peeler	Revised quantities.
Section E, Source 34, Wood Fuel Preparation and Handling	Diesel powered grinder deleted from process.
Section E, Source 37, Parts Cleaner/Degreaser	New form.
Section N, Current Applicable Requirements and Status	New form.
Emission Inventory Calculations Spreadsheets	Maximum Potential Emissions updated. Other operating scenarios deleted.
Emission Inventory Calculation Explanations	Updated with new data.
Site Plan, Figure 2	Sources added.

KOPPERS INDUSTRIES, INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Tanks in Source	Reported in Section	Control	Emission. Included With No.
01	Wood Fired Boiler		D	Multi-clone	
02	Creosote Tank Car Unloading		E		05
03	Creosote Storage Tank	12, 15	H		05
04	Creosote Work Tanks (4)	7, 8, 9, 11	H		05
05	Creosote Treating Cylinders (3)	1, 2, 4	E		
06	Creosote Lowdown Tank	20	H		05
07	Creosote Vacuum Pumps		E		05
08	Creosote Treated Wood Storage		E		
09	Creosote Fugitives from pumps, valves, flanges, and sumps		E		05
10	PCP Truck Unloading		Negligible		
11	PCP Concentrate Storage	34	H		05
12	PCP Mix Tank	32, 33	Not Used		
13	PCP Work Tanks (2)	6, *	H		05
14	PCP Treating Cylinders (2)	5, *	E		05
15	PCP Blowdown Tank	23	E		05
16	PCP Vacuum Pump		E		05
17	PCP Treated Wood Storage		E		08
18	PCP Process Fugitives from pumps, valves, flanges, sumps		E		05
19	Storm Water Tank	17	H		05
20	Waste Water Surge Tank	16	H		05
21	API Separator		E		05

Source No.	Source Name	Tanks in Source	Reported in Section	Control	Emission. Included With No.
22	Primary PCP Oil/Water Separator	30	E		05
23	Second PCP Oil/Water Separator	31	E		05
24	Reclaim Oil Dehydrators	19	H		05
25	Waste Water Biological Trmt.	26, 27, 28	Negligible		
26	Oil Fired Boiler (Backup)		D		
27	Tie Mill		E	Cyclone	
28	Fugitive Road Dust		E		
29	#2 Oil Storage Tank	14	H		05
30	Decant Tanks	10	H		05
31	Pole Kiln		E		
32	Pole Peeler		E		
33	Space Heaters		D		
34	Wood Fuel Preparation & Handling		E		
35	Natural Gas Steam Cleaner		D		
36	Wood Stove Shop Heater		D		
37	Safety Clean Parts Washers-2		F		

* Tank assumed for emission estimate.

The following tanks are not included as part of any source for the reason stated:

18, Coagulant - Insignificant source
21 & 22, Compressed Air, No emission
24, Gasoline storage for plant vehicles - Insignificant source
25, Diesel storage for plant vehicles - Insignificant source
29, Dehydrator - Not in use, no emission.

David B

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM

P.O. BOX 10385
JACKSON, MS 39289-0385

RECEIVED
JUN 19 1996
Dept. of Environmental Quality
Office of Pollution Control

In accordance with Section 49-17-30, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

MDEQ Facility ID #: 0960 - 00012 SIC Code: 2491

Facility Name: Koppers Industries, Inc.

Site Address: 543 Tie Plant Road (Street Location) Tie Plant (City) MS (State) - (Zip Code)

If actual emissions are reported, they should be the actual emissions that were emitted from the facility during calendar year 1995. The annual permit fee is due on September 1st of each year.

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	20.96
SO2	157.81	3.64
NOX	47.74	31.73
CO	29.37	78.90
VOC*	18.88	40.71
TRS	0.00	0
LEAD	0.00	0
CFCs/HCFCs	0.00	0
Other	0.00	0
Total HAPs (Voc)	0.00	12.67
Total HAPs (Non-Voc)	0.00	0

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

Thomas L. Henderson Plant Manager
Signature and Title

6/18/96
Date

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

	tn/yr	Sulfur	Chlorine
Total Wood Burned:	18,768	0.01%	0.04%
Creo Wood Burned:	0	0.25%	0.04%
Penta Wood Burned:	0	0.25%	0.25%
Untreated Wood Burned:	18,768	0.01%	0.04%
Removal Efficiency (1):		70.00%	45.00%

(lb/hr): 9375

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2.07	lb/tn	2/98 Test	19.42	9.70
SO2	0.12	lb/tn	Mass Calc	1.13	0.56
NOX (3)	3.3	lb/tn	2/96 test	30.97	15.47
CO (2)	8.3	lb/tn	CEM	77.89	38.91
VOC	0.91	lb/tn	FR Test	8.54	4.27
HCl	0.452	lb/tn	2/96 Test	4.25	2.12
Arsenic	8.8E-05	lb/tn	AP-42	0.0008	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0002	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0012	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0029	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.0835	0.042
Nickel	5.6E-04	lb/tn	AP-42	0.0053	0.003
Selenium	1.8E-05	lb/tn	AP-42	0.0002	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.09	0.047

(1) Removal efficiencies based on 2/96 stack test.
(2) CO factor is 8.3 for 600 ppm fired on untreated fuel, 2.1 for 150 ppm fired on treated fuel.
(3) NOX factor is 3.3 for high fire, treated wood. Use 1.6 for untreated wood.

26-BOILER, FUEL OIL

Oil Burned(MGal/yr): 70.893

Fuel Use Rate(MGal/hr): 0.204

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.07	0.41
SO2	71	lb/MGal	AP-42	2.52	14.48
NOX	20	lb/MGal	AP-42	0.71	4.08
CO	5	lb/MGal	AP-42	0.18	1.02
VOC	0.2	lb/MGal	AP-42	0.01	0.04

Number of days boiler assumed to operate is 14

RECEIVED
JUN 19 1996
DEQ-OPC

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,876,227	C. F.
Creosote Poles	134,076	C. F.
Total Creosote Wood	2,010,303	C. F.
Oil/Penta Poles	971,402	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote (VOC)	0.015	lb/cf	Form R	15.08	3.44
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.32	0.76
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.56	0.58
P-Xylenes	4.5	% in vapor	Calculation	0.68	0.15
Phenol	1.4	% in vapor	Calculation	0.21	0.05
Quinoline	1.5	% in vapor	Calculation	0.23	0.05
Toluene	26	% in vapor	Calculation	3.92	0.89
TOTAL CREO. HAP	73.83	% in vapor		11.10	2.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.86	1.11
TOTAL VOC				19.95	4.55

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.99	0.91
Naphthalene	1.37E-03	lb/cf	FR Test	1.29	0.29
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.77	0.18
Naphthalene	3.34E-03	lb/cf	FR Test	0.224	0.051
Benzene	4.23E-06	lb/cf	FR Test	0.000	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.010	0.002
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	5.59	1.27
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.001	0.000
Totals					
VOC				10.34	2.36
Naphthalene				1.51	0.34
Benzene				0.002	0.000
Toluene				0.043	0.010
Pentachlorophenol				0.001	0.000
HAP Organics (Total)				1.56	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried 455,668 C. F.

Batch size (cf): 13000
Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.05	lb/cf	Alabama	11.39	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70,200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70,200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	240,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	5,400	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	0.95	3.465

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 18,768 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	2.35	3.00

35-STEAM CLEANER, NATURAL GAS FIRED

Annual Usage 2000 hours/yr

Fuel Use Rate 440 CF/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	12	lb/MMCF	AP-42	0.01	0.01
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	100	lb/MMCF	AP-42	0.04	0.04
CO	21	lb/MMCF	AP-42	0.01	0.01
VOC	5.8	lb/MMCF	AP-42	0.00	0.00

36-WOOD STOVE HEATER, SHOP

Annual Usage 7.2 tn/yr

Fuel Use Rate 0.01 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	30.6	lb/tn	AP-42	0.11	0.31
SO2	0.4	lb/tn	AP-42	0.00	0.00
NOX	2.8	lb/tn	AP-42	0.01	0.03
CO	230.8	lb/tn	AP-42	0.83	2.31
VOC	43.8	lb/tn	AP-42	0.16	0.44

37-PARTS CLEANERS, DEGREASERS

Number of units operating: 2

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.33	tn/unit/yr	AP-42	0.66	0.00

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

TOTAL PLANT EMISSIONS

Pollutant		Estimated Emissions (tn/yr)	(lb/hr)
Particulate (less fugitive)		20.96	15.89
SO2 (2)		3.64	15.05
NOX		31.73	19.62
CO		78.90	42.24
VOC(less fugitive)		40.71	18.32
HAPs(Organics/VOC)		12.67	2.89
Naphthalene		4.07	0.93
HAP Metals		0.09	0.05
HCl		4.25	2.12
Total HAPs		17.01	5.06

(2) Assumes backup boiler operating at same time as primary for number of days shown.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM

P.O. BOX 10385

JACKSON, MS 39289-0385

In accordance with Section 49-17-30, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

MDEQ Facility ID #: 0960 - 00012 SIC Code: 2491

Facility Name: Koppers Industries, Inc.

Site Address: 543 Tie Plant Road (Street Location) Tie Plant (City) MS (State) - (Zip Code)

If actual emissions are reported, they should be the actual emissions that were emitted from the facility during calendar year 1995. The annual permit fee is due on September 1st of each year.

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	
SO2	157.81	
NOX	47.74	
CO	29.37	
VOC*	18.88	
TRS	0.00	
LEAD	0.00	
CFCs/HCFCs	0.00	
Other	0.00	
Total HAPs (Voc)	0.00	
Total HAPs (Non-Voc)	0.00	

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

Signature and Title

Date

METHODS FOR CALCULATION OF ACTUAL EMISSIONS

Acceptable methods of calculating actual emissions are as follows:

1. By use of emission monitoring data or direct emission measurements of the pollutant(s).

2. By use of mass balance calculations such as the amounts of the pollutant(s) entering and leaving process equipment. Where mass balance calculations can be supported by direct measurement of process parameters, then such direct measurement data shall be supplied.

3. By use of published air emission factors such as those relating release quantities to throughput or equipment type.

4. By use of engineering calculations (i.e. estimating volatilization using published mathematical formulas).

5. By use of best engineering judgements where such judgements are derived from process and/or emission data which supports the estimates of maximum actual emissions.

If the method chosen by the applicant for calculating actual emissions fails to reasonably represent actual emissions or, if the Commission determines that there is not sufficient information available on a facility's emissions, then the determination of the fee shall be based upon the permitted allowable emissions until such time as an adequate determination of the actual emissions is made. In the event of an appeal, the permit holder is required to pay the undisputed amount until such time as the appeal is resolved.

STACK TESTING PLAN

January 25, 1996

KOPPERS INDUSTRIES, INC.
GRENADA PLANT
TIE PLANT, MS

PERMIT NO. 0960-00012
EMISSION POINT AA-001
WOOD FIRED BOILER

1. INTRODUCTION

Koppers Industries, Inc. (KII) owns and operates a wood preserving plant in Tie Plant, MS, located about 6 miles south of Grenada, MS. The main products are rail road ties and utility poles. The wood drying and preserving processes utilize steam as a source of heat. The primary source of heat is the Wellons wood fired boiler. Additionally, a 750 kw electric generator is driven with excess steam which provides electric energy to the plant.

KII applied for a permit modification to allow use as boiler fuel of used railroad ties and utility poles which have been taken out of service and which would otherwise be disposed. Construction and Operating boiler permits were issued on November 9, 1994 to allow use of such fuel, following installation of required monitoring and fuel handling equipment. The permits require that, within 60 days of achieving maximum production rate and no later than 180 days after initial startup, compliance with permit limitations be demonstrated by stack testing. This is KII's plan to conduct that testing.

KII has not yet completed installation of some of the equipment which is intended to be part of the final project, including a second wood storage silo and a new wood grinder. Since these items are quite expensive and will not be needed if compliance when burning the treated wood cannot be demonstrated, KII proposes a two step process for completing the permitting process. KII will install all monitoring equipment needed and will set up to operate on treated wood fuel on a temporary basis while the test burn is conducted. After demonstrating compliance, KII will install the remaining equipment. When all equipment is installed, KII will notify Ms DEQ that construction is complete and maximum production is achieved.

It is expected that the Report for this test will demonstrate compliance. However, if this test does not demonstrate compliance, KII may either 1) withdraw the request to burn treated wood or 2) make additional boiler modifications which would allow operating in compliance and repeat the stack testing.

2. DESCRIPTION OF FACILITY

The wood fired boiler consists of a Wellons two-cell combustor, a Nebraska boiler, fuel feed equipment and silo, a multi-cyclone particulate control, stack, and monitoring equipment.

Wood fuel must be reduced to approximately 2-inch or less size for proper handling and combustion. Most fuel currently used is lumber mill waste saw cuttings. Untreated wood waste generated by Koppers activities may be burned after grinding. Other locally produced wood waste, including tree trimmings and pallets, may be ground and used for fuel. In order to burn used ties and poles, a new grinder will be set up on site which will use electric motor driven two stage grinders to process the fuel. Processed fuel is transferred into one of two silos prior to use.

Fuel burns in the Wellons combustor. A Wellons brochure is included as Attachment 1 which includes a schematic of the system. Fuel is conveyed from the silos to two surge bins, one for each combustion cell. A screw conveyor at each bin feeds fuel to a fuel cell or fire box. The lower portion of the combustor consists of two identical 5-feet diameter by 11-feet high fuel cells, in which combustion takes place. Combustion gases flow into the upper section where the boiler is mounted and heat transfer takes place. Combustion gases continue to flow through the Wellons combustion air preheater, multicone collector, induced draft fan, and then exit via the stack.

Fly ash is removed continuously from a hopper under the multiclone through a rotary valve to a drag chain and into a bin. Bottom ash is removed manually from one cell at a time, approximately once a day.

The Nebraska Boiler is a water tube type, model WTS-2-54-SH. Design capacity is 30,000 pounds of steam per hour at 150 pisg pressure. The manufacturer's data sheet for the boiler is included as Attachment 2.

Continuous Emission Monitoring (CEM) consists of an Enertec Opacity Monitor, an Horiba CO/O_2 monitor, temperature probes, and an Enertec data acquisition/reporting desktop computer system.

3. COMPLIANCE DEMONSTRATION PROCEDURE

a. Startup

It is anticipated that burning treated wood will require different adjustments to combustion air controls than are used for untreated wood due to different moisture and heat values. Therefore, a treated wood fuel startup phase will precede the stack testing. This phase is expected to last for approximately two to four weeks. The boiler adjustments will be made to optimize combustion efficiency as indicated by CO and opacity CEM results, including low, moderate, and high burn rates.

b. Test Conditions

The permit requires that compliance be demonstrated at maximum production rates and peak pollutant generation rates. For most parameters, it is expected that peak pollutant generation will coincide with maximum production. However, it is possible that certain pollutants may be generated at peak rates when the boiler is operating at minimum productions. Experience gained during the startup phase, described above, may provide reason to modify the scenarios to be tested, as described below.

In order to assure that both conditions are met, testing will be conducted at 100% and 40% of boiler output capacity, 30,000 pph and 12,000 pph, respectively. In order to consider the two primary types of treated wood to be used for fuel, a mixture of approximately 50% each creosote treated and pentachlorophenol treated wood fuel will be prepared for the test. Thus, the following test scenarios will be run:

i. 100% boiler rate with 50% penta and 50% creosote treated wood fuel. This rate is expected to by most typical of the operation. The cogeneration turbine generator system will utilize nearly all available steam in excess of the process load, allowing the boiler to run continuously at or near maximum capacity.

ii. 40% boiler rate with 50% penta and 50% creosote treated wood fuel. This rate is tentatively selected as the low end of normal operation of the boiler, which would represent conditions where the turbine generator would be off-line and process demands for steam at low range. Operation at a lower rate would be rare.

c. Emission Limitations

Compliance with Emission Limitations for PM, SO_2, NO_x, CO, and NMVOC will be shown by stack gas sampling and analysis with calculation of mass emission rates. Opacity will be demonstrated by recording of observations by a certified tester. The emission limitations to be demonstrated are listed on Table 1. Since PM-10 is a subset of PM and the limitation is the same, the result for PM will be used to apply equally to PM-10 and PM-10 will not be tested. Similarly, total hydrocarbon testing will be used to represent the more limited catagory of non-methane VOC, limited by the permit.

d. DRE Evaluations

Compliance with the minimum destruction and removal efficiency (DRE) of 99.9% for all principal organic hazardous components (POHC) will be shown by completing a mass balance of the POHC. The POHC of concern for creosote and pentachlorophenol treated wood are listed on Table 2. These constituents will be determined by sample analysis of stack gases and of fuel. Additionally, ash will be sampled and tested for total chlorine and total sulfur to assist in the mass balance calculation of these inorganic constituents. Fuel feed rate will be estimated based on both BTU value energy balance for combustion (from the stack gas analysis) and by conveyor timer and fuel loading on the conveyor.

DRE for creosote related POHC will be calculated by comparison of POHC emissions during combustion of treated wood to emissions resulting from combustion of untreated wood because many of the PAH constituents of creosote are emitted when no creosote is being burned. Thus, any increase in PAH emissions from creosote treated wood combustion compared to the background untreated wood combustion will be attributed to the creosote contained in the fuel. The increase in emissions of PAH divided by the input PAH in the fuel will be the fraction emitted and not destoyed. Untreated wood emissions will be based on stack tests from the same Grenada boiler conducted in 1988 when untreated wood fuel was being used. Since not all PAH constituents were determined in that test, as shown in Table 3, only those measured will be used.

Compliance with the 99.9% DRE standard will be based on total PAH, as opposed to considering each individual PAH constituent separately.

e. Potential to Emit

Potential to emit priority and hazardous air pollutants will be calculated based on emission factors calculated from the stack test. In the case of constituents associated with only one of the two types of treated wood fuel, emission factors will be calculated for the portion of the input fuel associated with that constituent. Potential emissions will then be calculated for burning 100% of each fuel type and the potential to emit will be the highest rate of the two for each constituent. These results will be compared to emissions included in the Synthetic Minor Air Permit Application and revisions will be made to the Application if any constituents are significantly higher than expected.

4. SAMPLING AND TEST PLAN

a. Stack Gas Emission Testing

The stack sampling and testing plan has been completed by Environmental Monitoring Labs, Inc. (EML) and is included as Attachment 3. In addition, CO, O_2, and opacity will be continuously measured and recorded by the continuous emission monitoring (CEM) system.

b. Fuel Testing

Fuel samples will be collected as described below. Composite samples will consist of a minimum of four (4) subsamples collected at points and times to assure that the sample is representative of the material in the test burn. Prior to submittal to the laboratory, composite samples will be thoroughly mixed in a clean plastic or stainless steel bowl. A representative sample will be prepared for the labortory by taking material from the bowl, grinding it to sawdust size particles, and placing it in a liter sample jar until the jar is approximately half full. This will be mixed by shaking and/or stirring. The sample jar will then be sealed, labeled, and submitted to the laboratory under chain-of-custody. Each sample will be tested to determine the constituents listed on Table 4.

i. Unmixed Fuel - Fuel data will be obtained to estimate constituent levels in the each type of treated wood fuel, creosote and pentachlorophenol, and in the fuel mixture to support the calculation of DRE and of potential to emit. Composite fuel samples will be collected during the grinding of the fuel mix while the type of wood treatment can be best determined by visual examination and will be representative of the fuel used to make the fuel mixture.

ii. Mixed Fuel - A composite sample of the mixed fuel will be collected during the test burn by periodically collecting a sample of fuel from the conveyor feeding the boiler. The composite will be a mixture of a minimum of three samples collected in equal volume and equal time intervals over the test cycle. One composite will be collected for each scenario. Additionally, moisture content will be measured at the plant lab immediately following the test burn so that the amount of moisture lost during sample preparation and shipping can be determined.

c. Ash Testing

One composite sample each of fly ash and bottom ash will be collected durning the 100% firing rate test burn scenario. Testing will be conducted to support the mass balance calculations for sulfur and chlorine. Additionally, at the end of the 100% firing rate test, the weight of collected fly and bottom ash will be measured or estimated.

d. Combustion Temperature

Temperature probes have been installed in the boiler at two levels. The lower level probes consist of two probes placed in the mid-section of the upper cumbustion chamber, below the boiler tubes. The temperature probes at this level were used during the 1988 stack test and are the basis for the minimum combustion temperature requirement in the permit. Experience indicates that the temperatures, turbulence, and overall exposure experienced at the lower level result in frequent failure of the temperature probes.
The upper level probes are placed in the heat exchanger part of the boiler where the combustion gas flow turns from the inner side to the outer side of the boiler tube wall so that the temperature will be lower than experienced by the lower level probes. KII intends to demonstrate that the upper (cooler) probes provide the needed assurance of good combustion temperatures, but at a point where the probes will last longer. The probes are connected to the data collection system for automatic reporting.

e. Fuel Feed Rates

The fuel feed system does not have a fuel feed rate measuring system. Feed rates will be estimated by multiple methods and a best estimate will then be produced using professional judgement. The methods include the following:

i. During the test, the treated wood fuel will be fed to the conveyor by a front-end loader. The loader operator will keep a log of how many scoops are delivered to the conveyor during the test. Sample scoops will be collected in a container and weighed to determine the typical weight of fuel per scoop. Feed rate will then be calculated.
Alternatively, if the fuel is fed from the silo for the test, then a timer will be connected to the drag chain conveyor controller. The drag chain speed and typical fuel volume per foot of conveyor will be field measured. Fuel input will be calculated based on run time, speed, and typical load.

ii. The rate and total amount of steam produced during the test will be measured and recorded by the steam flow meter. The amount of fuel required to produce that amount of steam will be calculated, utilizing measured fuel heat value, moisture content, and boiler efficiency.

iii. The input heat amount will be calculated from the stack gas analysis results and the amount of fuel will then be calculated based on the measured heat value of the fuel.

5. STACK TEST REPORT

A stack test report will be completed and submitted to MsDEQ following the test burn and receipt of test results. The report will be submitted within 60 days of completion of stack testing. The report will include the following:

a. Narrative description of test procedures and scenarios run.

b. Description of problems encountered and any variations from test plan.

c. Tabular summaries of all test results and calculated emission rates.

d. Tabular summary of DRE results.

e. Conclusions, including evaluation of permit compliance.

f. Appendices including raw data sheets, CEM reports, laboratory test results, and calculations for flow and mass rates.

TABLE 1
EMISSION LIMITATIONS

CONSTITUENT	EMISSION LIMITATION
Particulate Matter (PM)	0.30 gr/dscf, not to exceed 6.75 lbs/hr and 29.57 tons/yr.
Sulfur Dioxide (SO_2)	20.63 lbs/hr and 90.36 tons/yr
Nitrogen Oxides (NO_x)	6.56 lbs/hr and 28.73 tons/yr
Carbon Monoxide (CO)	5.63 lbs/hr and 24.64 tons/yr
Volatile Organic Compounds (NMVOC)	4.27 lbs/hr and 18.70 tons/yr
Opacity	40%
PM-10	0.30 gr/dscf, not to exceed 6.75 lbs/hr and 29.57 tons/yr.
Destruction Removal Efficiency (DRE)	99.9% for principal organic hazardous components (POHC)

TABLE 2
PRINCIPAL ORGANIC HAZARDOUS CONSTITUENTS

FUEL SOURCE	CONSTITUENT
Creosote Treated Wood	Naphthalene
	Acenaphthylene
	Acenaphthene
	Fluorene
	Phenanthrene
	Anthracene
	Fluoranthene
	Pyrene
	Benzo(a)anthracene
	Chrysene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Benzo(a)pyrene
	Dibenzo(a,h)anthracene
	Benzo(g,h,i)perylene
	Indeno(1,2,3-c,d)pyrene
Pentachlorophenol treated wood	Pentachlorophenol
	Hydrogen Chloride (HCl)
	Total chlorophenols

TABLE 3
DRE CALCULATION
SAMPLE

FUEL FEED RATE(lb/hr): 8000

CONSTITUENT	FUEL CONTENT (mg/kg)	CONSTIT. FEED RATE (lb/hr)	TREATED FUEL EMISSION (lb/hr)	UNTREAT FUEL EMISSION (lb/hr)	TREATED EMISSION INCREASE (lb/hr)	DRE (less-background) (%)	DRE (zero-background) (%)
Naphthalene	1620	12.96	4.730E-03	5.500E-04	4.180E-03	99.9677%	99.9635%
Acenaphthylene	7550	60.40	4.870E-04	1.600E-03	-1.113E-03	100.0000%	99.9992%
Acenaphthene	464	3.71	6.400E-05	7.700E-04	-7.060E-04	100.0000%	99.9983%
Fluorene	2570	20.56	1.580E-04	1.500E-04	8.000E-06	100.0000%	99.9992%
Phenanthrene	7760	62.08	3.684E-04		3.684E-04	99.9994%	99.9994%
Anthracene	2550	20.40	3.300E-05		3.300E-05	99.9998%	99.9998%
Fluoranthene	4930	39.44	8.070E-05	1.160E-03	-1.079E-03	100.0000%	99.9998%
Pyrene	4210	33.68	7.700E-05	7.700E-04	-6.930E-04	100.0000%	99.9998%
Benzo(a)anthracene	1660	13.28	1.100E-05		1.100E-05	99.9999%	99.9999%
Chrysene	1590	12.72	2.500E-05	1.500E-04	-1.250E-04	100.0000%	99.9998%
Benzo(b)fluoranthene	689	5.51	3.600E-06		3.600E-06	99.9999%	99.9999%
Benzo(k)fluoranthene	250	2.00	2.600E-06		2.600E-06	99.9999%	99.9999%
Benzo(a)pyrene	407	3.26	1.800E-06		1.800E-06	99.9999%	99.9999%
Dibenzo(a,h)anthracene	293	2.34	1.900E-06		1.900E-06	99.9999%	99.9999%
Benzo(g,h,i)perylene	211	1.69	7.400E-06		7.400E-06	99.9996%	99.9996%
Indeno(1,2,3-c,d)pyrene	123	0.98	3.200E-06		3.200E-06	99.9997%	99.9997%
Carbozole	1700	13.60	6.400E-05		6.400E-05	99.9995%	99.9995%
Total PAH		308.62			9.686E-04	100.000%	100.0000%
Pentachlorophenol	9000	72.00	3.400E-03		3.400E-03	99.9953%	99.9953%
Hydrogen Chloride (HCl)	6000	48.00	2.000E-01		2.000E-01	99.5833%	99.5833%
Total chlorophenols		0.00			0.000E+00	100.0000%	ERR

TABLE 4
FUEL AND ASH TESTING

CONSTITUENT	TEST METHOD	CREO FUEL	PENTA FUEL	MIX FUEL	ASH
Chlorine	ASTM D-808	X	X	X	X
Sulfur	ASTM D-3177	X	X	X	X
PAH	EPA 8270	X	X	X	
Chlorinated Phenols inc. Pentachlorophenol	EPA 8270	X	X	X	
Moisture Content	ASTM D-2216	X	X	X	X
Heat value	ASTM D-240	X	X	X	

WELLONS
WOOD FIRED

BOILER SYSTEMS

CONTRACT DATA

BOILER

NEBRASKA BOILER COMPANY ORDER NO.: JM-1074

PURCHASER: Koppers Company, Inc.
Pittsburgh, Pennsylvania

INSTALLATION: Koppers Company, Inc. Forest Products Div.
Tie Plant, Mississippi

NATIONAL BOARD NO.: 1764 N.B.C. SERIAL NUMBER: 2D- 1806

BOILER TYPE & NO.: Watertube WTS-2-54-SH

CONVECTION HEATING SURFACE: 3,547 Sq. Ft. Net. Eff.

RADIANT FURNACE HEATING SURFACE: 593 Sq. Ft. Net. Eff.

TOTAL HEATING SURFACE: 4,140 Sq. Ft. Net. Eff.

SUPERHEATER HEATING SURFACE: 118.04 Sq. Ft.

DESIGN PRESSURE: 200 PSIG

OPERATING PRESSURE: 150 PSIG

TEMPERATURE OF FEEDWATER TO BE FURNISHED TO UNIT: 212°F.

CONTINUOUS STEAM CAPACITY: 30,000 PPH APP. 1000 HP JB

WATER CAPACITY WHEN FLOODED: 33,990 LB. 4,080 GAL.

WATER CAPACITY AT OPERATING LEVEL: 24,505 LB. 2,942 GAL.

TUBES 2 INCH O.D. TOTAL TUBES: 592

nebraska boiler company, inc.

AIR EMISSIONS SAMPLING AND TEST PLAN
FOR
KOPPERS INDUSTRIES
GRENADA PLANT
WOOD WASTE BOILER

Tie Plant, Mississippi
January 2, 1996

FACILITY NO. 0960-00012
EMISSION POINT NO. AA-001

Koppers Industries
436 Seventh Avenue, K-1800
Pittsburgh, Pennsylvania 15219

Contact: Stephen T. Smith
ph: 412/227-2677

Prepared By:
Environmental Monitoring Laboratories
Ridgeland, Mississippi
✹ 601/856-3092 ✹

ENVIRONMENTAL MONITORING LABORATORIES, INC.

P.O. Box 655 ⊖ 624 Ridgewood Road
Ridgeland, Mississippi 39158

phone: 601/856-3092
fax : 601/853-2151

January 2, 1996

Subject: Koppers Industries - Tie Plant, Mississippi
Wood Waste Boiler - Stack Emissions Test Plan And Protocol

Koppers Industries, Inc. has retained Environmental Monitoring Laboratories to perform air emissions testing at their treated wood products facility near Grenada, Mississippi. Stack emissions of PM, SO_2, NOx, CO, and VOC (as C) and opacity are to be measured from the wood waste boiler. Additionally, DRE and emissions of POHC associated with creosote and pentachlorophenol are to be determined. These parameters are to be measured under three operating modes.

Results will be reported in a table similar to the one below.

	PM		SO2	NOx	CO	VOC (as C)	% Opacity	POHC
	#/hr	gr/dscf	#/hr.	#/hr.	#/hr.	#/hr.	hi six min.	% DRE
MODE 1								
MODE 2								
MODE 3								
Permit Limits	6.75	0.30	20.63	6.56	5.63	4.27	40	> 99.9

Personnel involved in the testing project will be identified, including those individuals from Koppers, from Environmental Monitoring Laboratories, and from regulatory agencies

Following is an outline describing the testing and reporting protocol. It is in a format identical to the format of the final report.

AIR EMISSIONS SAMPLING AND TEST PLAN
FOR KOPPERS INDUSTRIES, INC.
GRENADA PLANT
WOOD WASTE BOILER

Tie Plant, Mississippi
January 2, 1996

CONTENTS

REPORT CERTIFICATION

I certify that I have examined the information submitted herein, and based upon my inquires of those responsible for obtaining the data or upon my direct acquisition of data, I believe the submitted information is true, accurate and complete.

Signed ______________________________

Daniel G. Russell

1.0 Test Results:

Tables similar to the one(s) below will be constructed for each test.

1.1 Mode 1: 100% steam rate, 100% creosote treated waste

1.1.1 PM/CO/NOx/SO2/VOC:

Run No.		1	2	3	AVG.
Date		1/1/96	1/1/96	1/1/96	------
Time Start		0934	1054	1210	----
Time End		1036	1155	1312	----
PARTICULATE EMISSIONS	#/hr				
PARTICULATE EMISSIONS	gr/dscf				
PARTICULATE EMISSIONS	#/MM Btu				
CO EMISSIONS	#/hr				
CO EMISSIONS	ppm				
CO EMISSIONS	#/MM Btu				
SO2 EMISSIONS	#/hr				
SO2 EMISSIONS	ppm				
SO2 EMISSIONS	#/MM Btu				
NOx EMISSIONS	#/hr				
NOx EMISSIONS	ppm				
NOx EMISSIONS	#/MM Btu				
VOC EMISSIONS	#/hr				
VOC EMISSIONS	ppm				
VOC EMISSIONS	#/MM Btu				
HEAT INPUT	MM Btu/hr				
EXCESS AIR	%				
VOLUMETRIC FLOWRATE	acfm				
VOLUMETRIC FLOWRATE	dscfm				
VELOCITY	ft./sec.				
STACK TEMPERATURE	°F				
MOISTURE	%				
SAMPLE RATE	% isokinetic				

1.1.2 POHC Emissions and DRE

Run No.		1	2	3	AVG.
Date		8/18/94	8/18/94	8/18/94	------
Time Start		1356	1516	1633	----
Time End		1458	1617	1735	----
SPECIES EMISSIONS	grams/hr				
Napthalene					
Acenapthlene					
Acenaphthene					
Fluorene					
Phenanthrene					
Anthracene					
Fluoranthene					
Pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Benzo(a)pyrene					
Dibenzo(a,h)anthracene					
Benzo(g,h,i)perylene					
Indeno(1,2,3-c,d)pyrene					
Carbozole					
Pentachlorophenol					
Total chlorophenols					
VOLUMETRIC FLOWRATE	acfm				
VOLUMETRIC FLOWRATE	dscfm				
VELOCITY	ft./sec.				
STACK TEMPERATURE	°F				
MOISTURE	%				
SAMPLE RATE	% isokinetic				

2.0 Source Description:.
A brief description the boiler will be provided here. Boiler operating conditions will be briefly addressed here and reference will be made to operation records provided in Appendix D.

A description of the stack and sampling location will be provided here. A sketch of the stack and illustration of sample point location will be provided in Appendix A.

3.0 Test Procedures:
Test procedures used will be those described in the Code of Federal Regulations, Title 40, Part 60, Appendix A. Specifically, Method 1 will be used to determine the number of sample points, Method 3 to determine oxygen and carbon dioxide content of the stack gas, and Method 5 to determine flow rates, moisture content, and particulate emissions. The sampling train will be identical to that described in Method 5 except that the cyclone will be omitted. Each test series will be completed by making triplicate 60 minute sample runs. Gasses will be measured by the following methods.

Sulfur dioxide will be measured by using the Method 6 option of simultaneous determination with particulate by substituting 3% hydrogen peroxide for the water in the first two impingers of the Method 5 sample train.

Heat input to the boilers will be determined by continuously monitoring oxygen content of the flue gas as described in Method 3A and calculating heat input using an F-factor of 9280 scf per million Btu of heat input for the wood waste fuel.

Carbon monoxide concentrations will be continuously monitored as described in Method 10. A TECO Model 48H gas correlation filter NDIR will be used. Instrument calibration and bias checks will be performed prior to and following each series of tests, and a mid range system bias check will be made following each run by directing (certified) calibration to the gas sampling probe.

Nitrogen oxides will be continuously monitored as described in Method 7E using a TECO Model 10S analyzer. Instrument calibration will performed prior to and following each series of tests, and a mid range system bias check will be made prior to and following each run by directing (Protocol 1) calibration to the gas sampling probe.

VOC (as carbon) concentrations will be measured using Method 25A (continuous monitoring with a flame ionization detector) with a TECO Model 51 heated multiple range FID. An appropriate range will be selected and calibrated using appropriate low, mid and high range concentrations of EPA Protocol 1 mixtures of propane in nitrogen. Since calibrations are to be made with propane (C3H8), results as methane (CH3) (or as carbon) are determined by increasing the measured concentration by a factor of three. A continuous trace of VOC as propane will be recorded for each 60 minute test period. Instrument calibration will be performed initially, and following each 60 minute test period. Any necessary adjustments will be made after recording the response of the mid range calibration gas introduced at the inlet to the VOC sampling probe. The gas samples will be directed to the heated FID analyzer by way of heated teflon sample line maintained at a minimum temperature of 250oF.

Instrument calibrations may be made with the aid of an Environics Model 2020 gas diluter and Method 205 if necessary to obtain appropriate concentrations of calibration gases as dictated by preliminary stack gas measurements and available cylinder supplies.

Destruction and removal efficiency (DRE) of the pentachlorophenol and creosote compounds will be determined by measuring the mass quantities of the associated POHC's being introduced to the boiler and emissions of those compounds from the boiler stack. The inlet loading will be determined by collecting wood waste samples (two per sample run) and analyzing for the target POHC's. Outlet concentrations will be measured by collecting samples on XAD-2 resin using the Modified Method 5 (MM5) sampling train. Analyses will be performed using GCMS by Bonner Analytical Laboratories in Hattiesburg, Mississippi.

Sample custody records will be maintained at all times. Sulfur dioxide audit samples will be obtained and analyzed with the stack gas samples. Calibration gas certifications as well as equipment calibration records will be available at the test site.

4.0 DATA REDUCTION

Tables presented in this section are electronic "spreadsheet" presentations of data and calculations. All calculations are performed by these spreadsheets and will be copied for review in this section. An example is provided.

Koppers Industries
Wood Waste Boiler
PM/NOx/CO/SO2/VOC Emissions Test - January 1, 1996

Collected Test Data:

		RUN 1	RUN 2	RUN 3
Date	:	6/2/95	6/2/95	6/2/95
Time start	:	0933	1210	1349
Time end	:	1048	1312	1450
1. As	: sq ft			
2. Dn	: in.			
3. Cp	: dimensionless			
4. Theta	: minutes			
5. Y	: dimensionless			
6. Pbar	: in. Hg			
7. Pg	: in. H2O			
8. Vm	: cf (dry gas)			
9. sqr(DP),avg	: in.H2O^.5			
10. DH	: in. H2O			
11. ts	: degrees F			
12. tm	: degrees F			
13. Vlc	: ml			
14. CO2	: percent			
15. O2	: percent			
16. CO	: percent			
17. C,CO	: ppm			
18. M,PM	: milligrams			
19. M,SO2	: milligrams			
20. C,VOC	: ppm as propane (wet basis)			
21. NOx	: ppm			

Koppers Industries
Wood Waste Boiler
PM/NOx/CO/SO2/VOC Emissions Test - January 1, 1996

Calculations:

	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar				
2. Ps : in. Hg (Pg/13.6)+Pbar				
3. An : sq ft ((Dn/24)^2)(3.1416)				
4. Vmstd : dscf Vm Y(Pm/Pstd)(Tstd/Tm)				
5. Vwstd : scf (.04707cf/ml)(Vlc)				
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)				
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)				
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws				
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))				
10. Q : cfm Vs As(60 sec/min)				
11. Qstw : scfm Q(Ps/Pstd)(Tstd/Ts)				
12. Qstd : dscfm Qstw(1-Bws)				
13. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/(60 theta Vs Ps An)				

Koppers Industries
Wood Waste Boiler
PM/NOx/CO/SO2/VOC Emissions Test - January 1, 1996

Emissions Calculations:

Particulate Emissions

	RUN 1	RUN 2	RUN 3	AVG.
14. E,PM : pounds/hr (M,PM/Vmstd)(Qstd)(60)/(453590)				
15. C,PM : grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				

VOC Emissions

16. C'VOC : ppm as Carbon, dry ((C,VOC)*3)/(1-Bws)				
17. E,VOC : pounds/hr (C'VOC)(3.116e-8)(Qstd)(60)				

Sulfur Dioxide Emissions

18. E,SO2 : pounds/hr (M,SO2/Vmstd)(Qstd)(60)/(453590)				
19. C,SO2 : ppm (M,SO2/Vmstd) (13.266)				

CO Emissions

20. E,CO : pounds/hr (C,CO)(7.27e-8)(Qstd)(60)				

NOx Emissions

21. E,NOx : pounds/hr C,NOx(1.19e-7)(Qstd)(60)				

5.0 NOMENCLATURE

SYMBOL	UNITS	DESCRIPTION
An	ft^2	Nozzle cross sectional area
As	ft^2	Stack cross sectional area
Bws	dimensionless	Wet gas fraction
CO_2	percent	Carbon dioxide content by volume
CO	percent	Carbon monoxide content by volume
Cp	dimensionless	Pitot correction factor
C,X	as labeled	Concentration of pollutant X
DGF	dimensionless	Dry gas fraction
Dn	inches	Nozzle diameter
ΔH (delta H)	in. H_2O	Pressure drop across meter orifice
ΔP (delta P)	in. H_2O	Stack gas velocity pressure
E,X	#/hr	Emission rate of pollutant X
E'X	#/MM Btu	Emission rate of pollutant X
F	dscf	Volume of flue gas per MM Btu
I	percent	Nozzle velocity/stack gas velocity
Kp	consistent	Pitot tube constant
M,X	milligrams	Sample weight of pollutant X
Md	#/# mole	Dry molecular weight of stack gas
Ms	#/# mole	Wet molecular weight of stack gas
N2	percent	Nitrogen content by volume, dry basis
O_2	percent	Oxygen content by volume, dry basis
Pbar	in. Hg	Barometric pressure
Pg	in. Hg	Stack static pressure
Pm	in. Hg	Total pressure at meter (Pbar+(DH/13.6)
Ps	in. Hg	Total stack pressure (Pbar+(Pg/13.6))
Pstd	in. Hg	Standard barometric pressure = 29.92
Q	acfm	Volumetric flow rate at stack conditions
Qstd	dscfm	Volumetric flow rate at standard conditions, dry basis
Qstdw	scfm	Volumetric flow rate at standard conditions, wet basis
θ (theta)	minutes	Sample duration
tm	°F	Meter temperature (Tm denotes °R)
ts	°F	Stack temperature (Ts denotes °R)
Tstd	°R	Standard temperature = 528°R
Vlc	ml	volume of water collected
Vm	ft^3	Volume of dry gas sampled through meter
Vmstd	dscf	Sample volume at standard conditions
Vwstd	scf	Sample volume of water vapor
Y	dimensionless	Meter coefficient
Xsair	percent	Excess air

6.0 CALIBRATIONS:

Measurement devices used by Environmental Monitoring Laboratories and subject to changes in measurement precision are initially calibrated prior to use. Those instruments for which calibration factors are subject to change or for which calibration checks are required, are calibrated following each field use or as otherwise directed and noted. Calibration procedures for specific equipment are as follows.

Dry Gas Meter:
Dry gas meters are periodically removed from the sampling consoles and cleaned and repaired (new gaskets etc. as required). Following the overhaul of a meter, the measuring precision is checked by the Bell Prover Method and adjusted when necessary to read to within 2% of 100% accuracy. This service is provided by Big Three Meter Company in Jackson, Mississippi. Overhaul service or any six month period is followed by a five point calibration described in APTD-0576 using either a wet test meter or calibrated dry gas meter (used exclusively for calibrations) as a standard reference. Following field use, a gas meter calibration is checked in one of two ways. [1] Three calibration checks at intermediate orifice settings are performed or [2] orifice meter coefficients are used.

If a meter coefficient obtained from pre-test and post-test checks differs by more than 5%, the coefficient (Y) giving the lower sample volume is used in the calculations.

Orifice:
The orifice coefficient is initially determined and is rechecked following a major gas meter repair and calibration.

Nozzles:
Nozzles are checked before each field use with a precision (.001 in.) dial caliper. Three measurements on different axes are made; an average of those three readings is used in calculations. If the tolerance among measurements exceeds 0.004 inches (highest to lowest reading) the nozzle is repaired and recalibrated or discarded.

Pitot Tubes:
Pitot tubes meeting EPA geometry standards are assigned a coefficient of 0.84. Pitot tubes are visually inspected for damage before, during and after use. Those pitot tubes not meeting the geometry standards are assigned a coefficient from the manufacturer's calibration which it retains unless damaged. All pitot tubes used by Environmental Monitoring Laboratories are manufactured by NAPP, Inc.

Temperature Measuring Instruments:
Most temperature measurements are made with a type K thermocouple and an Omega digital thermocouple thermometer which has an initial calibration traceable to NBS. Other measurements are made using bimetallic dial thermometers. The thermocouples and dial thermometers are checked following or during a test series against an ASTM mercury in glass thermometer.

Barometer:
Aneroid field barometers are checked against and adjusted to readings from a mercury barometer or readings obtained from local weather authorities.

Differential Pressure Gauges:
Velocity head (delta P) and orifice pressure differential (delta H) measurements are made using water manometers of the appropriate range unless otherwise noted in the test data. Manometers do not require calibration.

7.0 APPENDICES

A. Field and Laboratory Data

B. Calibrations

C. Visible Emissions Record

D. Boiler Operating Records

E. Laboratory Reports

7.0 APPENDICES

APPENDIX A.

SAMPLING AND ANALYTICAL DATA

STACK CONFIGURATION AND SAMPLE POINT LAYOUT FOR CIRCULAR STACKS

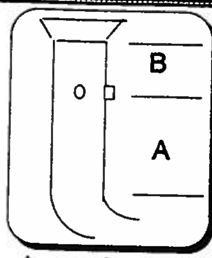
PLANT: ______________________ **Date:** ______________

SOURCE: ______________________

TEST FOR: ______________________

TEST OPERATORS: ______________________

SKETCH OF STACK



PERCENT OF DIAMETER

point no.	points on a diameter: 2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5
5			85.4	67.7	34.2	25.0	20.1	16.9
6			95.6	80.6	65.8	35.6	26.9	22.0
7				89.5	77.4	64.4	36.6	28.3
8				96.8	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

Point No.	inches from wall	velocity head

STACK DIAMETER:

Distance from ports to disturbance:

A. to upstream disturbance ______________

B. to downstream disturbance ______________

Upstream diameters: ______________

Downstream diameters: ______________

Minimum No. sample points required: ______________

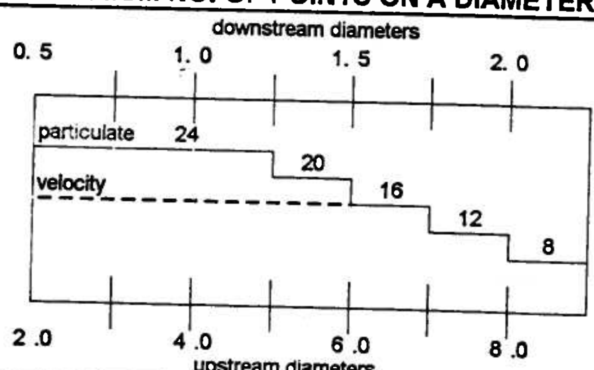
No. sample points selected: ______________

Port Length: ______________

Port Type: ______________

Port Access: ______________

MINIMUM NO. OF POINTS ON A DIAMETER



Pitot ID: ______________ Pitot Cp: ______________ Stack Temp: ______________

Remarks:

Plant ____________________

Sampling Location ____________________

Test For ____________________

Test Operators ____________________

RUN No. ________

Date ________

Time start ________ end ________

Meter Box	
Sample Box	
Probe/Pitot	
Pitot Cp	
Nozzle Dia.	
Filter No.	
Amb. Temp. °F	
Bar. Press. "Hg	
Static Press. "H_2O	

No. Sample Pts.	
Minutes/Pt.	
NOMOGRAPH	
$\Delta H@$	
Meter Temp.	
% H_2O	
C-Factor	
Stack Temp.	
Ref. ΔP	

Gas Analysis			
CO_2			
O_2			
CO			
Time			

Condensate:

tare ________ fin ________

Silica gel:

tare ________ fin ________

Remarks: ____________________

	Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp. °F In	Meter Temp. °F Out	Oven Temp. °F	Imp. Temp. °F	Vac in. Hg
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
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30											
31											
32											
33											
34											
35											

PARTICULATE CATCH ANALYSIS

SAMPLES: ______________________

DATE TAKEN: __________ DATE ANALYZED: __________

DELIVERED BY: __________ RECEIVED BY: __________

ANALYZED BY: ______________________

(Attach chain of custody if additional exchanges occur)

FILTERS: ______________________

RUN NO.				
FILTER NO.				
FILTER TARE, gms.				
FINAL WEIGHT, gms.				
NET GAIN, gms.				

PROBE WASH: ______________________

RUN NO.				
CONTAINER I.D.				
VOLUME INTACT?				
VOLUME, ml				
TARE WEIGHT, gms.				
FINAL WEIGHT, gms				
NET GAIN, gms.				
LESS BLANK, gms.				

PARTICULATE SAMPLE WEIGHT:

RUN NO.				
filter + probe, mg.				

BARIUM CHLORIDE - SULFURIC ACID TITRATION

SAMPLES: ______________________________

DATE TAKEN: ______________ DATE ANALYZED ______________

SAMPLES DELIVERED BY: ______________ RECEIVED BY: ______________

ANALYZED BY: ______________________________

titration	H_2SO_4 Normality	H_2SO_4 Volume	$BaCl_2$ Volume	$BaCl_2$ Normality*

* $N\ BaCl_2 = ((ml\ H_2SO_4)(N\ H_2SO_4))/(ml\ BaCl_2)$

$BaCl_2$ Normality ______________

Sample ID	Sample Volume, ml	Aliquot Volume, ml	$BaCl_2$ Volume, ml	Remarks

ANALYZER CALIBRATION RECORD

Plant		Run No(s).	
Source		Date	
Test For		Time Start	
Operators		Time End	

ANALYZER CALIBRATION DATA

Analyzer ID ______________________ Span: ______________________

	Cal. gas Value	Analyzer Calibration Response	Absolute Difference	Difference % of Span
Zero gas				
Mid-range gas				
High-range gas				

SYSTEM CALIBRATION BIAS AND DRIFT DATA

ZERO CALIBRATION

RUN NO.	Cal. gas Value	Analyzer Calibration Response	Initial values		Final Values		Drift % of Span
			System Calibration Response	System Calib. Bias % of span	System Calibration Response	System Calib. Bias % of span	

UPSCALE CALIBRATION

RUN NO.	Cal. gas Value	Analyzer Calibration Response	Initial values		Final Values		Drift % of Span
			System Calibration Response	System Calib. Bias % of span	System Calibration Response	System Calib. Bias % of span	

CHAIN OF CUSTODY AND REQUEST FOR ANALYSIS

PAGE____ OF ____

ENVIRONMENTAL MONITORING LABORATORIES
POST OFFICE BOX 655
RIDGELAND, MISSISSIPPI 39158

PHONE: 601/856-3092
FAX: 601/853-2151 Attention:

Laboratory:

Please return copy of chain of custody with analytical report

Attention:

EML PO No.

Project:

Rush ☐ Routine ☐ Fax Results ☐

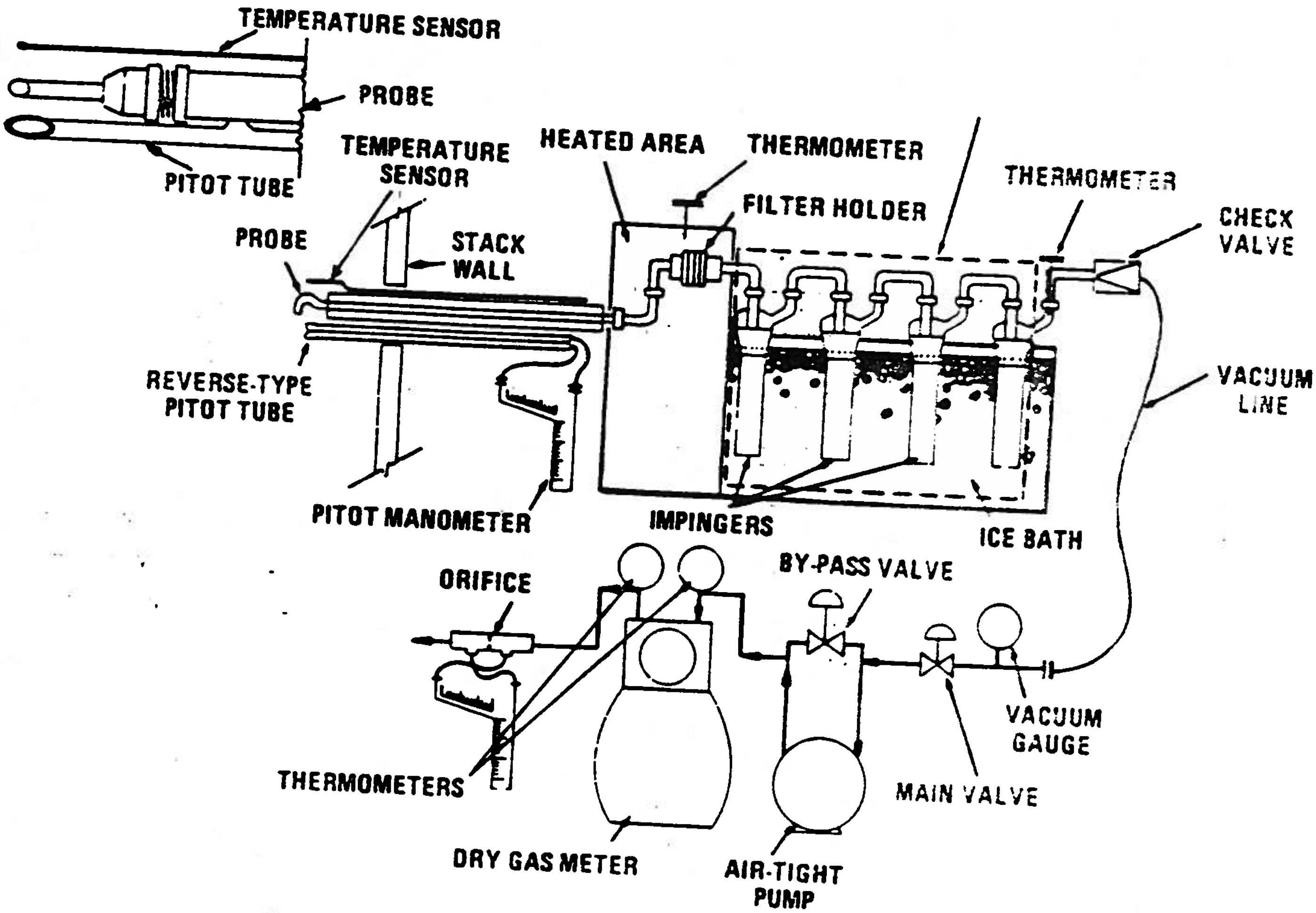
ANALYSES REQUESTED

No. of containers	SAMPLE ID	Sample Matrix	REMARKS					UNITS

Relinquished by: (print name; initial)	Date/Time	Received by: (print name; initial)	Relinquished by: (print name; initial)	Date/Time	Received by: (print name; initial)
Relinquished by: (print name; initial)	Date/Time	Received by: (print name; initial)	Relinquished by: (print name; initial)	Date/Time	Received by: (print name; initial)
COURIER		Date Shipped	Received for lab by:		Date/Time

APPENDIX B.

CALIBRATION DATA


TEMPERATURE SENSOR
PROBE
PITOT TUBE
TEMPERATURE SENSOR
PROBE
STACK WALL
REVERSE-TYPE PITOT TUBE
PITOT MANOMETER
HEATED AREA
THERMOMETER
FILTER HOLDER
THERMOMETER
CHECK VALVE
VACUUM LINE
IMPINGERS
ICE BATH
ORIFICE
BY-PASS VALVE
VACUUM GAUGE
MAIN VALVE
THERMOMETERS
DRY GAS METER
AIR-TIGHT PUMP

DRY GAS METER CALIBRATION

Meter ID Andersen

Calibration Method DGM/DGM **By** WBM

Calibration Meter ID 651729 **Pbar** 29.91

Date 12/7/95

Vac. in. Hg	DH in. H_2O	Time min	Calibrating Meter Vi ft^3	Calibrating Meter Vf ft^3	Calibrating Meter Temp °F	Field Meter Vi ft^3	Field Meter Vf ft^3	Temp. in init.	Temp. in final	Temp out init.	Temp out final	Y	Q	K	DH@
2	1.85	16.00	32.352	44.645	50	13.042	25.199	50	71	50	56	1.020	0.77	0.737	1.695
2	1.85	15.00	44.645	56.013	51	25.199	36.854	61	80	55	67	0.999	0.77	0.731	1.722
2	1.85	16.00	56.013	68.064	52	36.854	49.479	73	83	66	76	0.992	0.78	0.732	1.717
Averages:												1.00			1.71

Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]

K = Q(sqrt((Pm Mm)/((Tm out)(DH))

Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)

DH@ = 0.921/K^2

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

DRY GAS METER CALIBRATION

Meter ID	Andersen		
Calibration Method	DGM/DGM	**By**	GNM
Calibration Meter ID	651729	**Pbar**	29.95
Date	7/31/95		

Vac. in. Hg	DH in. H_2O	Time min	Calibrating Meter Vi ft^3	Calibrating Meter Vf ft^3	Calibrating Meter Temp °F	Field Meter Vi ft^3	Field Meter Vf ft^3	Field Meter Temp. in Init.	Field Meter Temp. in final	Field Meter Temp out Init.	Field Meter Temp out final	Y	Q	K	DH@
1	5.00	8.00	523.978	533.874	75	554.678	564.724	82	97	82	84	0.994	1.24	0.706	1.849
1	4.00	9.50	533.874	544.416	75	564.724	575.431	87	100	84	89	1.002	1.12	0.711	1.822
1	3.00	10.00	544.416	554.227	80	575.431	585.515	99	108	87	94	0.996	0.99	0.723	1.764
1	2.00	12.00	554.227	563.955	80	585.515	595.580	96	106	93	98	0.994	0.83	0.736	1.702
1	1.00	17.00	563.955	573.663	80	595.580	605.683	101	102	97	101	0.994	0.59	0.736	1.700
Averages:												1.00			1.77

Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]

K = Q(sqrt((Pm Mm)/((Tm out)(DH))

Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)

DH@ = 0.921/K^2

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

PITOT TUBE GEOMETRY CALIBRATION

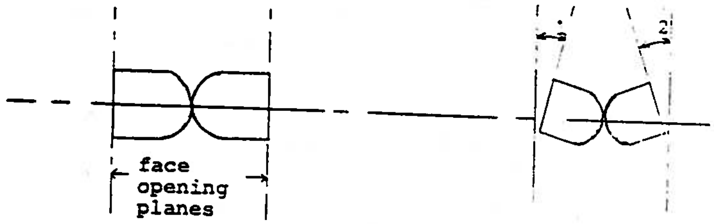
Pitot tube/probe identification: ____________________ Date Checked: ____________ By: __________

I. Pitot tubes having the following geometric characteristics are assigned a pitot tube coefficient of 0.84.

1. Face openings perpendicular to transverse axis: ($\alpha 1$ and $\alpha 2 < 10^0$)

$\alpha 1$ = ________

$\alpha 2$ = ________

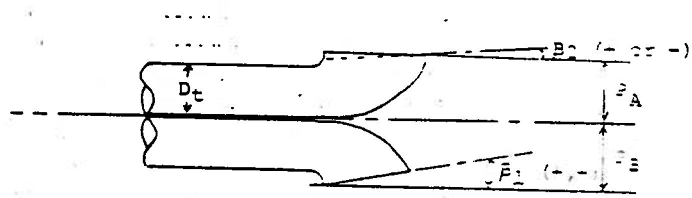


2. Face openings parallel to longitudinal axis: (β_1 and $\beta_2 < 5^0$; P = 1.05 D_t to 1.50 D_t; $P_A = P_B$)

D_t = ________ β_1 = ________

P_A = ________ β_2 = ________

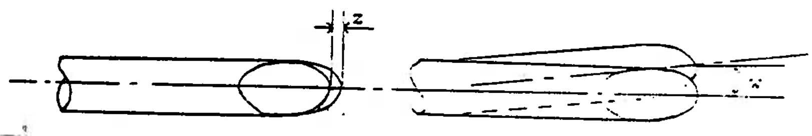
P_B = ________



3. Both legs equal length and centerline coincident (z < .125 inch; w < .031 inch)

z = ________

w = ________



PITOT/PROBE CLEARANCE CHECK:

Nozzle ID: ____________ Nozzle dia: ____________ Date: ____________

II. Pitot/probe/nozzle assemblies have the same Cp as the isolated Pitot tube when the following conditions exist.

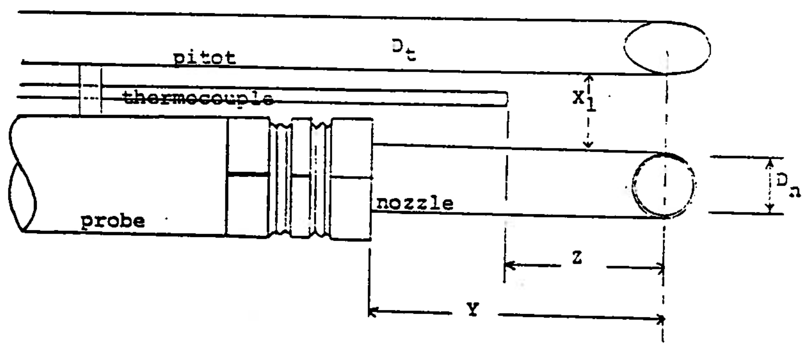
1. D_t > .188 &< .375 inch D_t = ________

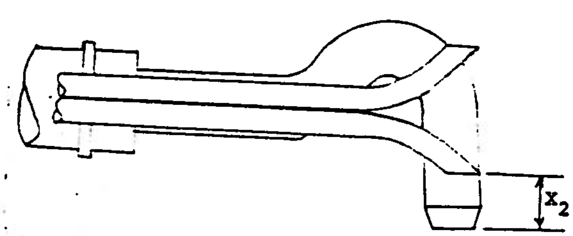
2. $X_1 \geq .75$ inch X_1 = ________

3. $X_2 \geq 0$ inch X_2 = ________

4. $Y \geq 3.0$ inch Y = ________

5. $z \geq 2.0$ inch z = ________





THERMOMETER/THERMOCOUPLE CALIBRATION

DATE: ______________________ BY: ____________

REFERENCE THERMOMETER: ______________________

FIELD THERMOMETER	TEMP. SOURCE	REFERENCE TEMP.	FIELD THERM. TEMPERATURE	% ERROR, ABSOLUTE
___' T'couple Omega 650				
Meter In Omega 650				
Meter Out Omega 650				
Impinger Out Bimetal-dial				
Sample Box Omron TC				
Probe Heat Omron TC				

12>2.1 Propane

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (810) 589-2950 FAX:(810) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MON
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc
1290 Combermere
Troy, MI 48083

Purchase Order : DRV0116
Scott Project # : 576120

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay and Certification of Gaseous Calibration Standards; Procedure G1; September, 1993.

Cylinder Number : ALM049194
Cylinder Pressure + : 1900 psig
Certificate Date : 2/1/95
Previous Certificate Date : None
Expiration Date : 2/1/98

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	953.4 ppm	±1% NIST Directly Traceable

Balance Gas: Nitrogen

+Do not use when cylinder presssure is below 150 psig.
*Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 1668	6/7/96	ALM-032015	95.5 ppm Propane in Air.

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Prop:Beckman/400/1002059	1/19/95	Flame Ionization Detection

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components	First Triad Analysis	Second Triad Analysis	Calibration Curve
Propane	Date: 2/1/95 Response Units: mv Z1=0.00 R1=14.40 T1=143.00 R2=14.40 Z2=0.00 T2=143.00 Z3=0.00 T3=143.00 R3=14.40 Avg. Conc. of Cust. Cyl. 953.4 ppm		Concentration=$A+Bx+Cx^2+Dx^3+Ex^4$ r=1.00000 NTRM 1668 Constants: A=-0.237940000 B=6.669000000 C=0.000000000 D=0.000000000 E=0.000000000

Special Notes

Mail

Analyst

APPENDIX C.

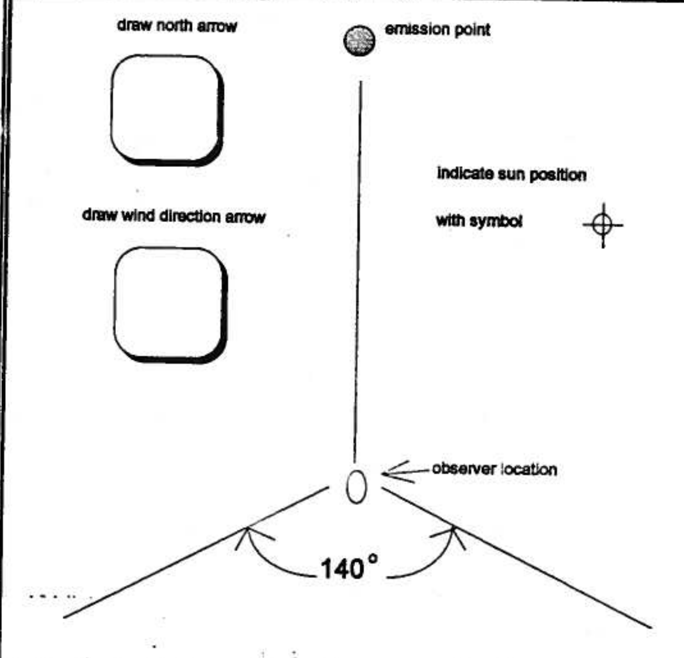
VISIBLE EMISSIONS RECORD

ENVIRONMENTAL MONITORING LABORATORIES - RIDGELAND, MISSISSIPPI - 601/856-3092

VISIBLE EMISSIONS EVALUATION RECORD

PLANT	
Emission Point	
Date	
Stack height	
Distance to source	
Direction from source	

CONDITIONS	START	STOP
Time		
Wind direction		
Wind speed		
Ambient temp. °F		
Sky cover		
Plume color		
Plume background		



Condensing water vapor? ____________ Detached ☐ Attached ☐ Distance visible ____________

min	seconds 0	15	30	45	min	seconds 0	15	30	45	min	seconds 0	15	30	45	min	seconds 0	15	30	45
0					15					30					45				
1					16					31					46				
2					17					32					47				
3					18					33					48				
4					19					34					49				
5					20					35					50				
6					21					36					51				
7					22					37					52				
8					23					38					53				
9					24					39					54				
10					25					40					55				
11					26					41					56				
12					27					42					57				
13					28					43					58				
14					29					44					59				

Remarks: ____________

Avg. opacity for period: ____________ Highest six minute average: ____________

Other data reduction: ____________

Observer: ____________ date certified: ____________ Signature: ____________

APPENDIX D.

BOILER OPERATING RECORDS

APPENDIX E.

GCMS ANALYSES

Public Notice
Mississippi Environmental
Quality Permit Board
P.O. Box 10385
Jackson, MS 39289-0385
Telephone No. (601) 961-5171

Public Notice No. 96A-MS-060

Koppers Industries, Inc. (Facility No. 0960-00012), Tie Plant Road, P.O. Box 160, Tie Plant, MS 38960, (601) 226-4584, has applied to the Mississippi Department of Environmental Quality for modifications to the Permit to Construct issued November 8, 1994, which allowed the firing of treated wood in the existing wood-waste boiler. This is not a major modification as defined by the Prevention of Significant Deterioration (PSD) Regulations, Regulation APC-S-5.

The impact of the emissions of air contaminants from the project has been evaluated and the staff of the Department believes that, with proper constraints and limitations on Koppers Industries, Inc., this project will operate within all State and Federal air pollution control laws and standards and will protect health and welfare. Therefore, the staff of the Board has preliminarily decided, based on available information, to recommend to the Board that a permit be issued containing numerous regulatory constraints specifically stated in the draft permit. However, before proceeding further with the staff evaluation, public comments are being solicited. The staff recommendation to the Board, as well as the Board decision, will be made only after a thorough consideration of all public comments.

Persons wishing to comment upon or object to the proposed determinations are invited to submit comments in writing to David Burchfield at the above Permit Board address no later than thirty (30) days from the date of publication of this notice. All comments received by that date will be considered in the formulation of final determinations regarding the application. A public hearing will be held if the Permit Board finds a significant degree of public interest in the proposed permit. The Permit Board is limited in the scope of its analysis to environmental impact. Any comments relative to zoning or economic and social impacts are within the jurisdiction of local zoning and planning authorities and should be addressed to them.

Additional details about the application, including a copy of the draft permit, are available by writing or calling David Burchfield at the above Permit Board address and telephone number. This information is also available for review at the following location(s) during normal business hours.

Mississippi Department
of Environmental Quality
Office of Pollution Control
Air Division
500 Greymont-Suite F
Jackson, MS 39202

Elizabeth Jones Library
P.O. Box 130-
Grenada, MS 38902-0130
persons whom you know will be interested.

11/29/96

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DEC - 2 1996
Dept. of Environmental Quality
Office of Pollution Control

The Daily Sentinel-Star

Proof of Publication

STATE OF MISSISSIPPI
COUNTY OF GRENADA

Before me, the undersigned authority in and for the County and State aforesaid, this day personally appeared

M. Michelle M. Norman

who, being duly sworn, states on oath that she is the

Clerk

of The Daily Sentinel-Star, a newspaper published in the city of Grenada, state and county aforesaid, with a general circulation in said county, and which has been published for a period of more than one year, and that the publication of the notice, a copy of which is hereto attached, has been made in said paper ....1........ times, at weekly intervals and in the regular entire issue of said newspaper for the numbers and dates hereinafter named, to-wit:

Vol. 142 .. No. 108 .. on the 29 .. day of .. 11 .. 199 6 ..
Vol.......... No.......... on the......... day of.......... 199.....
Vol.......... No.......... on the......... day of.......... 199.....
Vol.......... No.......... on the......... day of.......... 199.....
Vol.......... No.......... on the......... day of.......... 199.....
Vol.......... No.......... on the......... day of.......... 199.....
Vol.......... No.......... on the......... day of.......... 199.....

M. Michelle M. Norman

Sworn to and subscribed before me, this 29th day of November 1996

Stephanie Y. Nance

My Commission Expires September 5, 1999

(SEAL)

Public Notice
Mississippi Environmental Quality Permit Board
P. O. Box 10385
Jackson, MS 39289-0385
Telephone No. (601) 961-5171

File Copy

Public Notice No. 96A-MS-060

Koppers Industries, Inc. (Facility No. 0960-00012), Tie Plant Road, P. O. Box 160, Tie Plant, MS 38960, (601) 226-4584, has applied to the Mississippi Department of Environmental Quality for modifications to the Permit to Construct issued November 8, 1994, which allowed the firing of treated wood in the existing woodwaste boiler. This is not a major modification as defined by the Prevention of Significant Deterioration (PSD) Regulations, Regulation APC-S-5.

The impact of the emissions of air contaminants from the project has been evaluated and the staff of the Department believes that, with proper constraints and limitations on Koppers Industries, Inc., this project will operate within all State and Federal air pollution control laws and standards and will protect health and welfare. Therefore, the staff of the Board has preliminarily decided, based on available information, to recommend to the Board that a permit be issued containing numerous regulatory constraints specifically stated in the draft permit. However, before proceeding further with the staff evaluation, public comments are being solicited. The staff recommendation to the Board, as well as the Board decision, will be made only after a thorough consideration of all public comments.

Persons wishing to comment upon or object to the proposed determinations are invited to submit comments in writing to David Burchfield at the above Permit Board address no later than thirty (30) days from the date of publication of this notice. All comments received by that date will be considered in the formulation of final determinations regarding the application. A public hearing will be held if the Permit Board finds a significant degree of public interest in the proposed permit. The Permit Board is limited in the scope of its analysis to environmental impact. Any comments relative to zoning or economic and social impacts are within the jurisdiction of local zoning and planning authorities and should be addressed to them.

Additional details about the application, including a copy of the draft permit, are available by writing or calling David Burchfield at the above Permit Board address and telephone number. This information is also available for review at the following location(s) during normal business hours.

Mississippi Department of Environmental Quality
Office of Pollution Control
Air Division
500 Greymont - Suite F
Jackson, MS 39202

Elizabeth Jones Library
P. O. Box 130
Grenada, MS 38901-0130

Please bring the foregoing to the attention of persons whom you know will be interested.

H:\WP\0960\00012\PN-PTCM2.1

Permit Review Summary

Company Name: Koppers Industries, Inc.

Source Number: 0960-00012

County: Grenada

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PROJECT DESCRIPTION

The permittee has proposed modification to the Permit to Construct issued November 8, 1994 which allowed the burning of treated wood in the woodwaste boiler. The modification consists of removal of emission limitations on the woodwaste boiler for which there are no applicable requirements. Also, based on recent compliance testing results, the minimum required combustion chamber temperature while firing treated wood was lowered from 1600°F to 1140°F.

EMISSIONS EVALUATION

All emissions should be within State of Mississippi limits and federal regulation limits.

AIR QUALITY IMPACT ANALYSIS

The impact on ambient air quality due to the new equipment will be minimal.

PUBLIC PARTICIPATION

A 30 day public notice period began November 29, 1996 with the publication of a notice in *The Daily Sentinel* paper and ends December 29, 1996.

RECOMMENDATION

The staff has preliminarily decided to recommend modification of the permit to the Permit Board as shown in the draft permit. However, the staff recommendation to the Board will be made only after a thorough consideration of all public comments.

STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
PERMIT
TO CONSTRUCT AIR EMISSIONS EQUIPMENT
THIS CERTIFIES THAT

File Copy

Koppers Industries, Inc.
Tie Plant Road
Tie Plant, Mississippi

has been granted permission to construct air emissions equipment to comply with the emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Issued this 8th day of November, 1994

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

____

HEAD, OFFICE OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. 0960-00012

Permit Modified: ISSUANCE DATE

SR-1259C.1.1

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PART I
GENERAL CONDITIONS

1. The plans, specifications, schedules, dates and other data submitted to the Permit Board are filed with and considered as a part of this permit.

2. All air pollution control facilities shall be designed and constructed such as to allow proper operation and maintenance of the facilities.

3. The necessary facilities shall be constructed so that solids removed in the course of control of air emissions may be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering State waters without the proper environmental permits.

4. The air pollution control facilities shall be constructed such that diversion from or bypass of collection and control facilities is not needed except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Environmental Quality Permit Board.

5. The construction of facilities shall be performed in such a manner as to reduce both point source and fugitive dust emissions to a minimum.

6. The permittee shall allow the Mississippi Department of Environmental Quality Office of Pollution Control and the Mississippi Environmental Quality Permit Board and/or their representatives upon presentation of credentials:

   a. To enter upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit; and

   b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air emissions.

7. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to:

   a. Violation of any terms or conditions of this permit.

   b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts, or

   c. A change in any condition that requires either a temporary or permanent reduction or elimination of authorized air emissions.

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8. Except for data determined to be confidential under the Mississippi Air & Water Pollution Control Law, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Environmental Quality Office of Pollution Control.

9. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the air cleaning facility, or from compliance with the applicable statutes of the State, or with local laws, regulations, or ordinances.

11. This permit may only be transferred upon approval of the Mississippi Environmental Quality Permit Board.

12. This permit is for air pollution control purposes only.

13. Approval to construct will expire should construction not begin within eighteen (18) months of the issuance of this permit, or should construction be suspended for eighteen (18) months.

14. Prior to startup of air emissions equipment at this source, the permittee must obtain a Permit to Operate and submit certification that construction was completed in accordance with the approved plans and specifications.

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PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning ISSUANCE DATE, the permittee is authorized to construct modifications (change in the method of operation by the addition of creosote and pentachlorophenol treated wood as fuel) to air emissions equipment for the emission of air contaminants from Emission Point AA-001, the 60.0 MMBTUH Wellons/Nebraska Woodwaste Boiler with multiclone collector (Reference No. 01).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below.

EMISSION LIMITATIONS

Particulate Matter	0.30 gr/dscf, per APC-S-1, Section 3.4(b), as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.
Opacity	40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect ISSUANCE DATE.

The temperature in the Woodwaste Boiler must be maintained at 1140^{0}F or greater when firing treated wood.

The Woodwaste Boiler shall comply with a minimum destruction removal efficiency (DRE) of 99.9% for all principal organic hazardous components (POHC).

OPERATING LIMITATIONS

Materials other than untreated wood, creosote treated wood, pentachlorophenol treated wood, or office waste paper are prohibited in the boiler. The office waste paper shall be limited to waste paper generated on site by Kopper's office operations and shall not contain plastic or non-combustible wastes and the total amount fired shall be less than one percent (1%) of total fuel input.

Total woodwaste feed rate shall not exceed 9,375 lbs/hr.

PART II
EMISSION LIMITATIONS & MONITORING REQUIREMENTS

Continued from Previous Page

RECORDKEEPING & REPORTING REQUIREMENTS

The permittee shall monitor and document with recordkeeping the following operating parameters:

- Temperature in the woodwaste boiler, on a continuous basis, with notations indicating when treated wood is being fired.

- In-stack opacity.

- CO concentration at the exit of the boiler stack, on a continuous basis.

  The CO continuous monitoring system shall include the capacity to correct the CO concentrations to a reference O_2 concentration and shall be collocated with the stack sampling ports.

These records shall be maintained at the facility and made available to the Office of Pollution Control (OPC) upon request. In addition, a quarterly report summarizing the temperature and opacity monitoring data shall be submitted to the OPC within thirty (30) days of the close of the calendar quarter.

PART III
OTHER REQUIREMENTS

(1) The permittee shall demonstrate compliance with PM, SO_2, NO_x, CO, & NMVOC lbs/hr emission limitations, opacity limitations, and minimum DRE in PART II for Emission Point AA-001 by stack testing in accordance with applicable EPA Reference Methods and submittal of a test report(s).

(2) The permittee shall demonstrate compliance as set forth in Item (1), above, within 60 days after achieving the maximum production rate at which Emission Point AA-001 will be operated, but no later than 180 days after initial startup.

(3) Testing for the purpose of demonstrating compliance with the lb/hr emission limitations and minimum DRE shall be conducted at maximum production rates and peak pollutant generation rates.

(4) During emission testing, the permittee shall document the following operating parameters:

- Boiler operating temperature via continuous monitoring, with notations indicating when treated wood is being fired.
- Treated and untreated woodwaste feedrate during each hour of testing, lbs/hr.
- CO concentration at the exit of the boiler stack via continuous monitoring.
- In-stack opacity.

This data shall be included in the test report required in Item (1) above.

(5) A pretest conference at least thirty (30) days prior to the scheduled test date is needed to ensure that all test methods and procedures are acceptable to the Office of Pollution Control. Also, the Office of Pollution Control must be notified prior to the scheduled test date. At least TEN (10) DAYS notice should be given so that an observer may be scheduled to witness the test(s).

(6) All records shall be maintained at the facility for at least (2) years and shall be made available to the Office of Pollution Control upon request.

(7) The permittee shall handle, store, and transport all materials in such a manner as to minimize fugitive emissions.

(8) Approval to construct air emissions equipment and modify Emission Point AA-001 has been granted contingent upon the permittee complying with the emission limitations and monitoring requirements for the existing air emissions equipment set forth in the following pages.

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PART III
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Air emissions from Emission Point AA-002, the 28.5 MMBTU/hr fuel oil fired Murray Boiler (Reference No. 02), shall be limited by the permittee as specified below:

EMISSION LIMITATIONS

Particulate Matter	0.43 lbs/hr and 1.88 tons/year, as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.
PM_{10}	0.43 lbs/hr and 1.88 tons/year as determined by EPA Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.
Sulfur Dioxide	15.40 lbs/hr and 67.45 tons/year, as determined by EPA Reference Method 6, 40 CFR 60, Appendix A.
Nitrogen Oxides	4.34 lbs/hr and 19.01 tons/year, as determined by EPA Reference Method 7, 40 CFR 60, Appendix A.
Carbon Monoxide	1.08 lbs/hr and 4.73 tons/year, as determined by EPA Reference Method 10, 40 CFR 60, Appendix A.
Volatile Organic Compounds	0.04 lbs/hr and 0.18 tons/year, as determined by EPA Reference Method 25, 40 CFR 60, Appendix A.
Opacity	40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect November 8, 1994.

ADDITIONAL CONDITIONS

The sulfur content of the fuel oil shall not exceed 0.5% by weight.

The permittee shall monitor and document with recordkeeping the sulfur content of all fuel oil fired in Emission Point AA-002. These records shall be maintained at the facility and made available to the Office of Pollution Control (OPC) upon request. In addition, a quarterly report summarizing this information shall be submitted to the OPC within thirty (30) days of the close of the calendar quarter.

PART III
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Air emissions from Emission Point AA-003, the Wood Treatment Facility including tanks and five (5) treating cylinders (Reference No. 03), shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.

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PART III
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Air emissions from Emission Point AA-004, the Tie Mill with cyclone (Reference No. 04), shall be limited by the permittee as specified below:

EMISSION LIMITATIONS

Particulate Matter	**2.0 lbs/hr and 8.76 tons/year, as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.**
PM_{10}	**2.0 lbs/hr and 8.76 tons/year as determined by EPA Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.**
Opacity	**40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.**

All test methods specified above shall be those versions, or their approved equivalents, which are in effect November 8, 1994.

DRAFT

STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
PERMIT
TO CONSTRUCT AIR EMISSIONS EQUIPMENT
THIS CERTIFIES THAT

Koppers Industries, Inc.
Tie Plant Road
Tie Plant, Mississippi

has been granted permission to construct air emissions equipment to comply with the emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Issued this 8th day of November, 1994

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

____
HEAD, OFFICE OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. 0960-00012

Permit Modified: ISSUANCE DATE

SR-1259C.1.1

DRAFT

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

Beginning ISSUANCE DATE, the permittee is authorized to construct modifications (change in the method of operation by the addition of creosote and pentachlorophenol treated wood as fuel) to air emissions equipment for the emission of air contaminants from Emission Point AA-001, the 60.0 MMBTUH Wellons/Nebraska Woodwaste Boiler with multiclone collector (Reference No. 01).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below.

EMISSION LIMITATIONS

Particulate Matter	0.30 gr/dscf, per APC-S-1, Section 3.4(b), as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.
Opacity	40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect ISSUANCE DATE.

The temperature in the Woodwaste Boiler must be maintained at 1140^{0}F or greater when firing treated wood.

The Woodwaste Boiler shall comply with a minimum destruction removal efficiency (DRE) of 99.9% for all principal organic hazardous components (POHC).

OPERATING LIMITATIONS

Materials other than untreated wood, creosote treated wood, pentachlorophenol treated wood, or office waste paper are prohibited in the boiler. The office waste paper shall be limited to waste paper generated on site by Kopper's office operations and shall not contain plastic or non-combustible wastes and the total amount fired shall be less than one percent (1%) of total fuel input.

Total woodwaste feed rate shall not exceed 9,375 lbs/hr.

PART II
EMISSION LIMITATIONS & MONITORING REQUIREMENTS

Continued from Previous Page

RECORDKEEPING & REPORTING REQUIREMENTS

The permittee shall monitor and document with recordkeeping the following operating parameters:

- Temperature in the woodwaste boiler, on a continuous basis, with notations indicating when treated wood is being fired.

- In-stack opacity.

- CO concentration at the exit of the boiler stack, on a continuous basis.

  The CO continuous monitoring system shall include the capacity to correct the CO concentrations to a reference O_2 concentration and shall be collocated with the stack sampling ports.

These records shall be maintained at the facility and made available to the Office of Pollution Control (OPC) upon request. In addition, a quarterly report summarizing the temperature and opacity monitoring data shall be submitted to the OPC within thirty (30) days of the close of the calendar quarter.

PSD MAJOR SOURCE EVALUATION
KOPPERS INDUSTRIES, INC.
GRENADA PLANT, TIE PLANT, MS

The following evaluation considers particulate emission sources only at the Koppers Industries, Inc. Grenada plant in Tie Plant, Ms to determine whether the plant meets the PSD definition of major source for particulate emissions. The major level is 250 tons per year. Fugitive emissions are not included. The evaluation will proceed by source. Emissions of air pollutants other than particulates will not be considered in this evaluation.

<u>Source AA-001, Wellons Boiler</u>

The emission rates of 9.7 lb/hr and 38.9 ton/yr represent engineering estimates of the highest probable emissions from the source. The emission factor is based first on the highest emission during the Feb. 1996 stack test, increased by 25% for variability, and increased further to the maximum allowed fuel burning rate, from 7318 to 9375 lb/hr, or a 28% feed rate increase. The average annual fuel burning rate in this calculation, based on 8760 hours, is 8580 lb/hr or about 91% of the maximum allowable feed rate. KII believes this is a reasonable expectation for maximum annual operation.

An even more conservative calculation would be based on maximum allowable hourly feed rate for 8760 hours. With emissions of 9.7 lb/hr, this estimate would be 42.5 ton/yr. KII will agree to this level as potential to emit for the PSD determination.

The calculation assumes the multiclone will continue to operate with the boiler. This is appropriate. The multiclone is an integral component of the Wellons combustion system and clearly a part of its "physical and operational design." Further, the permit lists the source as "Wellons/Nebraska Woodwaste Boiler with multiclone collector." Thus, the multiclone is required by the permit and, therefore, its use is federally enforceable.

<u>Source AA-002, Oil Fired Murray Boiler</u>

KII estimated potential emissions as 1.79 ton/yr and DEQ is using 1.88 ton/yr in the inventory. KII will accept either value.

<u>Source AA-003, Wood Preserving Facility</u>

KII and DEQ both consider this to be an insignificant source of particulate emissions.

Source AA-004. Lumber Mill Cyclone

KII estimated potential emissions as 2.40 ton/yr based on the AP-42 factor of 2 lb/hr for 8 hours/day, 300 days per year. This represents the maximum business level anticipated as probable for this operation. At 8760 hours, the emission would be 8.76 ton/yr.

An alternate estimate can be made by evaluating the physical manufacturing process. Historically, no more than 2,000,000 board feet or 167,000 cubic feet of lumber is processed in the mill. Assuming typical dimensions of 8" x 12", this amounts to 250,000 linear feet. As a worst case scenario, assume an average of 1/4 inch is planed from each surface. This would amount to 391 tons of wood chip and dust (3.33 sf/lf x .25"/12 x 250,500 lf x 45 lb/cf / 2000 lb/tn). Based on the type of milling and wood, large blade and green wood, it is estimated that 2% of the wood chip is of particle size that could be suspended in the air as TSP. Then, 7.81 ton/yr of particulate would be emitted with no reduction for the cyclone's removal efficiency. Assuming only 75% removal efficiency, the estimate of 1.95 ton/yr is lower than the original estimate.

Although KII believes that the original estimate is reasonable, either the 8.76 or 7.81 ton/yr estimates are acceptable for purpose of the PSD determination.

Source AA-005, Natural gas fired space heater in Boiler House
Source AA-015, Standby Boiler Room Natural gas fired heater, and
Source AA-016, Fire Pump Building Natural gas fired heater

KII estimated 0.00 ton/yr for these sources based on AP-42 factors and 2016 hours per year, since heaters will only be used when the weather is cold. DEQ estimated 0.01 ton/yr. KII will accept either value.

Source AA-006, Natural gas fired steam cleaner

KII estimated 0.02 ton/yr based on AP-42 factors and DEQ estimated 0.01 ton/yr. KII will accept either value.

Source AA-007, Wood Stove Shop Heater

KII estimated 1.34 ton/yr based on AP-42 factors and DEQ estimated 0.18 ton/yr. KII will accept either value.

Source AA-008, Treated Wood Storage

KII and DEQ both consider this to be an insignificant source of particulate emissions. Further, any such emission would be fugitive and, therefore, not be counted.

Source AA-009, Pole Kiln

KII and DEQ both consider this to be an insignificant source of particulate emissions.

Source AA-010, Pole Peeler

KII estimated emissions as 3.94 ton/yr based on the AP-42 factor for plywood veneer wood debarking and basing the amount of wood processed at 1,000,000 cubic feet, which is the maximum probable volume for this operation. DEQ used the APC-S-1 allowable emission of 83.43 ton/yr as potential. The original estimate should be used for the PSD determination since it reflects the maximum emission under the facility's physical and operational design.

A case can also be made that emissions from the pole peeler are fugitive. However, this argument will not be made at this time.

Source AA-011, Wood Fuel Preparation and Handling

KII estimated emissions as 4.7 ton/yr based on the AP-42 factor for Plywood Veneer and Layout Operations, Sawdust Handling, and a reduction of that factor by 75% due to the significantly greater particle size in the wood fuel versus sawdust. This factor was applied to all fuel burned in the boiler. DEQ used the APC-S-1 allowable emission of 94.91 ton/yr as potential.

KII supports the best engineering judgement factor for the potential to emit based on the physical and operational design of the process as appropriate for the PSD determination.

Although KII is willing to keep these emissions in the inventory for the PSD determination, it would be more appropriate to consider them as fugitives due to the various locations from which emissions occur from the conveying and handling equipment, all of which are outside.

Source AA-012, Parts Cleaners/Degreasers,
Source AA-013, Gasoline Storage Tank, and
Source AA-014, Diesel Storage Tank

KII and DEQ both consider these to be an insignificant sources of particulate emissions.

Using the higher values from above which are based on engineering judgement of potential to emit, the summary of emissions, Table 1, can be used to determine PSD status. With total particulate emissions from the facility of 63.14 tons, it is clear the potential to emit is less than 250 tons. Therefore, the Koppers Industries plant is not a PSD major source.

TABLE I
PARTICULATE EMISSIONS SUMMARY

SOURCE NO.	DESCRIPTION	EMISSION
AA-001	Wellons/Nebraska woodwaste boiler	42.50
AA-002	Murray oil fired boiler	1.88
AA-003	Wood treatment facility	0.00
AA-004	Tie Mill & Lumber Mill w/cyclone	8.76
AA-005, 015, and 016	Natural gas fired space heaters at boiler house, standby boiler room, and fire pump building	0.01
AA-006	Natural gas fired steam cleaner	0.01
AA-007	Wood stove in shop	1.34
AA-008	Treated wood storage	0.00
AA-009	Pole Kiln	0.00
AA-010	Pole Peeler	3.94
AA-011	Wood fuel preparation and handling	4.70
AA-012	Parts cleaner/degreasers	0.00
AA-013	Gasoline storage tank	0.00
AA-014	Diesel storage tank	0.00
TOTAL		63.14

STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
TITLE V
PERMIT TO OPERATE
AIR EMISSIONS EQUIPMENT
THIS CERTIFIES THAT

Koppers Industries, Inc.
Tie Plant Road
Tie Plant, Mississippi

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and conditions set forth herein. This permit is issued in accordance with Title V of the Federal Clean Air Act (42 U.S.C.A. § 7401 - 7671) and the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Issued this ________ day of ___________, 19___

Effective Date: As specified herein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

____
HEAD, OFFICE OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Expires ______ day of _________, 19___

Permit No. 0960-00012

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Draft/Proposed

TABLE OF CONTENTS

SECTION 1. GENERAL CONDITIONS

1.1 The permittee must comply with all conditions of this permit. Any noncompliance constitutes a violation of the Federal Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (Ref.: APC-S-6, Section III.A.6.a.)

1.2 It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (Ref.: APC-S-6, Section III.A.6.b.)

1.3 This permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. (Ref.: APC-S-6, Section III.A.6.c.)

1.4 This permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: APC-S-6, Section III.A.6.d.)

1.5 The permittee shall furnish to the DEQ within a reasonable time any information the DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permittee or, for information to be confidential, the permittee shall furnish such records to DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the Administrator along with a claim of confidentiality. (Ref.: APC-S-6, Section III.A.6.e.)

1.6 The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby.
(Ref.: APC-S-6, Section III.A.5.)

1.7 The permittee shall pay to the DEQ an annual permit fee. The amount of fee shall be determined each year based on the provisions of regulated pollutants for fee purposes and the fee schedule specified in the Commission on Environmental Quality's order which shall be issued in accordance with the procedure outlined in Regulation APC-S-6.

hearing has been requested will not incur any penalty or interest from and after the receipt by the Commission of the hearing petition. (Ref.: APC-S-6, Section VI.C.)

1.8 No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. (Ref.: APC-S-6, Section III.A.8.)

1.9 Any document required by this permit to be submitted to the DEQ shall contain a certification by a responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (Ref.: APC-S-6, Section II.E.)

1.10 The permittee shall allow the DEQ, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to perform the following:

(a) enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;

(b) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) as authorized by the Federal Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(Ref.: APC-S-6, Section III.C.2.)

1.11 Except as otherwise specified or limited herein, the permittee shall have necessary sampling ports and ease of accessibility for any new air pollution control equipment, obtained after May 8, 1970, and vented to the atmosphere. (Ref.: APC-S-1, Section 3.9 (a))

1.12 Except as otherwise specified or limited herein, the permittee shall provide the necessary sampling ports and ease of accessibility when deemed necessary by the DEQ for air pollution control equipment that was in existence prior to May 8, 1970. (Ref.: APC-S-1, Section 3.9 (b))

(b) the changes do not exceed the emissions allowable under this permit;

(c) the permittee provides the Administrator and the Department with written notification in advance of the proposed changes (at least seven (7) days, or such other time frame as provided in other regulations for emergencies) and the notification includes:

(1) a brief description of the change(s),

(2) the date on which the change will occur,

(3) any change in emissions, and

(4) any permit term or condition that is no longer applicable as a result of the change;

(d) the permit shield shall not apply to any Section 502(b)(10) change.
(Ref.: APC-S-6, Section IV.F.)

1.18 Should the Executive Director of the Mississippi Department of Environmental Quality declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule or, in the absence of an approved schedule, with the appropriate requirements specified in Regulation APC-S-3, "Regulations for the Prevention of Air Pollution Emergency Episodes" for the level of emergency declared. (Ref.: APC-S-3)

1.19 Except as otherwise provided by Regulations APC-S-2, "Permit Regulations for the Construction and/or Operation of Air Emissions Equipment", and Regulations APC-S-6, "Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act", or otherwise provided herein, a modification of the facility requires a Permit to Construct and a modification of this permit. Modification is defined as "Any physical change in or change in the method of operation of a facility which increases the actual emissions or the potential uncontrolled emissions of any air pollutant subject to regulation under the Federal Act emitted into the atmosphere by that facility or which results in the emission of any air pollutant subject to regulation under the Federal Act into the atmosphere not previously emitted. A physical change or change in the method of operation shall not include:

(a) routine maintenance, repair, and replacement;

(b) use of an alternative fuel or raw material by reason of an order under by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.

(a) Open burning without a forced-draft air system must not occur within 500 yards of an occupied dwelling.

(b) Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within 50 yards of an occupied dwelling.

(c) Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator.

(Ref.: APC-S-1, Section 3.7)

1.23 Except as otherwise specified herein, the permittee shall be subject to the following provision with respect to emergencies.

(a) Except as otherwise specified herein, an "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(b) An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in (c) following are met.

(c) The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(1) an emergency occurred and that the permittee can identify the cause(s) of the emergency;

(2) the permitted facility was at the time being properly operated;

SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES

Emission Point	Description
AA-001	Ref. No. 1, the 60.0 MMBTU/hr Wellons/Nebraska Woodwaste Boiler (firing treated and untreated wood) with multiclone collector
AA-002	Ref. No. 26, the 28.5 MMBTU/hr fuel oil fired Murray Boiler
AA-003	Ref. No. 5, Wood Treatment Facility consisting of five (5) treating cylinders, pumps, valves, blowers, and the following tanks: Ref. No. 6, the 30,000 gallon #5 Work Tank containing penta in oil Ref. No. 7, the 30,000 gallon #2 Work Tank containing creosote 60/40 Ref. No. 8, the 30,000 gallon #3 Work Tank containing creosote Ref. No. 9, the 22,420 gallon #4 Work Tank containing creosote #1 Ref. No. 10, the 30,000 gallon 2nd Decant Tank containing creosote/water Ref. No. 11, the 4,200 gallon Measuring Tank containing creosote #1 Ref. No. 12, the 100,000 gallon Creo Storage Tank containing creosote #1 Ref. No. 13, the 100,000 gallon Water Surge Tank containing process water Ref. No. 14, the 100,000 gallon Oil Storage Tank containing fuel oil Ref. No. 15, the 105,000 gallon Creo Storage Tank containing creosote 60/40 Ref. No. 16, the 300,000 gallon Process Water Surge Tank containing process water Ref. No. 17, the 250,000 gallon Storm Water Surge Tank containing storm water Ref. No. 18, the 2,700 gallon Coagulant Tank containing Dearfloc 4301 Ref. No. 19, the 4,500 gallon Decant Tank containing creo/oil/water Ref. No. 20, the 8,000 gallon Creo Blowdown Tank containing water/creosote Ref. No. 21, the 6 ft. dia. x 60 ft. long Air Receiver containing compressed air Ref. No. 22, the 7 ft. dia. x 40 ft. long Air Receiver containing compressed air Ref. No. 23, the 8,000 gallon Penta Blowdown Tank containing water/penta/oil Ref. No. 26, the 150,000 gallon Aeration Tank containing waste water Ref. No. 27, the 25,000 gallon Clarifier Tank containing waste water Ref. No. 28, the 15,000 gallon Discharge Tank containing waste water Ref. No. 29, the 4,000 gallon Creosote Dehydrator Ref. No. 30, the 14,000 gallon N. Penta Equalization Tank containing water/oil/penta Ref. No. 31, the 14,000 gallon S. Penta Equalization Tank containing water/oil/penta Ref. No. 32, the 11,500 gallon Penta Mix Tank containing oil/penta Ref. No. 33, the 5,000 gallon Penta Mix Tank containing oil/penta Ref. No. 34, the 10,500 gallon Penta Concentrate Storage Tank containing penta concentrate
AA-004	Ref. No. 27, the Tie Mill and Lumber Mill with cyclone
AA-005	Ref. No. 33, the Boiler House natural gas fired space heater rated at 0.2 MMBTU/hr
AA-006	Ref. No. 35, the natural gas fired steam cleaner rated at 0.44 MMBTU/hr
AA-007	Ref. No. 36, the Wood Stove Shop Heater rated at 0.10 MMBTU/hr
AA-008	Ref. No. 8, Treated Wood Storage

SECTION 3. EMISSION LIMITATIONS & STANDARDS

A. Facility-Wide Emission Limitations & Standards

3.A.1 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty (40) percent opacity subject to the exceptions provided in (a) & (b).

(a) Startup operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one hour and not to exceed three (3) startups per stack in any twenty-four (24) hour period.

(b) Emissions resulting from soot blowing operations shall be permitted provided such emissions do not exceed 60 percent opacity, and provided further that the aggregate duration of such emissions during any twenty-four (24) hour period does not exceed ten (10) minutes per billion BTU gross heating value of fuel in any one hour.

(Ref.: APC-S-1, Section 3.1)

3.A.2 Except as otherwise specified or limited herein, the permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of 40% opacity, equivalent to that provided in Paragraph 3.A.1. This shall not apply to vision obscuration caused by uncombined water droplets. (Ref.: APC-S-1, Section 3.2)

B. Emission Point Specific Emission Limitations & Standards

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AA-001 and AA-007	State Regulation APC-S-1 §3.4(b)	3.B.1	Particulate Matter	0.30 grains per standard dry cubic foot
AA-001, AA-002, AA-005, AA-006, AA-007, AA-015, and AA-016	State Regulation APC-S-1 §4.1(a)	3.B.2 and 1.19	Sulfur Dioxide	4.8 pounds per million BTU heat input or as otherwise limited by facility modification restrictions

3.B.2 For Emission Points AA-001, AA-002, AA-005, AA-006, AA-007, AA-015, and AA-016, the maximum discharge of sulfur oxides shall not exceed 4.8 pounds (measured as sulfur dioxide) per million BTU heat input.

3.B.3 For Emission Point AA-002, the maximum permissible emission of ash and/or particulate matter shall not exceed an emission rate as determined by the relationship

$$E = 0.8808 * I^{-0.1667}$$

where E is the emission rate in pounds per million BTU per hour heat input and I is the heat input in millions of BTU per hour.

3.B.4 For Emission Points AA-005, AA-006, AA-015, and AA-016, the maximum permissible emission of ash and/or particulate matter shall not exceed 0.6 pounds per million BTU per hour heat input.

3.B.5 For Emission Points AA-003, AA-004, and AA-008 through AA-012, the particulate matter emission rate shall not exceed the amount determined by the relationship

$$E = 4.1\ p^{0.67}$$

where E is the emission rate in pounds per hour and p is the process weight input rate in tons per hour. Conveyor discharge of coarse solid matter may be allowed if no nuisance is created beyond the property boundary where the discharge occurs.

SECTION 4. COMPLIANCE SCHEDULE

4.1 Unless otherwise specified herein, the permittee shall be in compliance with all requirements contained herein upon issuance of this permit.

4.2 Except as otherwise specified herein, the permittee shall submit to the Permit Board and to the Administrator a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, by January 31 for the preceding calendar year. Each compliance certification shall include the following:

(a) the identification of each term or condition of the permit that is the basis of the certification;

(b) the compliance status;

(c) whether compliance was continuous or intermittent;

(d) the method(s) used for determining the compliance status of the source, currently and over the applicable reporting period;

(e) such other facts as may be specified as pertinent in specific conditions elsewhere in this permit.

(Ref.: APC-S-6, Section III.C.5.a.,c.,&d.)

SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

A. General Monitoring, Recordkeeping and Reporting Requirements

5.A.1 The permittee shall install, maintain, and operate equipment and/or institute procedures as necessary to perform the monitoring and recordkeeping specified below.

5.A.2 In addition to the recordkeeping specified below, the permittee shall include with all records of required monitoring information the following:

(a) the date, place as defined in the permit, and time of sampling or measurements;
(b) the date(s) analyses were performed;
(c) the company or entity that performed the analyses;
(d) the analytical techniques or methods used;
(e) the results of such analyses; and
(f) the operating conditions existing at the time of sampling or measurement.

5.A.3 Except as otherwise specified herein, the permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

5.A.4 Except as otherwise specified herein, the permittee shall submit reports of any required monitoring by July 31 and January 31 for the preceding six-month period. All instances of deviations from permit requirements must be clearly identified in such reports and all required reports must be certified by a responsible official consistent with APC-S-6, Section II.E.

5.A.5 Except as otherwise specified herein, the permittee shall report all deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken within five (5) days of the time the deviation began.

5.A.6 Except as otherwise specified herein, the permittee shall perform emissions sampling and analysis in accordance with EPA Test Methods and with any continuous emission monitoring requirements, if applicable. All test methods shall be those versions, or their equivalents approved by the DEQ and the EPA.

SECTION 6. ALTERNATIVE OPERATING SCENARIOS

None permitted.

APPENDIX A

List of Abbreviations Used In this Permit

APC-S-1	Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants
APC-S-2	Permit Regulations for the Construction and/or Operation of Air Emissions Equipment
APC-S-3	Regulations for the Prevention of Air Pollution Emergency Episodes
APC-S-4	Ambient Air Quality Standards
APC-S-5	Regulations for the Prevention of Significant Deterioration of Air Quality
APC-S-6	Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act
APC-S-7	Acid Rain Program Permit Regulations for Purposes of Title IV of the Federal Clean Air Act
BACT	Best Available Control Technology
CEM	Continuous Emission Monitor
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
COMS	Continuous Opacity Monitoring System
DEQ	Mississippi Department of Environmental Quality
EPA	United States Environmental Protection Agency
gr/dscf	Grains Per Dry Standard Cubic Foot
HP	Horsepower
HAP	Hazardous Air Pollutant
lbs/hr	Pounds per Hour
M or K	Thousand
MACT	Maximum Achievable Control Technology
MM	Million
MMBTUH	Million British Thermal Units per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards For Hazardous Air Pollutants, 40 CFR 61 or National Emission Standards For Hazardous Air Pollutants for Source Categories, 40 CFR 63
NMVOC	Non-Methane Volatile Organic Compounds
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards, 40 CFR 60
O&M	Operation and Maintenance
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 μm in diameter
ppm	Parts per Million
PSD	Prevention of Significant Deterioration, 40 CFR 52
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TPY	Tons per Year
TRS	Total Reduced Sulfur
VEE	Visible Emissions Evaluation
VHAP	Volatile Hazardous Air Pollutant
VOC	Volatile Organic Compound

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Draft/Proposed

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

KOPPERS INDUSTRIES

217404 62-4/311

Date: AUGUST 27 1996

Pay To The Order Of: MISSISSIPPI ST DEPT ENVIRONMEN

Amount $1,552.64

ONE THOUSAND FIVE HUNDRED FIFTY TWO AND 64/100 ONLY

MISSISSIPPI ST DEPT ENVIRONMEN
TITLE V AIR PERMIT
PO BOX 20325
JACKSON MS 39289-1325

Payable through Mellon Bank (DE) N.A., Wilmington, DE 19899
Mellon Bank (East) N.A., Philadelphia, PA 19102

KOPPERS INDUSTRIES, INC.

V.P. AND C.F.O. TREASURER

⑈217404⑈ ⑆031100047⑆ 2⑈943 678⑈

KOPPERS INDUSTRIES, INC. PITTSBURGH PA 217404

SP CD	VENDOR	DIV	OUR AUDIT	YOUR INVOICE NBR	INV MO/DA	INV AMOUNT	DISC	NET AMT PAYABLE
7	940505031	477	02406082533	532	0807	1552.64	0.00	***1552.64

960-12

AUG 1996
RECEIVED
AS/BS
FEES

DEPT OF ENVIRONMENTAL QUALITY
TITLE V AIR PERMIT FEE
P. O. Box 20325
Jackson, MS 39289-1325

RECEIVED
AUG - 8 1996
DEQ-OPC

** CREDIT MEMO **

* * TITLE V AIR OPERATING PERMIT FEE * *

BILL TO:
KOPPERS INDUSTRIES INC

P O BOX 160
TIE PLANT, MS 38960

CREDIT MEMO 531
INVOICE DATE: 8/07/96

CONTACT PERSON: Alice Brown
TELEPHONE: 601-961-5572

FACILITY I.D. # 0960-00012

POLLUTANT	ACTUAL OR ALLOWABLE EMISSIONS	TONS OF EMISSIONS BILLED	FEE PER TON OF EMISSIONS	TOTAL FEE
PARTICULATE MATTER	40.210	40.210	16.00	(643.36)
SO2	157.810	157.810	16.00	(2,524.96)
NOX	47.740	47.740	16.00	(763.84)
CO	0.000	0.000	16.00	0.00
VOC	18.880	18.880	16.00	(302.08)
LEAD	0.000	0.000	16.00	0.00
TRS	0.000	0.000	16.00	0.00
TOTAL HAP's (VOC)	0.000	0.000	16.00	0.00
TOTAL HAPs (Non-Voc)	0.000	0.000	16.00	0.00
CFC's / HCFC's	0.000	0.000	16.00	0.00
				(4,234.24)

** CREDIT MEMO **

THIS CM CANCELS OUR INVOICE # 132 WHICH WILL BE REPLACED WITH INVOICE 532 BASED UPON THE ACTUAL EMISSIONS.

* * * *FILE COPY* * * *

DEPT OF ENVIRONMENTAL QUALITY
TITLE V AIR PERMIT FEE
P. O. Box 20325
Jackson, MS 39289-1325

RECEIVED
AUG - 8 1996
DEQ-OPC

** INVOICE **

*** TITLE V AIR OPERATING PERMIT FEE ***

BILL TO:
KOPPERS INDUSTRIES INC

P O BOX 160
TIE PLANT, MS 38960

INVOICE # 532
INVOICE DATE: 8/07/96

CONTACT PERSON: Alice Brown
TELEPHONE: 601-961-5572

FACILITY I.D. # 0960-00012

TERMS: DUE 9/1/96

POLLUTANT	ACTUAL OR ALLOWABLE EMISSIONS	TONS OF EMISSIONS BILLED	FEE PER TON OF EMISSIONS	TOTAL FEE
PARTICULATE MATTER	20.960	20.960	16.00	335.36
SO2	3.640	3.640	16.00	58.24
NOX	31.730	31.730	16.00	507.68
CO	78.900	0.000	16.00	0.00
VOC	40.710	40.710	16.00	651.36
LEAD	0.000	0.000	16.00	0.00
TRS	0.000	0.000	16.00	0.00
TOTAL HAP's (VOC)	12.670	0.000	16.00	0.00
TOTAL HAPs (Non-Voc)	0.000	0.000	16.00	0.00
CFC's / HCFC's	0.000	0.000	16.00	0.00

TOTAL ANNUAL FEE DUE 1,552.64

As per Section 49-17-30 of the MS Code, the maximum emission rate used for calculation of fees for any pollutant is 4,000 tons, with total fees not to exceed $250,000 per facility. You were billed for actual or allowable emissions based upon the option which you previously indicated.

* * * FAILURE TO REMIT PAYMENT BY THE DUE DATE MAY * * *
* * * * * * * * RESULT IN A LATE PENALTY * * * * * * * *

* * * FILE COPY * * *

RECEIVED
JUL 29 1996
Dept. of Environmental Quality
Office of Pollution Control

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM
P.O. BOX 10385
JACKSON, MS 39289-0385

In accordance with Section 49-17-30, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

MDEQ Facility ID #: 0960 - 00012 SIC Code: 2491

Facility Name: Koppers Industries, Inc.

Site Address: 543 Tie Plant Road (Street Location) Tie Plant (City) MS (State) - (Zip Code)

If actual emissions are reported, they should be the actual emissions that were emitted from the facility during calendar year 1995. The annual permit fee is due on September 1st of each year.

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	20.96
SO2	157.81	3.64
NOX	47.74	31.73
CO	29.37	78.90
VOC*	18.88	40.71
TRS	0.00	0
LEAD	0.00	0
CFCs/HCFCs	0.00	0
Other	0.00	0
Total HAPs (Voc)	0.00	12.67
Total HAPs (Non-Voc)	0.00	0

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

Thomas L. Henderson Plant Manager 6/18/96

Signature and Title Date

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

	tn/yr	Sulfur	Chlorine
Total Wood Burned:	18,768	0.01%	0.04%
Creo Wood Burned:	0	0.25%	0.04%
Penta Wood Burned:	0	0.25%	0.25%
Untreated Wood Burned:	18,768	0.01%	0.04%
Removal Efficiency (1):		70.00%	45.00%

(lb/hr): 9375

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2.07	lb/tn	2/96 Test	19.42	9.70
SO2	0.12	lb/tn	Mass Calc	1.13	0.56
NOX (3)	3.3	lb/tn	2/96 test	30.97	15.47
CO (2)	8.3	lb/tn	CEM	77.89	38.91
VOC	0.91	lb/tn	FR Test	8.54	4.27
HCl	0.452	lb/tn	2/96 Test	4.25	2.12
Arsenic	8.8E-05	lb/tn	AP-42	0.0008	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0002	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0012	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0029	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.0835	0.042
Nickel	5.6E-04	lb/tn	AP-42	0.0053	0.003
Selenium	1.8E-05	lb/tn	AP-42	0.0002	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.09	0.047

(1) Removal efficiencies based on 2/96 stack test.

(2) CO factor is 8.3 for 600 ppm fired on untreated fuel, 2.1 for 150 ppm fired on treated fuel.

(3) NOX factor is 3.3 for high fire, treated wood. Use 1.6 for untreated wood.

26-BOILER, FUEL OIL

Oil Burned(MGal/yr): 70.893

Fuel Use Rate(MGal/hr) 0.204

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.07	0.41
SO2	71	lb/MGal	AP-42	2.52	14.48
NOX	20	lb/MGal	AP-42	0.71	4.08
CO	5	lb/MGal	AP-42	0.18	1.02
VOC	0.2	lb/MGal	AP-42	0.01	0.04

Number of days boiler assumed to operate is 14

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,876,227	C. F.
Creosote Poles	134,076	C. F.
Total Creosote Wood	2,010,303	C. F.
Oil/Penta Poles	971,402	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote (VOC)	0.015	lb/cf	Form R	15.08	3.44
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.32	0.76
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.56	0.58
P-Xylenes	4.5	% in vapor	Calculation	0.68	0.15
Phenol	1.4	% in vapor	Calculation	0.21	0.05
Quinoline	1.5	% in vapor	Calculation	0.23	0.05
Toluene	26	% in vapor	Calculation	3.92	0.89
TOTAL CREO. HAP	73.63	% in vapor		11.10	2.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.86	1.11
TOTAL VOC				19.95	4.55

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.99	0.91
Naphthalene	1.37E-03	lb/cf	FR Test	1.29	0.29
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.77	0.18
Naphthalene	3.34E-03	lb/cf	FR Test	0.224	0.051
Benzene	4.23E-06	lb/cf	FR Test	0.000	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.010	0.002
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	5.59	1.27
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.001	0.000
Totals					
VOC				10.34	2.36
Naphthalene				1.51	0.34
Benzene				0.002	0.000
Toluene				0.043	0.010
Pentachlorophenol				0.001	0.000
HAP Organics (Total)				1.56	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried: 455,668 C. F.

Batch size (cf): 13000

Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.05	lb/cf	Alabama	11.39	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70,200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70,200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	240,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	5,400	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	0.95	3.465

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 18,768 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	2.35	3.00

35-STEAM CLEANER, NATURAL GAS FIRED

Annual Usage 2000 hours/yr

Fuel Use Rate 440 CF/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	12	lb/MMCF	AP-42	0.01	0.01
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	100	lb/MMCF	AP-42	0.04	0.04
CO	21	lb/MMCF	AP-42	0.01	0.01
VOC	5.8	lb/MMCF	AP-42	0.00	0.00

36-WOOD STOVE HEATER, SHOP

Annual Usage 7.2 tn/yr

Fuel Use Rate 0.01 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	30.6	lb/tn	AP-42	0.11	0.31
SO2	0.4	lb/tn	AP-42	0.00	0.00
NOX	2.8	lb/tn	AP-42	0.01	0.03
CO	230.8	lb/tn	AP-42	0.83	2.31
VOC	43.8	lb/tn	AP-42	0.16	0.44

37-PARTS CLEANERS, DEGREASERS

Number of units operating: 2

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.33	tn/unit/yr	AP-42	0.66	0.00

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	20.96	15.89
SO2 (2)	....	3.64	15.05
NOX	....	31.73	19.62
CO	....	78.90	42.24
VOC(less fugitive)	....	40.71	18.32
HAPs(Organics/VOC)	....	12.67	2.89
Naphthalene	....	4.07	0.93
HAP Metals	....	0.09	0.05
HCl	....	4.25	2.12
Total HAPs	....	17.01	5.06

(2) Assumes backup boiler operating at same time as primary for number of days shown.

1992 AIR EMISSIONS INVENTORY FOR GRENADA FACILITY

TANK POINT EMISSIONS

EMISSION SOURCE	PROCESS DESCRIPTIO	TANK NO.	TANK CAPACITY (x1000 gal)	TANK TEMP (°F)	TREATING AGENT	MW	VAPOR PRESS. (psia)	TANK DIA. D (ft)	TANK HT. (ft)	VAPOR SPACE H (ft)	‾T (°F)	F subP (1)	C (1)	K subC (1)	BRTHN LOSSES LsubB (lb/yr)	TANK TURN OVERS (1)	K subN (1)	WRKG. LOSSES LsubW (lb/yr)	THRUPUT (1000gal/yr)	TOTAL TANK LOSSES (2) (lb/yr)
E-13a	PENTA WK	1WT	29.8	150	8.5% PENTA	266	0.00008	13.0	30.0	2.0	20	1.4	0.67	1.0	0.8	269	0.28	1.1	8002.6	1.9
E-13b	PENTA WK	5WT	29.8	150	8.5% PENTA	266	0.00008	13.0	30.0	2.0	20	1.4	0.67	1.0	0.8	412	0.24	1.5	12274.3	2.3
E-12	PENTA MIX	19	9.9	160	8.5% PENTA	266	0.00008	10.0	16.0	6.0	20	1.4	0.54	1.0	0.7	132	0.42	0.3	1308.8	1.0
E-11	PENTA TAN	KB-3	10.8	160	40%PENTA	266	0.00038	10.0	18.0	6.0	20	1.4	0.54	1.0	2.1	23	1.00	0.6	251.5	2.7
E-15	PENTA BLO	P-BD	8.2	80	PENTA	266	0.00008	10.0	14.0	3.0	20	1.4	0.54	1.0	0.5	148	1.00	0.6	1215.9	1.1
E-22	PRIM. SEPE	P-S	12.3	70	PENTA	266	0.00008	10.0	21.0	3.0	20	1.4	0.54	1.0	0.5	99	1.00	0.6	1215.9	1.1
E-23	SECOND. SE	S-S	12.3	70	PENTA	266	0.00008	10.0	21.0	3.0	20	1.4	0.54	1.0	0.5	99	1.00	0.6	1215.9	1.1
																		TOTAL EMISSIONS		11.3

Penta

(1) Dimensionless

(2) Total losses include breathing losses (LsubB) and working losses (LsubW).

VACUUM PUMP EMISSIONS

EMISSION SOURCE	NO. OF PUMPS	COMPONENT	EMISSION FACTOR (lb/cu ft)	VOLUME (x1000) (cu ft/yr)	EMISSION (lb/yr)
E-16	1	PENTA	5.35E-07	32616	17.4

Penta

FUGITIVE CYLINDER EMISSIONS: UNLOADING

EMISSION SOURCE	PROCESS DESCRIPTIO	BATCH /YEAR	VOID SPACE (cf/batch)	TEMP (°F)	TREATING AGENT	MW	PP (psi)	D (ft)	L (ft)	EMISSIONS (lb/yr)
E-14a	CYLINDER 1	348	2941	140	8.5% PEN	266	0.00008	6.0	160	3.4
E-14b	CYLINDER 5	550	2093	140	8.5% PEN	266	0.00008	6.0	130	3.8
							TOTAL EMISSIONS			7.195

Penta

1992 AIR EMISSIONS INVENTORY FOR GRENADA FACILITY

FUGITIVE EQUIPMENT LEAKS

EMISSION SOURCE	PROCESS DESCRIPTION	NUMBER IN SERVICE	EMISSIONS (lb/hr/source)	OPERATING HOURS (hrs/yr)	EMISSIONS (lb/yr)	
E-18	PUMP SEALS	2	0.00047	225	0.2	
E-18	VALVES(IN LINE)	39	0.0000051	225	0.0	
E-18	PRESSURE RELIEF VA	3	0.0023	225	1.6	
E-18	OPEN ENDED VALVES	5	0.000037	225	0.0	
E-18	FLANGES	114	0.000018	225	0.5	
			TOTAL EMISSIONS		2.3	— Solution

EMISSION SOURCE	COMPOUND EMISSIONS	COMPOUND WEIGHT %	EMISSIONS (lb/yr)	
E-18	PENTA	8.50	0.2	Penta

1992 AIR EMISSIONS INVENTORY FOR GRENADA FACILITY

TANK POINT EMISSIONS

EMISSION SOURCE	PROCESS DESCRIPTIO	TANK NO.	TANK CAPACITY (x1000 gal)	TANK TEMP (¯F)	TREATING AGENT	MW	VAPOR PRESS. (psia)	TANK DIA. D (ft)	TANK HT. (ft)	VAPOR SPACE H (ft)	ΔT (¯F)	F subP (1)	C (1)	K subC (1)	BRTHN LOSSES LsubB (lb/yr)	TANK TURN OVERS (1)	K subN (1)	WRKG. LOSSES LsubW (lb/yr)	THRUPUT (1000gal/yr)	TOTAL TANK LOSSES (3) (lb/yr)
E-24a	DEHYDRAT	DEH-1	5.0	212	CREO.	168	0.28	6.0	19.7	3.3	20	1.4	0.30	1.0	0.0	0	1.00	0.0	0.0	0.0
E-24b	DEHYDRAT	DEH-2	5.0	212	CREO.	168	0.28	6.0	19.7	3.3	20	1.4	0.45	1.0	29.9	22	1.00	121.9	108.0	151.8
E-3a	STORAGE TANK	T-1S	111.6	60	CREO.	168	0.002	29.0	24.2	10.7	20	1.4	1.00	1.0	63.4	5	1.00	4.2	523.7	67.6
E-3b	STORAGE TANK	T-6	105.7	60	60/40CRE.	168	0.002	30	20	10	20	1.4	1.00	1.0	63.4	5	1.00	4.2	523.9	67.6
E-4b	WORK TANK	T-2W	29.8	200	60/40CRE.	168	0.2220	13.0	30.0	2.0	20	1.4	0.65	1.0	108.6	261	0.26	1809	7772.4	1917.5
E-4b	WORK TANK	T-2W	29.8	200	CREO.	168	0.2220	13.0	30.0	2.0	20	1.4	0.65	1.0	108.6	5	1.00	131.2	146.6	239.8
E-4c	#4 VERT	T-4V	4.2	200	CREO.	168	0.2220	6.7	20.0	2.0	20	1.4	0.35	1.0	18.4	90	0.24	81.0	377.1	99.4
E-4d	#4 HORIZ	T-4H	22.4	200	CREO.	168	0.2220	6.7	106.0	3.3	20	1.2	0.35	1.0	20.3	228	0.32	1461	5100	1481.2
E-4e	# 4 VERT	T-4V	4.2	200	60/40CRE.	168	0.2220	6.7	20	2	20	1.4	0.35	1	4.4	118	0.48	1461	31.4	1465.2
E-19	STORMWAT STORAGE TANK	17	259.0	90	5% CREO.	168	0.007	35.1	36.0	18.0	20	1.3	1.00	1.0	250.3	7	1.00	49.4	1750.0	15.0
E-20	PROCESS SURGE TANK	13	111.0	85	15% CREO.	168	0.0060	28.0	24.1	12.6	20	1.4	0.99	1.0	135.5	47	1.00	124.9	5161.9	39.1
E-6	CREO BLOW	C-BD	8.2	90	15% CREO	168	0.007	5.0	14.0	3.0	20	1.4	0.25	1.0	0.9	121	1.00	27.9	990.0	4.3
E-21	SEPERATOR	S-1	66	70	10% CREO	168	0.003	22.0	11.5	3.0	20	1.4	0.92	1.0	24.9	105	0.48	40.1	6912.0	6.5
																			TOTAL	5,555.0

Creo

(1) Dimensionless

(2) Total losses include breathing losses (LsubB) and working losses (LsubW).

1992 AIR EMISSIONS INVENTORY FOR GRENADA FACILITY

UNLOADING EMISSIONS

EMISSION SOURCE	PROCESS DESCRIPTIO	COMPO.	TANK CAPACITY (x1000 gal)	TEMP (˚F)	MW	VAPOR PRESS (psia)	SATURATION FACTOR	(1)LOADING LOSSES (lb/yr)	THROUGHPUT (1000 gal/yr)	TOTAL LOSSES (lb/yr)	
E-2	TANK CARS	CREO.	19.1	220	168	0.33	0.5	1.565	57.4	89.8	Creo

(1) Loading losses (lb/1000 gals.) = 12.46*saturation factor*molecular weight*vapor pressure (psia)/temperature(F)
AP-42 Section 4.4, Equation 1.

FUGITIVE CYLINDER EMISSIONS: UNLOADING

EMISSION SOURCE	PROCESS DESCRIPTIO	BATCH /YEAR	VOID SPACE (cf/batch)	TEMP (˚F)	TREATING AGENT	MW	PP (psi)	D (ft)	L (ft)	EMISSIONS (lb/yr)	
E-5a	CYLINDER 2	91	2492	190	#1 CREO	168	0.17	6.0	130	930	
E-5b	CYLINDER 4	239	2492	190	#1 CREO	168	0.17	6.0	130	2441	
E-5a	CYLINDER 2	273	1899	190	60/40 CCTS	168	0.17	6.0	130	2125	
E-5b	CYLINDER 4	16	1899	190	60/40 CCTS	168	0.17	6.0	130	2125	
						TOTAL EMISSIONS				7621	Creo

FUGITIVE EQUIPMENT LEAKS

#1 CREOSOTE

EMISSION SOURCE	PROCESS DESCRIPTIO	NUMBER N SERVICE	EMISSIONS (lb/hr/source)	OPERATING HOURS (hrs/yr)	EMISSIONS (lb/yr)
E-9	PUMP SEAL	3	0.0047	1320	18.6
E-9	VALVES(IN	35	5.1E-05	1320	2.4
E-9	PRESSURE VALVES	2	0.023	1320	60.7
E-9	OPEN ENDE	7	0.00037	1320	3.4
E-9	FLANGES	125	0.00018	1320	29.7
				TOTAL EMISSIONS	114.8

FUGITIVE EQUIPMENT LEAKS

60/40 CCTS

EMISSION SOURCE	NUMBER IN SERVICE	EMISSIONS (lb/hr/source)	OPERATING HOURS (hrs/yr)	EMISSIONS (lb/yr)
PUMP SEALS	6	0.005	1069	30.1
VALVES(IN LINE)	54	5E-05	1069	2.9
PRESSURE RELIEF	4	0.023	1069	98.3
OPEN ENOED VALVES	19	4E-04	1069	7.5
FLANGES	190	2E-04	1069	36.6
		TOTAL EMISSIONS		175.5
				114.8
				290.3

Creo

VACUUM PUMP EMISSIONS

EMISSION SOURCE	TREATING AGENT	CYCLE	EMISSION FACTOR	VACUUM/ (hrs/chg)	NO. OF CHARGES	EMISSIONS (lb/yr)
E-9	CREOSOTE	FV	0.01055	2	330	6.96
E-9	60/40 CCTS	BOLT.	0.01055	11	115	13.35
	60/40 CCTS	FV	0.0054	2.5	289	3.90
						24.21 Creo

TANK BREATHING AND WORKING LOSSES, AP-42, 9/85 ed.

FUGITVE CYLINDER EMISSIONS ARE BASED ON CALCULATIONS FROM EPA 560/4-88-002, DECEMBER 1987, PAGES 3-10,11.

FUGITIVE EQUIPMENT LEAKS ARE BASED ON EMISSION FACTORS OBTAINED FROM APPENDIX D-1 OF EPA 560/4-88-002, THE CREOSOTE/CTS EMISSION FACTORS AND PENTA EMISSION FACTORS WERE DIVIDED BY 10 AND BY 100, RESPECTIVELY, IN ACCORDANCE WITH AWPI GUIDANCE DOCUMENT, MAY 1990, PAGE 7.

HOURS/YEAR FOR FUGITIVE EQUIPMENT LEAKS ARE BASED ON TYPICAL TREATING TIMES PER CHARGE AND CHARGES PER YEAR OBTAINED FROM WORKSHEET 5 OF SARA TITLE III, FORM R.

VACUUM PUMP EMISSIONS- GUIDANCE DOCUMENT IN COMPLETION OF SARA SECTION 313 OF TOXIC CHEMICAL RELEASE INVENTORY REPORT, AMERICAN WOOD PRESERVERS INSTITUTE, JUNE 1989.

SUSQUEHENNA VACUUM PUMP EMISSION STUDY, PERFORMED BY KEYSTONE ENVIRONMENTAL RESOURCES, MAY 1990.

Emission Factor Calculation for Wood Preserving Process

Method: Use Form R emission calculations for 1992 divided by 1992 treating volumes. Reasonable assumption is that emissions variations are proportional to treating volumes.

1992 Emissions for Form R

Creosote:

Tank Point	5555	lb/yr
Tank Car Unloading	90	
Cylinder Fugitives	7621	
Fugitive Equipment	290	
Vacuum Pump	24	
	13,580	lb/yr

Pentachlorophenol:

Tank Point	11.3
Vacuum Pump	17.4
Cylinder Fugitives	7.2
Fugitive Equipment	0.2
	36.1

1992 Treatment Volumes

Creosote	911,922	C.F.
Penta	1,419,594	CF

Factors

Creosote: 13580 lb/911,922 CF = 0.015 lb/CF

Penta: 36.1/1,419,594 = 2.54E-5 lb/CF

CALCULATION OF VAPOR PRESURES FOR CREOSOTE

31-Aug-95 File> vp-p1-p2

	Constituent	MW C	Pure Component Vapor Press. at 180 F (mm Hg) D	P1/P13 Creosote: Liquid Conc. in Creosote (%) F	P1/P13 Creosote: Liquid Mole Fraction (moles) G=F*C4/100/C	P1/P13 Creosote: Equilib. Vapor Concen. Pressure (mm Hg) H=D*G	P1/P13 Creosote: Equil. Vapor Mole Mass I=C*H	Vapor Mass Fraction (%) J=100I/sumI	Vapor MW K=sumI/sumH	P2 Creosote: Liquid Conc. in Creosote (%) L	P2 Creosote: Liquid Mole Fraction (moles) M=L*C4/100/C	P2 Creosote: Equilib. Vapor Concen. Pressure (mm Hg) N=D*M	P2 Creosote: Equil. Vapor Mole Mass O=C*N	Vapor Mass Fraction (%) P=100*O/sumO	Vapor MW Q=sumO/sumN
	Creosote density (Kg/l)	1.07													
	Whole creosote MW is	187.8													
	VOLITILE CONSTITUENTS (NON-PAH)														
	Water	18	4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00		0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00	
H	Benzene	78	7.60E+02	1.00E-01	2.41E-03	1.83E+00	1.4E+02	2.2E+01		1.00E-01	2.41E-03	1.83E+00	1.4E+02	2.2E+01	
H	Toluene	92	4.60E+02	2.00E-01	4.08E-03	1.88E+00	1.7E+02	2.6E+01		2.00E-01	4.08E-03	1.88E+00	1.7E+02	2.6E+01	
H	Phenol	94	1.60E+01	3.05E-01	6.09E-03	9.75E-02	9.2E+00	1.4E+00		2.30E-01	4.60E-03	7.35E-02	6.9E+00	1.0E+00	
H	Cresols	108	1.00E+01 *	1.60E-01	2.78E-03	2.78E-02	3.0E+00	4.6E-01		1.30E-01	2.26E-03	2.26E-02	2.4E+00	3.7E-01	
H	P-Xylene	106	1.25E+02	1.25E-01	2.21E-03	2.77E-01	2.9E+01	4.5E+00		3.00E-02	5.32E-04	6.64E-02	7.0E+00	1.1E+00	
	C2-Benzenes	106	1.25E+02 *	1.34E-01	2.37E-03	2.97E-01	3.1E+01	4.8E+00		4.00E-02	7.09E-04	8.86E-02	9.4E+00	1.4E+00	
	SEMI-VOLITILE (PAH) CONSTITUENTS														
	Indene	116	3.00E+01 *	1.40E+00	2.27E-02	6.80E-01	7.9E+01	1.2E+01		2.00E+00	3.24E-02	9.71E-01	1.1E+02	1.7E+01	
	Indole	117	2.00E+00 *	3.20E-01	5.14E-03	1.03E-02	1.2E+00	1.8E-01		8.60E-01	1.38E-02	2.76E-02	3.2E+00	4.9E-01	
	Dihydroindene (Indan)	118	3.00E+01 *	2.80E-01	4.46E-03	1.34E-01	1.6E+01	2.4E+00		1.40E-01	2.23E-03	6.68E-02	7.9E+00	1.2E+00	
H	Napthalene	128	7.29E+00	8.10E+00	1.19E-01	8.66E-01	1.1E+02	1.7E+01		7.87E+00	1.15E-01	8.42E-01	1.1E+02	1.6E+01	
H	Quinoline	129	6.00E+00	8.60E-01	1.25E-02	7.51E-02	9.7E+00	1.5E+00		1.26E+00	1.83E-02	1.10E-01	1.4E+01	2.1E+00	
	Methyl naphthalenes	142	4.00E+00	4.05E+00	5.36E-02	2.14E-01	3.0E+01	4.6E+00		6.23E+00	8.24E-02	3.30E-01	4.7E+01	7.1E+00	
	Acenaphthylene	152	1.09E+00	4.10E-01	5.07E-03	5.52E-03	8.4E-01	1.3E-01		4.20E-01	5.19E-03	5.66E-03	8.6E-01	1.3E-01	
H	Biphenyl	154	1.00E+00 *	5.60E-01	6.83E-03	6.83E-03	1.1E+00	1.6E-01		9.20E-01	1.12E-02	1.12E-02	1.7E+00	2.6E-01	
	Acenaphthene	154	5.27E-02	4.04E+00	4.93E-02	2.60E-03	4.0E-01	6.1E-02		6.30E+00	7.68E-02	4.05E-03	6.2E-01	9.4E-02	
	C2-Naphthalenes	156	5.00E+00 *	7.60E-01	9.15E-03	4.57E-02	7.1E+00	1.1E+00		1.31E+00	1.58E-02	7.89E-02	1.2E+01	1.9E+00	
	Fluorene	166	5.04E-01	1.77E+00	2.00E-02	1.01E-02	1.7E+00	2.6E-01		4.30E+00	4.86E-02	2.45E-02	4.1E+00	6.1E-01	
	Carbazole	167	4.00E-02	1.38E+00	1.55E-02	6.21E-04	1.0E-01	1.6E-02		1.10E+00	1.24E-02	4.95E-04	8.3E-02	1.2E-02	
H	Dibenzofuran	168	7.00E-01	3.03E+00	3.39E-02	2.37E-02	4.0E+00	6.1E-01		5.07E+00	5.67E-02	3.97E-02	6.7E+00	1.0E+00	
	C1-Acenaphthalenes	168	1.00E-01 *	7.30E-01	8.16E-03	8.16E-04	1.4E-01	2.1E-02		8.00E-01	8.94E-03	8.94E-04	1.5E-01	2.3E-02	
	Phenanthrene	180	1.71E-01	1.23E+01	1.28E-01	2.19E-02	3.9E+00	6.0E-01		9.32E+00	9.72E-02	1.66E-02	3.0E+00	4.5E-01	
	Anthracene	178	4.43E-02	1.50E+00	1.58E-02	7.01E-04	1.2E-01	1.9E-02		2.48E+00	2.62E-02	1.16E-03	2.1E-01	3.1E-02	
	Benzoquinoline-1	179	1.00E-03 *	9.00E-01	9.44E-03	9.44E-06	1.7E-03	2.6E-04		9.00E-01	9.44E-03	9.44E-06	1.7E-03	2.5E-04	
	C1-Dibenzofurans	182	1.00E-03 *	8.00E-01	8.25E-03	8.25E-06	1.5E-03	2.3E-04		9.70E-01	1.00E-02	1.00E-05	1.8E-03	2.7E-04	
	Dibenzothiophene	184	1.00E-03 *	8.50E-01	8.68E-03	8.68E-06	1.6E-03	2.4E-04		8.30E-01	8.47E-03	8.47E-06	1.6E-03	2.3E-04	
	4H-Cyclopenta[def]phenanthrene	190	1.00E-03 *	1.70E+00	1.68E-02	1.68E-05	3.2E-03	4.9E-04		1.42E+00	1.40E-02	1.40E-05	2.7E-03	4.0E-04	
	C1-Phenanthrenes	192	1.00E-03 *	9.00E-01	8.80E-03	8.80E-06	1.7E-03	2.6E-04		8.30E-01	8.12E-03	8.12E-06	1.6E-03	2.3E-04	
	2-Methyl phenanthrene	192	1.00E-03 *	1.00E+00	9.78E-03	9.78E-06	1.9E-03	2.9E-04		9.10E-01	8.90E-03	8.90E-06	1.7E-03	2.6E-04	
	C1-Benzoquinolines	193	1.00E-03 *	4.90E-01	4.77E-03	4.77E-06	9.2E-04	1.4E-04		4.50E-01	4.38E-03	4.38E-06	8.5E-04	1.3E-04	
	Fluoranthene	202	4.12E-04	5.82E+00	5.41E-02	2.23E-05	4.5E-03	6.9E-04		5.43E+00	5.05E-02	2.08E-05	4.2E-03	6.3E-04	
	Pyrene	202	2.06E-04	3.10E+00	2.88E-02	5.94E-06	1.2E-03	1.8E-04		3.42E+00	3.18E-02	6.55E-06	1.3E-03	2.0E-04	
	C1-Fluoranthene/pyrenes	216	1.00E-04 *	1.06E+00	9.22E-03	9.22E-07	2.0E-04	3.0E-05		1.05E+00	9.13E-03	9.13E-07	2.0E-04	3.0E-05	
	1,2-Benzofluorene	216	1.00E-04 *	5.70E-01	4.96E-03	4.96E-07	1.1E-04	1.6E-05		6.80E-01	5.91E-03	5.91E-07	1.3E-04	1.9E-05	
	2,3-Benzofluorene	216	1.00E-04 *	9.20E-01	8.00E-03	8.00E-07	1.7E-04	2.6E-05		7.70E-01	6.69E-03	6.69E-07	1.4E-04	2.2E-05	
	Trihydrobenzoanthracenes	218	1.00E-04 *	1.79E+00	1.54E-02	1.54E-06	3.4E-04	5.1E-05		1.79E+00	1.54E-02	1.54E-06	3.4E-04	5.1E-05	
	CARCINOGENIC PAH'S														
c	Benzo(a)anthracene	228	1.89E-06	7.90E-01	6.51E-03	1.23E-08	2.8E-06	4.3E-07		1.32E+00	1.09E-02	2.05E-08	4.7E-06	7.1E-07	
c	Chrysene	228	5.19E-07	6.30E-01	5.19E-03	2.69E-09	6.1E-07	9.4E-08		8.10E-01	6.67E-03	3.46E-09	7.9E-07	1.2E-07	
c	Benzo(b)fluoranthene	252	4.12E-05	3.30E-01	2.46E-03	1.01E-07	2.6E-05	3.9E-06		5.30E-01	3.95E-03	1.63E-07	4.1E-05	6.2E-06	
c	Benzo(k)fluoranthene	252	4.20E-05	9.00E-02	6.71E-04	2.82E-08	7.1E-06	1.1E-06		2.30E-01	1.71E-03	7.20E-08	1.8E-05	2.7E-06	
c	Benzo(a)pyrene	252	4.61E-07	2.20E-01	1.64E-03	7.56E-10	1.9E-07	2.9E-08		4.20E-01	3.13E-03	1.44E-09	3.6E-07	5.5E-08	
c	Dibenz(a,h)anthracene	278	8.23E-09	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00		0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00	
c	Benzo(g,h,i)perylene	276	8.48E-09	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00		0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00	
c	Indeno(1,2,3-cd)pyrene	276	8.23E-09	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00		0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00	
	TOTALS:														
	TOTAL FOR VOLITILES			64.47	0.73	6.51	654.76	100.00	100.7	73.87	0.85	6.49	663.53	100.00	102.2
	TOTAL VOLITILES LESS WATER					4.41		59.33				3.96		51.44	
	WATER VAPOR					4.41		59.33				3.96		51.44	
	TOTAL FOR SEMI-VOLITILE PAH					0.00		0.00				0.00		0.00	
	TOTAL FOR CARCINOGENIC PAH					2.10		40.67				2.53		48.56	
	TOTAL HAP					1.45E-07		5.53E-06				2.60E-07		9.79E-06	
						5.08		73.71				4.87		69.66	

* Vapor pressure guestimated. c=carcinogenic PAH H=Hazardous Air Pollutant (HAP)

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,800,000	C. F.
Creosote Poles	1,000,000	C. F.
Total Creosote Wood	2,800,000	C. F.
Oil/Penta Poles	2,000,000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote (VOC)	0.015	lb/cf	Form R	21.00	4.79
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	4.62	1.05
Biphenol	0.16	% in vapor	Calculation	0.03	0.01
Cresols	0.46	% in vapor	Calculation	0.10	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.13	0.03
Naphthalene	17	% in vapor	Calculation	3.57	0.81
P-Xylenes	4.5	% in vapor	Calculation	0.95	0.22
Phenol	1.4	% in vapor	Calculation	0.29	0.07
Quinoline	1.5	% in vapor	Calculation	0.32	0.07
Toluene	26	% in vapor	Calculation	5.46	1.24
TOTAL CREO. HAP	73.63	% in vapor		15.46	3.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.03	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	10.00	2.28
TOTAL VOC				31.03	7.07

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	5.75	1.31
Naphthalene	3.34E-03	lb/cf	FR Test	1.670	0.381
Benzene	4.23E-06	lb/cf	FR Test	0.002	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.076	0.017
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	11.50	2.62
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.002	0.000
Totals					
VOC				21.08	4.81
Naphthalene				2.90	0.66
Benzene				0.004	0.001
Toluene				0.108	0.025
Pentachlorophenol				0.002	0.000
HAP Organics (Total)				3.02	0.69

Feather River Plant

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Attachment II
Source Testing Plan
Storage Yard Emissions

Emission factors (expressed in pounds of contaminant per hour per cubic foot of pole volume) will be established for storage yard emissions of volatile and semi-volatile organic compounds. These emissions are fugitive emissions from poles stored on racks after the poles have been treated with creosote or diluent (creosote diluted with fuel oil).

Poles are generally stored in the storage yard for a period of at least 30 days before being shipped to the customers. Greatest emissions are expected from freshly-treated poles, and emission rates are expected to decrease over time as the pole cools, the creosote soaks further into the wood, and the more volatile components are evaporated to the atmosphere. In addition to the age of the treatment, other variables that are expected to result in more minor effects on emissions include the following:

Treatment process: The diluent process uses a 30/70 mixture of creosote/fuel and, therefore, is expected to result in lower emissions of semi-volatiles, compared with the creosote process. Further, only 20 percent (approximately) of the creosote-treated poles are treated with diluent. (80% are treated with creosote.) Therefore, all testing will be performed with the creosote-treated poles (not with the diluent-treated poles).

Ambient temperature and solar radiation: Greater ambient temperatures and greater amounts of solar radiation are expected to result in somewhat greater emission rates of both volatile and semi-volatile compounds from freshly treated poles. Loss of available organics during these conditions, however, may result in the reduction of emissions from more aged poles.

Size of poles: Shorter, square railroad ties may exhibit greater emission factors (lbs per hour per cubic feet of wood) for freshly-treated wood than long (40-60 feet) poles. This is due to the ties' somewhat greater ratio of surface area to volume compared to that of the poles. Generally, the treated wood comprises 15% ties and 85% poles. Because the ties represent a minority of the treated wood products and because the ties are treated with 30/70 diluent, emissions from ties are not as significant as those from poles.

Koppers proposes to quantify emissions from the storage yard area with the use of source emission testing procedures. Representative poles will be stored in a temporary shed in order to contain and capture the emissions. Emissions captured by the shed will be removed with the use of a fan and ducting system connected to an end of the shed. Make-up air will be supplied at the opposite end of the shed. The source testing will be completed in the temporary ducting at the outlet of the fan.

At this time it is anticipated that the temporary shed will consist of a lumber frame and wrapped in sheets of clear polyethylene. (Clear polyethylene will allow that temperatures and solar radiation in the shed are accurately simulated.) The shed (approximately 3 ft. high x 6 ft. wide x 50 ft. long) will be sized to accommodate approximately four full size poles. To simulate a two-mile-per-hour wind, the shed will be ventilated at approximately 3000 cubic feet per minute. Ducting of approximately 15-inch diameter at the fan outlet will allow accurate measurement of exhaust gas flowrates (cubic feet per minute), and contaminant concentrations.

The program will establish emission factors for poles of various ages of treatment (time after pole removal from cylinder) by conducting the testing repetitively and plotting the emissions as a function of time. Integration of the resulting curve with the applicable time limits will provide an average emission factor. (Poles are usually removed from the cylinders at approximately 8 o'clock in the morning.) Emission factors will be measured as indicated below:

Condition	Number of test runs	Age during test	
		Days	Hours
A	3	0	2-10
B	3	1	26-34
C	3	3	74-82
D	1	6	144-152
E	1	12	290-298
F	1	30	362-370

Three individual test runs will be completed during Conditions A, B, and C, when greater emission rates are expected.

The test program will also include measurements during "background" conditions (no poles in the shed). In order to avoid contamination, the background test will be completed first, and the tests outlined above will be completed in reverse order.

The following information concerning the source testing plan is presented in response to items identified in the AB2588 Emission Inventory Criteria and Guidelines Regulation:

a. Date

Between May and October 1990. BCAPCD will be notified with at least 2 weeks advance notice of the scheduled test date.

b. Name of Testing Firm

Best Environmental, TMA Norcal, Pace Laboratories, or similar qualified firm.

c. Name of Contractor

McLaren Environmental Engineering will manage the test program.

d. Program Description:

See above.

e.and f. Process reactant composition and fuel firing rates

Poles and railroad ties are treated by the diluent and/or creosote operations on a daily basis. Typically wood products are placed in Cylinders #3 and #4 in the late morning, go through a 24-hour treatment cycle, and are removed from the cylinders at approximately 8 o'clock the following morning. Typically, wood products are removed from the cylinders 5 days per week (Tuesday through Saturday). Typically, each of the two cylinders contain 90 poles of approximately 45 feet, representing 2,000 cubic feet of wood. Lumber is usually stored in the yard for at least 30 days after treatment. Typically the yard contains the following mix of products:

Age after treatment	Cubic feet of wood products
0-7 days	20,000
7-14 days	20,000
14-21 days	15,000
21-28 days	10,000
28-35 days	10,000
35-60 days	5,000
>60 days	4,000
Total	84,000

g. Source Test and Analysis Methods

PAH: PAH emissions will be collected and analyzed according to CARB Method 429. This method includes sample collection according to CARB Method 5 followed by GC/MS analysis of PAH. Total PAHs will be reported as the sum of the eleven individual compounds identified in the Method 429 procedure.

Benzo(a)pyrene: Benzo(a)pyrene emissions will be collected and analyzed according to Carb Method 429.

Naphthalene: Naphthalene emissions will be collected and analyzed by CARB Method 429.

Cresols: Ortho-, meta-, and para-cresol emissions will be collected and analyzed by NIOSH Method 2001 with necessary modifications for measurement in stack exhaust gas.

Phenol: Phenol emissions will be collected and analyzed by NIOSH method 3502 with necessary modifications for measurement in stack gas.

Creosotes: Creosotes emissions will be quantified by summing the emissions of AB2588 PAHs.

Formaldehyde: Formaldehyde emissions will be collected and analyzed according to CARB Method 430.

Benzene: Benzene emissions will be collected and analyzed as outlined in CARB Method 410A.

Toluene: Toluene emissions will be collected and analyzed as outlined by CARB Method 410A with appropriate modifications.

h. Equipment Specifications and Drawings

Not applicable.

i. ARB Independent Tester Executive Order

Not applicable.

j. Operating ranges and typical values

The typical schedule of wood treatment, the typical mix of ties and poles, and the typical age of wood products stored in the storage yard are discussed above (items e and f).

k. Test Operating Conditions

Process operating values during the test will be typical of plant operation.

l. Stack Temperature

Stack temperature will be ambient temperature (60-100° F).

m. & n. Anticipated Concentration and Mass Emission Rate of Listed Substances

Using data in the EPA report and assuming that 1% of the poles are in the shed, and a 3000 cfm shed ventilation system, the following are calculated:

Substance	Concentration (mg/m**3)	Rate (lb/hr)
Naphthalene	2.1	2.4E-2
Acenaphthylene	0.0058	6.6E-5
Acenaphthene	1.3	1.5E-2

Fluorene	0.74	8.4E-3
Phenanthrene	0.48	5.4E-3
Fluoranthene	0.030	3.4E-4
Pyrene	0.012	1.4E-4
Benzo(b)fluoranthene	0.013	1.5E-4
Benzo(a)pyrene	0.057	6.6E-4
Benzene	0	0
Toluene	0	0
Phenol	0	0
Cresols	19.2	2.2E-1
Creosotes	19.2	2.2E-1

Greater concentrations and rates are expected during the testing of freshly-treated poles and lower concentrations and rates are expected during testing of more aged poles.

o. Composition and Rate of Waste Streams

Not applicable

p. Exhaust Gas Composition

The exhaust gas compositions from the shed is expected to be that of air.

q. Exhaust Gas Quantities

Approximate exhaust gas quantities expected from the shed exhaust are:

Gas velocity	= 2,400 FPM
Stack diameter	= 1.25 ft
Gas flow rate	= 3000 acfm

r. Sampling Points

Three individual sample runs will be completed for the measurement of each substance for Conditions A, B, and C. One sample run will be completed for the measurement of each substance for Conditions D, E, and F.

The number of points in the stack cross section will be determined based on measurement methods described in item g.

s. Calibration Data

Calibration data will be provided in the source test report. This data will include a certification of the accuracy of calibration gases that are traceable to the National Institute of Standards and Technology (NIST) (formerly the National Bureau of Standards).

t. QA/QC

Quality assurance and quality control data, including analysis audit, zero and span drift, and blank and spiked samples will be provided in the source test report. Blank samples will include field blanks, trip blanks, and a background test run.

u. Chain of Custody

The source test program will include a formal chain of custody program.

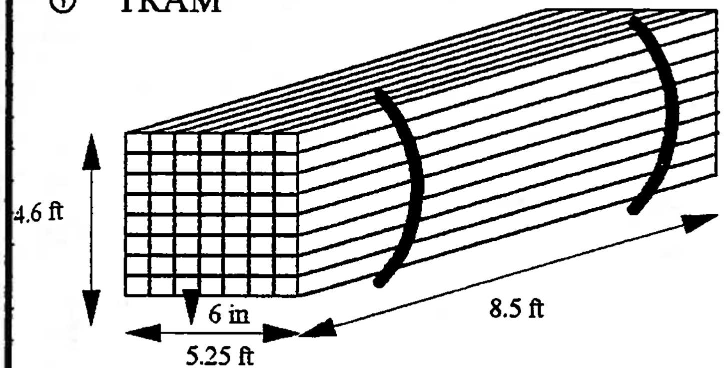
v. Applicable Emissions Standards

There are no directly-applicable emissions standards or other permit conditions affecting emissions of listed substances.

GEOMETRY OF TIE STACKS

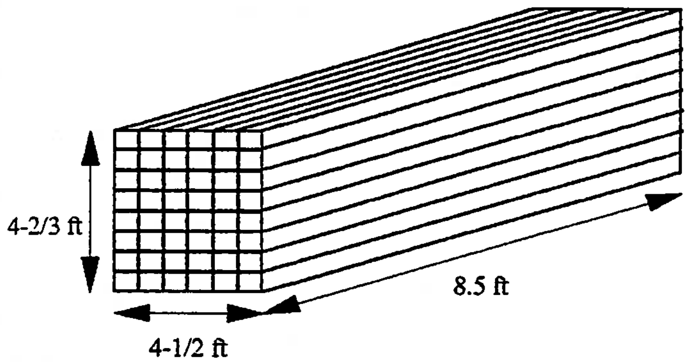
ONE TIE SURFACE AREA (7 in x 9 in x 8.5 ft) = 23.55 ft²

① TRAM



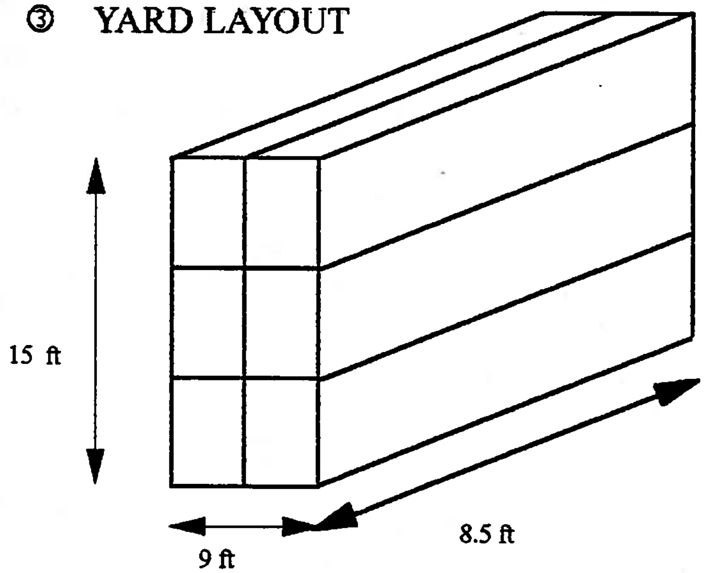
46 TIES PER TRAM
17 TRAMS PER CHARGE
TOTAL TRAM SURFACE AREA =
171 ft²

② BUNDLE



ASSUME 48 TIES = 1 BUNDLE
SURFACE AREA = 197.83 ft²

③ YARD LAYOUT



288 TIES IN 6 BUNDLES = 1 STACK
SURFACE AREA = 542.5 ft²

<u>SURFACE AREA OF 288 STACKED TIES</u> =
SURFACE AREA OF INDIVIDUAL TIES

$$\frac{542.5 \text{ ft}^2}{(23.55 \text{ ft}^2)(288)} = \frac{542.5 \text{ ft}^2}{6{,}782.4} = 0.08$$

STACKING RESULTS IN 92%
REDUCTION IN SURFACE AREA
FROM SINGLE TIES

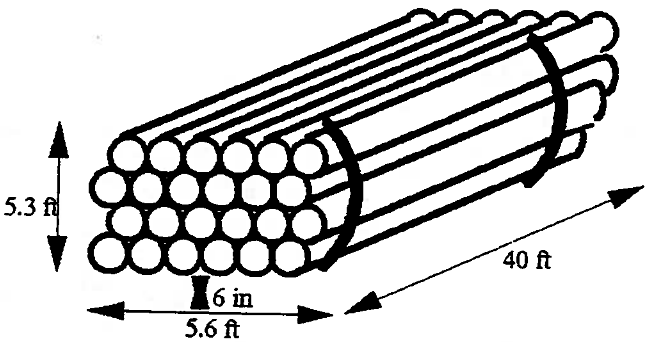
93,888 TIES PLACED IN 326 STACKS = 1 UNIT/MONTH PRODUCED
SURFACE AREA = SURFACE AREA OF ONE STACK * 326 STACKS
or
542.5 ft² * 326 STACKS = 176,855 ft²/UNIT

AquAeTer

GEOMETRY of POLE STACKS

① TRAM

116.5 SF per pole



24-28 POLES per TRAM
4-5 TRAMS per CHARGE
MAX EMISSION RATES ON TRAM

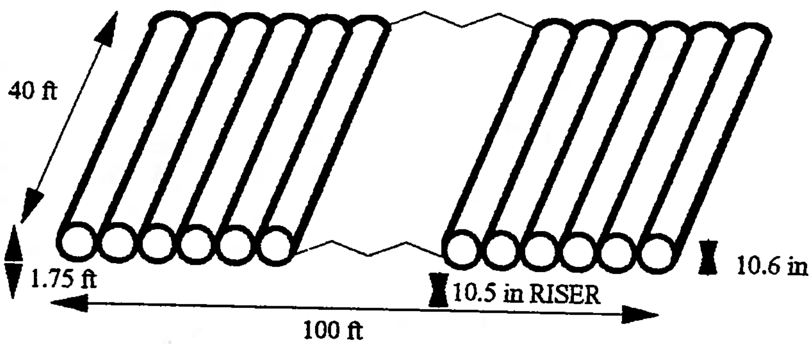
TIME ON TRAM	7-8 hours
TIME IN RAILTRUCK	16 hours

TOTAL TRAM SURFACE AREA =
709 ft^2/TRAM

$\frac{709}{25 \cdot 116.5} = .24$

76%

② 100 LAYOUT



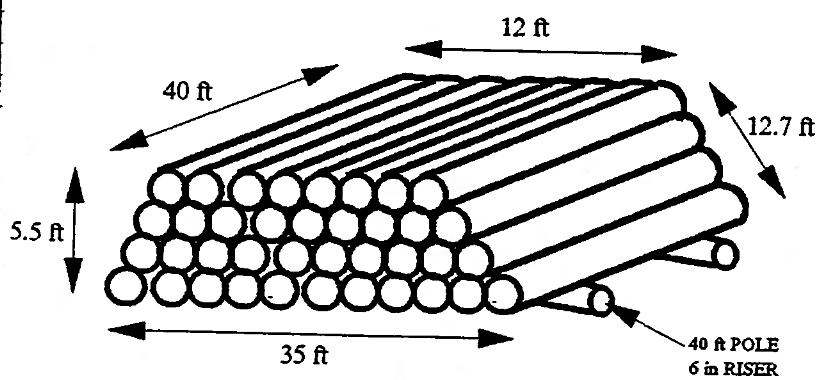
100 POLES - 100% ASSAY
1 LAYOUT AREA

TIME IN LAYOUT MAX 36 hours
SHIPPED OFF-SITE
LAYOUT SURFACE AREA =
4,496 ft^2/LAYOUT

$\frac{4496}{100 \times 116.5} = 0.39$

61%

③ YARD LAYOUT



80 POLES PER STACK
YARD AREA = 1,806 ft^2/STACK

$\frac{1806}{80 \times 116.5} = 0.19$ 81%

TIME IN YARD 3-4 months
MAXIMUM INVENTORY =
2,000 POLES

AquAeTer

cr-tie-s.wk4

CREOSOTE WOOD TREATING PLANT EMISSIONS
FROM TREATED INVENTORY
BASED ON FEATHER RIVER PLANT
EMISSIONS STUDY RESULTS

Test No.	CF in test	Hours	On-Site	Stack Fac.
Fresh 2	163.8	24	100.00%	16.00%
Day 1(3)	163.8	72	40.00%	18.00%
Day 7	163.8	72	20.00%	8.00%
Day 12	183.8	240	20.00%	8.00%
Day 30	163.8	360	10.00%	8.00%

Volume of creosote wood treated(cf): 1,000,000 (cf/year)

Creosote density (Kg/l) 1.07
Whole creosote MW is 187.8

	Constituent	MW	Pure Component Vapor Press. at 180 F (mm Hg)	Liquid Conc. in Creosote (%)	Liquid Mole Fraction (moles)	Equilib. Vapor Concen. Pressure (mm Hg)	Feather River Emission Rates: Measured Fresh 2 (mg/hr)	Calc'd Fresh 2 (mg/hr)	Volume Normal Fresh 2 (mg/hr/cf)	Measured Day 1(3) (mg/hr)	Calc'd Day 1(3) (mg/hr)	Volume Normal Day 1(3) (mg/hr/cf)	Measured Day 7 (mg/hr)	Calc'd Day 7 (mg/hr)	Volume Normal Day 7 (mg/hr/cf)
	NON-CARCINOGENIC PAH'S														
	Napthalene	128	7.29E+00	6.90E+00	1.012E-01	7.38E-01	2.00E+04		1.22E+02	2.80E+03		1.71E+01	2.13E+03		1.30E+01
	Methyl naphthalenes	142	4.00E+00	5.40E+00	7.142E-02	2.86E-01	2.00E+04		1.22E+02	3.40E+03		2.08E+01	4.93E+03		3.01E+01
	Acenaphthylene	152	1.09E+00	5.00E-01	6.178E-03	6.73E-03	3.20E+02		1.95E+00	6.21E+01		3.79E-01	7.73E+01		4.72E-01
	Acenaphthene	154	5.27E-02	6.10E+00	7.439E-02	3.92E-03	9.41E+03		5.74E+01	1.60E+03		9.78E+00	1.87E+03		1.14E+01
	Fluorene	166	5.04E-01	4.60E+00	5.204E-02	2.62E-02	4.45E+03		2.72E+01	1.09E+03		6.63E+00	1.16E+03		7.08E+00
	Phenanthrene	180	1.71E-01	1.30E+01	1.356E-01	2.32E-02	4.17E+03		2.54E+01	1.68E+03		1.03E+01	1.32E+03		8.06E+00
	Anthracene	178	4.43E-02	1.70E+00	1.794E-02	7.95E-04	8.84E+01		5.40E-01	1.44E+02		8.80E-01	3.48E+01		2.12E-01
	Fluoranthene	202	4.12E-04	7.20E+00	6.694E-02	2.76E-05	2.14E+02		1.31E+00	1.14E+02		6.97E-01	8.13E+01		4.96E-01
	Pyrene	202	2.06E-04	4.70E+00	4.370E-02	9.00E-06	3.86E+01		2.35E-01	3.05E+01		1.86E-01	2.45E+01		1.50E-01
		Total:		5.01E+01	5.69E-01			Total:	3.58E+02		Total:	6.67E+01		Total:	7.10E+01
	CARCINOGENIC PAH'S														
c	Benzo(a)anthracene	228	1.89E-06	9.00E-01	7.413E-03	1.40E-08		6.00E-02	3.66E-04		4.75E-02	2.90E-04		3.81E-02	2.33E-04
c	Chrysene	228	5.19E-07	1.00E+00	8.237E-03	4.27E-09		1.83E-02	1.12E-04		1.45E-02	8.85E-05		1.16E-02	7.10E-05
c	Benzo(b)fluoranthene	252	4.12E-05	2.60E+00	1.938E-02	7.98E-07		3.42E+00	2.09E-02		2.71E+00	1.65E-02		2.17E+00	1.33E-02
c	Benzo(k)fluoranthene	252	4.20E-05	3.40E+00	2.534E-02	1.06E-06		4.56E+00	2.78E-02		3.61E+00	2.20E-02		2.90E+00	1.77E-02
c	Benzo(a)pyrene	252	4.61E-07	1.50E+00	1.118E-02	5.15E-09		2.21E-02	1.35E-04		1.75E-02	1.07E-04		1.40E-02	8.56E-05
c	Dibenz(a,h)anthracene	278	8.23E-09	1.40E+00	9.458E-03	7.78E-11		3.33E-04	2.04E-06		2.64E-04	1.61E-06		2.12E-04	1.29E-06
c	Benzo(g,h,i)perylene	276	8.48E-09	3.80E+00	2.586E-02	2.19E-10		9.39E-04	5.73E-06		7.43E-04	4.54E-06		5.97E-04	3.64E-06
c	Indeno(1,2,3-cd)pyrene	276	8.23E-09	4.00E-01	2.722E-03	2.24E-11		9.59E-05	5.86E-07		7.59E-05	4.64E-07		6.10E-05	3.72E-07
		Total:		1.50E+01	1.10E-01			Total:	4.93E-02		Total:	3.90E-02		Total:	3.13E-02
	OTHER CONSTITUENTS														
	Carbazole (anthracene)	167	4.00E-02	4.00E-02	4.498E-04	1.80E-05		2.00E+00	1.22E-02		3.27E+00	1.99E-02		7.88E-01	4.81E-03
	Benzene	78	7.60E+02	4.00E-01	9.631E-03	7.32E+00	26.02		1.59E-01	3.65		2.23E-02	2.78		1.70E-02
	Toluene	92	3.25E+02		0.000E+00	0.00E+00	180		1.10E+00	130		7.94E-01	120		7.33E-01
	Formaldehyde						569		3.47E+00	1218		7.44E+00	550		3.36E+00
							Total except. Formald..:		359.25			67.59			71.78

c Indicates carcinogenic PAH

	Constituent	Feather River Emission Rates: Measured Day 12 (mg/hr)	Calc'd Day 12 (mg/hr)	Volume Normal Day 12 (mg/hr/cf)	Measured Day 30 (mg/hr)	Calc'd Day 30 (mg/hr)	Volume Normal Day 30 (mg/hr/cf)	Emissions from Treated Wood (mg/cf)	Emissions from Treated Wood (lb/cf)	Annual Emissions from Inventory (ton/yr)	
	NON-CARCINOGENIC PAH'S										
	Napthalene	1.61E+03		8.76E+00	9.63E+02		5.88E+00	6.22E+02	1.37E-03	0.68	Naphthalene
	Methyl naphthalenes	1.34E+03		7.30E+00	8.39E+02		5.12E+00	6.39E+02	1.41E-03	0.70	
	Acenaphthylene	2.95E+01		1.61E-01	1.65E+01		1.01E-01	1.06E+01	2.34E-05	0.01	
	Acenaphthene	6.71E+02		3.65E+00	4.54E+02		2.77E+00	2.98E+02	6.57E-04	0.33	
	Fluorene	3.64E+02		1.98E+00	2.51E+02		1.53E+00	1.54E+02	3.40E-04	0.17	
	Phenanthrene	5.26E+02		2.86E+00	3.30E+02		2.01E+00	1.71E+02	3.77E-04	0.19	
	Anthracene	1.48E+01		8.05E-02	1.51E+01		9.22E-02	7.19E+00	1.58E-05	0.01	
	Fluoranthene	3.09E+01		1.68E-01	9.35E+00		5.71E-02	9.85E+00	2.17E-05	0.01	
	Pyrene	2.15E+00		1.17E-02	3.03E+00		1.85E-02	2.09E+00	4.59E-06	0.00	
			Total:	2.50E+01		Total:	1.76E+01	1.90E+03	4.21E-03	2.11	
	CARCINOGENIC PAH'S										
c	Benzo(a)anthracene		3.35E-03	1.82E-05		4.72E-03	2.88E-05	3.25E-03	7.15E-09	0.00	
c	Chrysene		1.02E-03	5.56E-06		1.44E-03	8.79E-06	9.91E-04	2.18E-09	0.00	
c	Benzo(b)fluoranthene		1.91E-01	1.04E-03		2.69E-01	1.64E-03	1.85E-01	4.07E-07	0.00	
c	Benzo(k)fluoranthene		2.54E-01	1.38E-03		3.58E-01	2.19E-03	2.47E-01	5.43E-07	0.00	
c	Benzo(a)pyrene		1.23E-03	6.70E-06		1.73E-03	1.06E-05	1.19E-03	2.63E-09	0.00	
c	Dibenz(a,h)anthracene		1.86E-05	1.01E-07		2.62E-05	1.60E-07	1.80E-05	3.97E-11	0.00	
c	Benzo(g,h,i)perylene		5.24E-05	2.85E-07		7.38E-05	4.51E-07	5.16E-05	1.14E-10	0.00	
c	Indeno(1,2,3-cd)pyrene		5.35E-06	2.91E-08		7.54E-06	4.60E-08	5.22E-06	1.15E-11	0.00	
			Total:	2.45E-03		Total:	3.88E-03	4.37E-01	9.62E-07	4.81E-04	
	OTHER CONSTITUENTS										
	Carbazole (anthracene)		3.35E-01	1.82E-03		3.42E-01	1.86E-03	1.64E-01	3.61E-07	0.00	
	Benzene	2.1		1.14E-02	1.2		6.53E-03	7.89E-01	1.74E-06	0.00	Benzene
	Toluene	330		1.80E+00	190		1.03E+00	1.61E+01	3.54E-05	0.02	Toluene
	Formaldehyde	187		1.02E+00	0		0.00E+00	5.97E+01	1.31E-04	0.07	
		Total except. Formald..:		24.99			18.63	1.92E+03	4.25E-03	2.13	Creosote

cr-pol-s.wk4

CREOSOTE WOOD TREATING PLANT EMISSIONS
FROM TREATED INVENTORY
BASED ON FEATHER RIVER PLANT
EMISSIONS STUDY RESULTS

Test No.	CF in test	Hours	On-Site	Stack Fac.
Fresh 2	163.8	24	100.00%	24.00%
Day 1(3)	163.8	72	100.00%	39.00%
Day 7	163.8	72	75.00%	19.00%
Day 12	183.8	240	40.00%	19.00%
Day 30	163.8	360	10.00%	19.00%

Volume of creosote wood treated(cf): 1,000,000 (cf/year)

Creosote density (Kg/l) 1.07
Whole creosote MW is 187.8

	Constituent	MW	Pure Component Vapor Press. at 180 F (mm Hg)	Liquid Conc. in Creosote (%)	Liquid Mole Fraction (moles)	Equilib. Vapor Concen. Pressure (mm Hg)	Measured Fresh 2 (mg/hr)	Calc'd Fresh 2 (mg/hr)	Volume Normal Fresh 2 (mg/hr/cf)	Measured Day 1(3) (mg/hr)	Calc'd Day 1(3) (mg/hr)	Volume Normal Day 1(3) (mg/hr/cf)	Measured Day 7 (mg/hr)	Calc'd Day 7 (mg/hr)	Volume Normal Day 7 (mg/hr/cf)
	NON-CARCINOGENIC PAH'S														
	Napthalene	128	7.29E+00	6.90E+00	1.012E-01	7.38E-01	2.00E+04		1.22E+02	2.80E+03		1.71E+01	2.13E+03		1.30E+01
	Methyl naphthalenes	142	4.00E+00	5.40E+00	7.142E-02	2.86E-01	2.00E+04		1.22E+02	3.40E+03		2.08E+01	4.93E+03		3.01E+01
	Acenaphthylene	152	1.09E+00	5.00E-01	6.178E-03	6.73E-03	3.20E+02		1.95E+00	6.21E+01		3.79E-01	7.73E+01		4.72E-01
	Acenaphthene	154	5.27E-02	6.10E+00	7.439E-02	3.92E-03	9.41E+03		5.74E+01	1.60E+03		9.78E+00	1.87E+03		1.14E+01
	Fluorene	166	5.04E-01	4.60E+00	5.204E-02	2.62E-02	4.45E+03		2.72E+01	1.09E+03		6.63E+00	1.16E+03		7.08E+00
	Phenanthrene	180	1.71E-01	1.30E+01	1.356E-01	2.32E-02	4.17E+03		2.54E+01	1.68E+03		1.03E+01	1.32E+03		8.06E+00
	Anthracene	178	4.43E-02	1.70E+00	1.794E-02	7.95E-04	8.84E+01		5.40E-01	1.44E+02		8.80E-01	3.48E+01		2.12E-01
	Fluoranthene	202	4.12E-04	7.20E+00	6.694E-02	2.76E-05	2.14E+02		1.31E+00	1.14E+02		6.97E-01	8.13E+01		4.96E-01
	Pyrene	202	2.06E-04	4.70E+00	4.370E-02	9.00E-06	3.86E+01		2.35E-01	3.05E+01		1.86E-01	2.45E+01		1.50E-01
	Total:			5.01E+01	5.69E-01			Total:	3.58E+02		Total:	6.67E+01		Total:	7.10E+01
	CARCINOGENIC PAH'S														
c	Benzo(a)anthracene	228	1.89E-06	9.00E-01	7.413E-03	1.40E-08		6.00E-02	3.66E-04		4.75E-02	2.90E-04		3.81E-02	2.33E-04
c	Chrysene	228	5.19E-07	1.00E+00	8.237E-03	4.27E-09		1.83E-02	1.12E-04		1.45E-02	8.85E-05		1.16E-02	7.10E-05
c	Benzo(b)fluoranthene	252	4.12E-05	2.60E+00	1.938E-02	7.98E-07		3.42E+00	2.09E-02		2.71E+00	1.65E-02		2.17E+00	1.33E-02
c	Benzo(k)fluoranthene	252	4.20E-05	3.40E+00	2.534E-02	1.06E-06		4.56E+00	2.78E-02		3.61E+00	2.20E-02		2.90E+00	1.77E-02
c	Benzo(a)pyrene	252	4.61E-07	1.50E+00	1.118E-02	5.15E-09		2.21E-02	1.35E-04		1.75E-02	1.07E-04		1.40E-02	8.56E-05
c	Dibenz(a,h)anthracene	278	8.23E-09	1.40E+00	9.458E-03	7.78E-11		3.33E-04	2.04E-06		2.64E-04	1.61E-06		2.12E-04	1.29E-06
c	Benzo(g,h,i)perylene	276	8.48E-09	3.80E+00	2.586E-02	2.19E-10		9.39E-04	5.73E-06		7.43E-04	4.54E-06		5.97E-04	3.64E-06
c	Indeno(1,2,3-cd)pyrene	276	8.23E-09	4.00E-01	2.722E-03	2.24E-11		9.59E-05	5.86E-07		7.59E-05	4.64E-07		6.10E-05	3.72E-07
	Total:			1.50E+01	1.10E-01			Total:	4.93E-02		Total:	3.90E-02		Total:	3.13E-02
	OTHER CONSTITUENTS														
	Carbazole (anthracene)	167	4.00E-02	4.00E-02	4.498E-04	1.80E-05		2.00E+00	1.22E-02		3.27E+00	1.99E-02		7.88E-01	4.81E-03
	Benzene	78	7.60E+02	4.00E-01	9.631E-03	7.32E+00	26.02		1.59E-01	3.65		2.23E-02	2.78		1.70E-02
	Toluene	92	3.25E+02		0.000E+00	0.00E+00	180		1.10E+00	130		7.94E-01	120		7.33E-01
	Formaldehyde						569		3.47E+00	1218		7.44E+00	550		3.36E+00
							Total except. Formald..:		359.25			67.59			71.78

c Indicates carcinogenic PAH

	Constituent	Measured Day 12 (mg/hr)	Calc'd Day 12 (mg/hr)	Volume Normal Day 12 (mg/hr/cf)	Measured Day 30 (mg/hr)	Calc'd Day 30 (mg/hr)	Volume Normal Day 30 (mg/hr/cf)	Emissions from Treated Wood (mg/cf)	Emissions from Treated Wood (lb/cf)	Annual Emissions from Inventory (ton/yr)
	NON-CARCINOGENIC PAH'S									
	Napthalene	1.61E+03		8.76E+00	9.63E+02		5.88E+00	1.52E+03	3.34E-03	1.67
	Methyl naphthalenes	1.34E+03		7.30E+00	8.39E+02		5.12E+00	1.73E+03	3.80E-03	1.90
	Acenaphthylene	2.95E+01		1.61E-01	1.65E+01		1.01E-01	2.97E+01	6.53E-05	0.03
	Acenaphthene	6.71E+02		3.65E+00	4.54E+02		2.77E+00	7.89E+02	1.74E-03	0.87
	Fluorene	3.64E+02		1.98E+00	2.51E+02		1.53E+00	4.51E+02	9.93E-04	0.50
	Phenanthrene	5.26E+02		2.86E+00	3.30E+02		2.01E+00	5.70E+02	1.25E-03	0.63
	Anthracene	1.48E+01		8.05E-02	1.51E+01		9.22E-02	3.15E+01	6.92E-05	0.03
	Fluoranthene	3.09E+01		1.68E-01	9.35E+00		5.71E-02	3.52E+01	7.75E-05	0.04
	Pyrene	2.15E+00		1.17E-02	3.03E+00		1.85E-02	8.33E+00	1.83E-05	0.01
			Total:	2.50E+01		Total:	1.76E+01	5.12E+03	1.14E-02	5.68
	CARCINOGENIC PAH'S									
c	Benzo(a)anthracene		3.35E-03	1.82E-05		4.72E-03	2.88E-05	1.30E-02	2.85E-08	0.00
c	Chrysene		1.02E-03	5.56E-06		1.44E-03	8.79E-06	3.96E-03	8.71E-09	0.00
c	Benzo(b)fluoranthene		1.91E-01	1.04E-03		2.69E-01	1.64E-03	7.39E-01	1.63E-06	0.00
c	Benzo(k)fluoranthene		2.54E-01	1.38E-03		3.58E-01	2.19E-03	9.85E-01	2.17E-06	0.00
c	Benzo(a)pyrene		1.23E-03	6.70E-06		1.73E-03	1.06E-05	4.77E-03	1.05E-08	0.00
c	Dibenz(a,h)anthracene		1.86E-05	1.01E-07		2.62E-05	1.60E-07	7.21E-05	1.59E-10	0.00
c	Benzo(g,h,i)perylene		5.24E-05	2.85E-07		7.38E-05	4.51E-07	2.04E-04	4.48E-10	0.00
c	Indeno(1,2,3-cd)pyrene		5.35E-06	2.91E-08		7.54E-06	4.60E-08	2.08E-05	4.57E-11	0.00
			Total:	2.45E-03		Total:	3.88E-03	1.75E+00	3.84E-06	1.92E-03
	OTHER CONSTITUENTS									
	Carbazole (anthracene)		3.35E-01	1.82E-03		3.42E-01	1.86E-03	7.14E-01	1.57E-06	0.00
	Benzene	2.1		1.14E-02	1.2		6.53E-03	1.92E+00	4.23E-06	0.00
	Toluene	330		1.80E+00	190		1.03E+00	6.89E+01	1.52E-04	0.08
	Formaldehyde	187		1.02E+00	0		0.00E+00	2.82E+02	6.20E-04	0.31
		Total except. Formald..:		24.99			18.63	5.19E+03	1.15E-02	5.76

DATE	TICKET#	GALLONS	SULFER WT%
7-5-95	WG11828	7426	0.25
7-6-95	WG11830	7426	0.25
7-11-95	WG11845	7427	0.25
7-12-95	WG11850	7425	0.25
7-18-95	WG11578	7409	0.31
7-21-95	WG11587	7406	0.31
7-25-95	WG11615	7428	0.31
7-25-95	WG11620	7412	0.31
7-26-95	WG11622	7410	0.24
8-1-95	WG11643	7412	0.24
8-11-95	WG11472	7410	0.24
8-16-95	WG11491	7406	0.24
8-19-95	WG11493	7405	0.24
8-17-95	WG11499	7403	0.24
8-18-95	WG11502	7397	0.28
8-22-95	WG11512	7404	0.28
8-24-95	WG11515	7415	0.28
8-28-95	WG11527	7402	0.28
8-31-95	WG11531	7435	0.28
9-5-95	WG11852	7412	0.28
9-20-95	WG11894	7430	0.28
9-25-95	WG11917	7499	0.28
9-29-95	WG11924	7442	0.32

TOTAL GALLONS 170641
AVG SULFUR WT% 0.271304

BOILER FUEL THIRD QUARTER 1995 = 20,162 GALS.

Mr. David Burchfield, Ms DEQ

October 2, 1995

APPLICATION UPDATE INSTRUCTIONS

DESCRIPTION OF ITEM	UPDATE ACTION REQUIRED
Summary of Emission Points	Replace previous version
Application Addendum for a Synthetic Minor Operating Permit, Page 2 of 2	Replace previous version
Section C, form	Replace previous version
Section D, Source 33, Space Heaters	Add to application
Section E, Source 31, Pole Kiln	Replace previous version
Section E, Source 32, Pole Peeler	Add to application
Section E, Source 34, Wood Fuel Preparation and Handling	Add to application
Emission Inventory Scenarios and Calculations Spreadsheets	Replace previous version
Emission Inventory Calculation Explanations	Add to application
Flow Diagrams	Replace previous version
Site Plan, Figure 1	Replace previous version
Site Plan, Figure 2	Add to application
Table 3.1, Tank Listings	Replace previous version
Tank Summary Table (Section H)	Replace previous version
Material Safety Data Sheet for Dearfloc 4301	Add to application

KOPPERS INDUSTRIES, INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Tanks in Source	Reported in Section	Control	Emis. Included With No.
01	Wood Fired Boiler		D	Multi-clone	
02	Creosote Tank Car Unloading		E		05
03	Creosote Storage Tank	12, 15	H		05
04	Creosote Work Tanks (4)	7, 8, 9, 11	H		05
05	Creosote Treating Cylinders (3)	1, 2, 4	E		
06	Creosote Blowdown Tank	20	H		05
07	Creosote Vacuum Pumps		E		05
08	Creosote Treated Wood Storage		E		
09	Creosote Fugitives from pumps, valves, flanges, and sumps		E		05
10	PCP Truck Unloading		Negligible		
11	PCP Concentrate Storage	34	H		05
12	PCP Mix Tank	32, 33	Not Used		
13	PCP Work Tanks (2)	6, *	H		05
14	PCP Treating Cylinders (2)	5, *	E		05
15	PCP Blowdown Tank	23	E		05
16	PCP Vacuum Pump		E		05
17	PCP Treated Wood Storage		E		08
18	PCP Process Fugitives from pumps, valves, flanges, sumps		E		05

Source No.	Source Name	Tanks in Source	Reported in Section	Control	Emis. Included With No.
19	Storm Water Tank	17	H		05
20	Waste Water Surge Tank	16	H		05
21	API Separator		E		05
22	Primary PCP Oil/Water Separator	30	E		05
23	Second PCP Oil/Water Separator	31	E		05
24	Reclaim Oil Dehydrators	19	H		05
25	Waste Water Biologial Trmt.	26, 27, 28	Negligible		
26	Oil Fired Boiler (Backup)		D		
27	Tie Mill		E	Cyclone	
28	Fugitive Road Dust		E		
29	#2 Oil Storage Tank	14	H		05
30	Decant Tanks	10	H		05
31	Pole Kiln		E		
32	Pole Peeler		E		
33	Space Heaters		D		
34	Wood Fuel Preparation & Handling		E		

* Tank assumed for emission estimate.

The following tanks are not included as part of any source for the reason stated:

18, Coagulant - Insignificant source
21 & 22, Compressed Air, No emission
24, Gasoline storage for plant vehicles - Insignificant source
25, Diesel storage for plant vehicles - Insignificant source
29, Dehydrator - Not in use, no emission.

List the limitations/restrictions you are proposing to make your facility a synthetic minor source and the proposed methods of demonstrating compliance with those limitations/restrictions. If necessary, use a separate page for each Emission Point.

Source 26 - Oil Fired Boiler

Oil Fired Boiler will not be operated at the same time as Source 01, Wood Fired Boiler, but will only operate to provide process steam when the other boiler is shut down for maintenance, repair, or modifications. This will limit sulfur dioxide emissions to less than major threshold.

Source 31 - Pole Kiln

Pole Kiln will only be used to dry up to 1,400,000 cubic feet of wood in any year to limit VOC emissions from this source to no more than 35 tons. Plant operating records will be maintained to show the cumulative amount of wood dried each calendar year.

Sources 05 and 08 - Wood Preserving Processes and Preservative Treated Wood Storage Fugitives (Includes multiple individual sources as indicated on Summary of Emission Points table.

The treating volumes indicated on the attached table Emissions Inventory Scenarios on lines 7, 8, and 9 will not exceed any of the "Synthetic Maximum" scenarios listed. The "Synthetic Maximum Mixed" scenario represents highest allowed volumes under current market conditions. The "High Creo" represents conditions if all production was shifted to creosote treatment and no pentachlorophenol treatment continued. The "High Penta" scenario represents conditions if the market demand for pentachlorophenol products was very high with most treating capacity being shifted to those products. Each calendar year, Koppers will commit to one scenario and cumulative records of treatment volume will be maintained to demonstrate compliance. The "Mixed" scenario will be default if no other one is declared. These limitations will assure that naphthalene emissions will not exceed 10 tons, that total hazardous air pollutants will not exceed 25 tons, and that total VOC emissions will not exceed 100 tons.

Source 34 - Wood Fuel Grinder Diesel Engine

If a diesel engine is used to operate the wood fuel grinder, the annual hours of operation will be limited to 2,400 which will limit annual VOC emissions to 12.8 tons and assure that plant annual VOC emissions do not exceed 100 tons. An operating log will be maintained to show the cumulative hours of operation for each calendar year.

Randall D. Collins [signature] Date: September 29, 1995

SECTION C

For the sections listed below indicate the number that have been completed for each section as part of this application.

Section B 1

Section C 1

Section D 3

Section E 6

Section F ____

Section G ____

Section H 1

Section I ____

Section J ____

Section K ____

Section L1 ____

Section L2 2

Section L3 ____

Section L4 ____

Section L5 ____

Section L6 ____

Section L7 ____

Section M1 ____

Section M2 ____

Section M3 ____

Section M4 ____

Section M5 ____

Section M6 ____

Section M7 ____

Section M8 ____

Section N ____

Section O ____

As a minimum, sections B, C, M, N and O must be completed for the application to be considered complete.

Please list below all insignificant activities required by APC-S-6, Section VII.B that apply to your facility.

- Natural gas fired space heaters.

- Gasoline & diesel fuel tanks used to store fuel for yard equipment. Constructed approx. 1980.

  Tank 25 Diesel #2 - 20,000 gal

  Tank 26 Gasoline - 1,000 gal.

9/29/95

FUEL BURNING EQUIPMENT (page 1 of 2) SECTION D

1. Emission Point No. / Name: 33 - Natural Gas Space Heaters

2. Equipment Description: Space heaters used in plant buildings, gas fired.

3. Was this unit constructed or modified after August 7, 1977? ______ Yes __X__ No
If yes please give date and explain. ______

4. Rated Capacity: 0.3 MMBTU/hr 5. Type of burner: Gas

6. Usage Type (i.e. Space Heat, Process, etc.) : Space Heat

7. Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

FUEL TYPE	HEAT CONTENT	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	ACTUAL YEARLY USAGE
Natural Gas	1000 BTU/CF	—	—	300 CF/hr	605 MCF

8. Please list any fuel components that are hazardous air pollutants and the percentage in the fuel.
None

9. Operating Schedule: 24 hours/day 7 days/week 12 weeks/year

10. Stack Data: N.A.
A. Height: ______
B. Inside diameter: ______
C. Exit gas velocity: ______
D. Exit gas temperature: ______

11. UTM Coordinates:
A. Zone ______ B. North ______ C. East ______

9/29/95

FUEL BURNING EQUIPMENT (page 2 of 2)

SECTION D

12. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no*	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
33	No significant emissions.								
	All less than 0.0 Tons/YR								

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section I. or manufacturers specifications if other

9/29/95

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 31 Pole Kiln

2. Process Description: Dry wood poles prior to preservative treatment.

3. Was this unit constructed or modified after August 7, 1977? ____ yes X no
If yes please give date and explain. ____

4. Rated Capacity (~~tons/hr~~): ~ 13,000 CF / Charge

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Green wood poles			1,400,000 CF

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Dry wood poles			1,400,000 CF

7. Stack Data: NA
A. Height: ____
B. Inside diameter: ____
C. Exit gas velocity: ____
D. Exit gas temperature: ____

8. UTM Coordinates:
A. Zone ____ B. North ____ C. East ____

9/29/95

MANUFACTURING PROCESSES (page 2 of 2)

SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
31	VOC	N		N.A.	9.0	14.0	N.A.	9.0	35.0

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other

9/29/95

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 32 Pole Peeler

2. Process Description: Cut bark off of and shape poles to produce "white" pole from "barky" pole.

3. Was this unit constructed or modified after August 7, 1977? ____ yes X no
If yes please give date and explain. ____

4. Rated Capacity (tons/hr): 9.9

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Barky Poles	22 pcs	22 pcs	20,000 pcs

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
White Pole	22 pcs	22 pcs	20,000 pcs
Bark & Wood chips	5.5 TN/hr	5.5 TN/hr	5000 TN

7. Stack Data: No Stack
A. Height: ____
B. Inside diameter: ____
C. Exit gas velocity: ____
D. Exit gas temperature: ____

8. UTM Coordinates:
A. Zone ____ B. North ____ C. East ____

9/29/95

MANUFACTURING PROCESSES (page 2 of 2) SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
32	Particulate-Fugitive	No		N.A.	3.5	2.4	N.A.	3.5	2.4

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other

9/29/95

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 34 Wood Fuel Preparation & Handling

2. Process Description: Preparation of wood fuel for boiler including grinding and handling including loading into silo and on conveyors. Includes exhaust from grinder diesel engine.

3. Was this unit constructed or modified after August 7, 1977? X yes ____ no
If yes please give date and explain. Grinder and one new silo to be installed in 1996.

4. Rated Capacity (tons/hr): 12

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Used ties, poles,	8 TN	12 TN	37 580 TN
and sawdust			

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Wood chips and	8 TN	12 TN	37 580 TN
sawdust			

7. Stack Data: NA.
   A. Height: ____
   B. Inside diameter: ____
   C. Exit gas velocity: ____
   D. Exit gas temperature: ____

8. UTM Coordinates:
   A. Zone ____
   B. North ____
   C. East ____

9/29/95

MANUFACTURING PROCESSES (page 2 of 2) SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
34	Particulate - Fugitive	No		N.A	3.0	4.37	N.A.	3.0	4.37
34	Diesel Exhaust from Grinder Engine.								
	Particulate	No		N.A.	0.36	0.43		0.36	0.43
	SO_2				0.30	0.35		0.30	0.35
	NOX				5.70	6.84		5.70	6.84
	VOC				10.65	12.78		10.65	12.78

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other

9/29/95

EMISSIONS INVENTORY SCENARIOS
KOPPERS INDUSTRIES, INC. - GRENADA, MS

	VARIABLE	SCENARIOS				
		EST. ACTUAL	MAXIMUM POTENTIAL	SYNTHETIC MAXIMUM (HIGH CREO)	SYNTHETIC MAXIMUM (HIGH PENTA)	SYNTHETIC MAXIMUM (MIXED)
1	Wood Burned (tn/yr)	30269	37580	37580	37580	37580
2	Wood Fuel Sulfur (%)	0.05	0.11	0.11	0.11	0.11
3						
4	Fuel Oil Burned (MGal/yr)	35	2190	500	500	500
5	Fuel Oil Sulfur (%)	0.5	0.5	0.5	0.5	0.5
6						
7	Creo Treated Ties (cf)	1,801,432	2,000,000	2,000,000	1,500,000	1,800,000
8	Creo Treated Poles (cf)	149,476	1,500,000	1,500,000	500,000	1,000,000
9	Penta Treated Wood (cf)	838,672	2,000,000	0	3,000,000	2,000,000
10	Kiln Dried Poles(cf)	542,773	1,600,000	1,400,000	1,400,000	1,400,000
11	Cyclone (Days/Yr)	50	300	300	200	200
12	Treating Volume Factor	1	1.5	1.5	1.5	1.5
13	Poles Peeled (cf)	400,000	600,000			600,000
14	Diesel Fire Pump (hr)	0	0	0	0	0
15	Diesel Grinder (hr)	2,000	8,270			2,400

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSIONS (MIXED)

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37,580

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 500

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.41
SO2	71	lb/MGal	AP-42	17.75	14.48
NOX	20	lb/MGal	AP-42	5.00	4.08
CO	5	lb/MGal	AP-42	1.25	1.02
VOC	0.2	lb/MGal	AP-42	0.05	0.04

Number of days boiler assumed to operate is 102

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,800,000	C. F.
Creosote Poles	1,000,000	C. F.
Total Creosote Wood	2,800,000	C. F.
Oil/Penta Poles	2,000,000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr|ave)
Creosote (VOC)	0.015	lb/cf	Form R	21.00	4.79
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	4.62	1.05
Biphenol	0.16	% in vapor	Calculation	0.03	0.01
Cresols	0.46	% in vapor	Calculation	0.10	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.13	0.03
Naphthalene	17	% in vapor	Calculation	3.57	0.81
P-Xylenes	4.5	% in vapor	Calculation	0.95	0.22
Phenol	1.4	% in vapor	Calculation	0.29	0.07
Quinoline	1.5	% in vapor	Calculation	0.32	0.07
Toluene	26	% in vapor	Calculation	5.46	1.24
TOTAL CREO. HAP	73.63	% in vapor		15.46	3.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.03	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	10.00	2.28
TOTAL VOC				31.03	7.07

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr|ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	5.75	1.31
Naphthalene	3.34E-03	lb/cf	FR Test	1.670	0.381
Benzene	4.23E-06	lb/cf	FR Test	0.002	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.076	0.017
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	11.50	2.62
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.002	0.000
Totals					
VOC				21.08	4.81
Naphthalene				2.90	0.66
Benzene				0.004	0.001
Toluene				0.108	0.025
Pentachlorophenol				0.002	0.000
HAP Organics (Total)				3.02	0.69

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSIONS (MIXED)

31-DRY KILNS

Poles Dried: 1,400,000 C. F.

Batch size (cf): 13000
Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
VOC	0.05	lb/cf	Alabama	35.00	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	200
Total Hours:	1600

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	1.60	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105,300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105,300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	600,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	13,500	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	2.36	3.465

SKID MOUNTED DIESEL ENGINES

Location	hp	hr/yr	hp-hr/yr
Fire Pump	0	0	0
34-Wood Fuel Grinder	500	2400	1200000
TOTAL	500		1200000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	7.2E-04	lb/hp-hr	AP-42	0.43	0.36
SO2	5.9E-04	lb/hp-hr	AP-42	0.35	0.30
NOX	0.0114	lb/hp-hr	AP-42	6.84	5.70
CO	0.438	lb/hp-hr	AP-42	262.80	219.00
VOC	0.0213	lb/hp-hr	AP-42	12.78	10.65

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 37,580 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	4.70	3.00

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	31.95	11.99
SO2 (2)	....	98.71	31.94
NOX	....	38.15	15.38
CO	....	286.60	224.82
VOC(less fugitive)	....	95.95	30.43
HAPs(Organics/VOC)	....	18.50	4.22
Naphthalene	....	6.47	1.48
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 30,269 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	21.79	5.76
SO2	4.29	lb/tn	AP-42&Cal.	64.93	17.16
NOX	1.4	lb/tn	FR Test	21.19	5.60
CO	1.2	lb/tn	FR Testx2	18.16	4.80
VOC	0.91	lb/tn	FR Test	13.77	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0013	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0020	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0047	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1347	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0085	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.15	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 35 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.04	0.41
SO2	71	lb/MGal	AP-42	1.24	14.48
NOX	20	lb/MGal	AP-42	0.35	4.08
CO	5	lb/MGal	AP-42	0.09	1.02
VOC	0.2	lb/MGal	AP-42	0.00	0.04

Number of days boiler assumed to operate is 7

ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,801,432	C. F.
Creosote Poles	149,476	C. F.
Total Creosote Wood	1,950,908	C. F.
Oil/Penta Poles	838,672	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	14.63	3.34
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.22	0.73
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.49	0.57
P-Xylenes	4.5	% in vapor	Calculation	0.66	0.15
Phenol	1.4	% in vapor	Calculation	0.20	0.05
Quinoline	1.5	% in vapor	Calculation	0.22	0.05
Toluene	26	% in vapor	Calculation	3.80	0.87
TOTAL CREO. HAP	73.63	% in vapor		10.77	2.46
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.19	0.96
TOTAL VOC				18.84	4.29

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.86	0.20
Naphthalene	3.34E-03	lb/cf	FR Test	0.250	0.057
Benzene	4.23E-06	lb/cf	FR Test	0.000	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.011	0.003
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	4.82	1.10
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.001	0.000
Totals					
VOC				9.51	2.17
Naphthalene				1.48	0.34
Benzene				0.002	0.000
Toluene				0.043	0.010
Pentachlorophenol				0.001	0.000
HAP Organics (Total)				1.53	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried: 542,773 C. F.

Batch size (cf): 13000

Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr[ave)
VOC	0.05	lb/cf	Alabama	13.57	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70,200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70,200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	600,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	13,500	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	2.36	3.465

ESTIMATED ACTUAL EMISSIONS

SKID MOUNTED DIESEL ENGINES

Location	hp	hr/yr	hp-hr/yr
Fire Pump	0	0	0
34-Wood Fuel Grinder	500	2400	1200000
TOTAL	500		1200000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	7.2E-04	lb/hp-hr	AP-42	0.43	0.36
SO2	5.9E-04	lb/hp-hr	AP-42	0.35	0.30
NOX	0.0114	lb/hp-hr	AP-42	6.84	5.70
CO	0.438	lb/hp-hr	AP-42	262.80	219.00
VOC	0.0213	lb/hp-hr	AP-42	12.78	10.65

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 30,269 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	3.78	3.00

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	25.02	11.99
SO2 (2)	....	66.52	31.94
NOX	....	28.38	15.38
CO	....	281.05	224.82
VOC(less fugitive)	....	58.96	27.65
HAPs(Organics/VOC)	....	12.31	2.81
Naphthalene	....	3.97	0.91
HAP Metals	....	0.15	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

SKID MOUNTED DIESEL ENGINES

Location	hp	hr/yr	hp-hr/yr
Fire Pump	0	0	0
34-Wood Fuel Grinder	500	8270	4135000
TOTAL	500		4135000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	7.2E-04	lb/hp-hr	AP-42	1.49	0.36
SO2	5.9E-04	lb/hp-hr	AP-42	1.22	0.30
NOX	0.0114	lb/hp-hr	AP-42	23.57	5.70
CO	0.438	lb/hp-hr	AP-42	905.57	219.00
VOC	0.0213	lb/hp-hr	AP-42	44.04	10.65

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 34,971 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	4.37	3.00

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	33.62	11.99
SO2 (2)	....	113.06	22.58
NOX	....	69.95	15.38
CO	....	932.02	224.82
VOC(less fugitive)	....	136.44	31.63
HAPs(Organics/VOC)	....	23.38	5.33
Naphthalene	....	8.34	1.90
HAP Metals	....	0.18	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

31-DRY KILNS

Poles Dried	1,600,000	C. F.	Batch size (cf):	13000
			Batch time (hrs):	72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr|ave)
VOC	0.05	lb/cf	Alabama	40.00	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	300
Total Hours:	2400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	2.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105,300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105,300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	600,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	13,500	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	2.36	3.465

05-WOOD PRESERVING PROCESSES

Creosote Ties	2,000,000	C. F.
Creosote Poles	1,500,000	C. F.
Total Creosote Wood	3,500,000	C. F.
Oil/Penta Poles	2,000,000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	26.25	5.99
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	5.78	1.32
Biphenol	0.16	% in vapor	Calculation	0.04	0.01
Cresols	0.46	% in vapor	Calculation	0.12	0.03
Dibenzofurans	0.61	% in vapor	Calculation	0.16	0.04
Naphthalene	17	% in vapor	Calculation	4.46	1.02
P-Xylenes	4.5	% in vapor	Calculation	1.18	0.27
Phenol	1.4	% in vapor	Calculation	0.37	0.08
Quinoline	1.5	% in vapor	Calculation	0.39	0.09
Toluene	26	% in vapor	Calculation	6.83	1.56
TOTAL CREO. HAP	73.63	% in vapor		19.33	4.41
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.03	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	10.00	2.28
TOTAL VOC				36.28	8.27

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	4.25	0.97
Naphthalene	1.37E-03	lb/cf	FR Test	1.37	0.31
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.04	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	8.63	1.97
Naphthalene	3.34E-03	lb/cf	FR Test	2.505	0.571
Benzene	4.23E-06	lb/cf	FR Test	0.003	0.001
Toluene	1.52E-04	lb/cf	FR Test	0.114	0.026
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	11.50	2.62
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.002	0.000
Totals					
VOC				24.38	5.56
Naphthalene				3.88	0.88
Benzene				0.005	0.001
Toluene				0.149	0.034
Pentachlorophenol				0.002	0.000
HAP Organics (Total)				4.03	0.92

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
MAXIMUM POTENTIAL EMISSIONS

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.05 %

Wood Burned (tn/yr): 34,971

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	25.18	5.76
SO2	1.95	lb/tn	AP-42&Cal.	34.10	7.80
NOX	1.4	lb/tn	FR Test	24.48	5.60
CO	1.2	lb/tn	FR Testx2	20.98	4.80
VOC	0.91	lb/tn	FR Test	15.91	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0015	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0023	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0054	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1556	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0098	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.18	0.040

26-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 2190

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	2.19	0.41
SO2	71	lb/MGal	AP-42	77.75	14.48
NOX	20	lb/MGal	AP-42	21.90	4.08
CO	5	lb/MGal	AP-42	5.48	1.02
VOC	0.2	lb/MGal	AP-42	0.22	0.04

Number of days boiler assumed to operate is 447

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.05 %

Wood Burned (tn/yr): 34,971

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	25.18	5.76
SO2	1.95	lb/tn	AP-42&Cal.	34.10	7.80
NOX	1.4	lb/tn	FR Test	24.48	5.60
CO	1.2	lb/tn	FR Testx2	20.98	4.80
VOC	0.91	lb/tn	FR Test	15.91	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0015	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0023	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0054	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1556	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0098	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.18	0.040

26-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 500

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.41
SO2	71	lb/MGal	AP-42	17.75	14.48
NOX	20	lb/MGal	AP-42	5.00	4.08
CO	5	lb/MGal	AP-42	1.25	1.02
VOC	0.2	lb/MGal	AP-42	0.05	0.04

Number of days boiler assumed to operate is 102

SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

05-WOOD PRESERVING PROCESSES

Creosote Ties	2,000,000	C. F.
Creosote Poles	1,500,000	C. F.
Total Creosote Wood	3,500,000	C. F.
Oil/Penta Poles	0	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	26.25	5.99
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	5.78	1.32
Biphenol	0.16	% in vapor	Calculation	0.04	0.01
Cresols	0.46	% in vapor	Calculation	0.12	0.03
Dibenzofurans	0.61	% in vapor	Calculation	0.16	0.04
Naphthalene	17	% in vapor	Calculation	4.46	1.02
P-Xylenes	4.5	% in vapor	Calculation	1.18	0.27
Phenol	1.4	% in vapor	Calculation	0.37	0.08
Quinoline	1.5	% in vapor	Calculation	0.39	0.09
Toluene	26	% in vapor	Calculation	6.83	1.56
TOTAL CREO. HAP	73.63	% in vapor		19.33	4.41
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.00	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	0.00	0.00
TOTAL VOC				26.25	5.99

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	4.25	0.97
Naphthalene	1.37E-03	lb/cf	FR Test	1.37	0.31
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.04	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	8.63	1.97
Naphthalene	3.34E-03	lb/cf	FR Test	2.505	0.571
Benzene	4.23E-06	lb/cf	FR Test	0.003	0.001
Toluene	1.52E-04	lb/cf	FR Test	0.114	0.026
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	0.00	0.00
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.000	0.000
Totals					
VOC				12.88	2.94
Naphthalene				3.88	0.88
Benzene				0.005	0.001
Toluene				0.149	0.034
Pentachlorophenol				0.000	0.000
HAP Organics (Total)				4.03	0.92

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

31-DRY KILNS

Poles Dried	1,400,000	C. F.	Batch size (cf):	13000
			Batch time (hrs):	72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
VOC	0.05	lb/cf	Alabama	35.00	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	300
Total Hours:	2400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	2.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105,300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105,300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	600,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	13,500	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	2.36	3.465

SKID MOUNTED DIESEL ENGINES

Location	hp	hr/yr	hp-hr/yr
Fire Pump	0	0	0
34-Wood Fuel Grinder	500	2400	1200000
TOTAL	500		1200000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	7.2E-04	lb/hp-hr	AP-42	0.43	0.36
SO2	5.9E-04	lb/hp-hr	AP-42	0.35	0.30
NOX	0.0114	lb/hp-hr	AP-42	6.84	5.70
CO	0.438	lb/hp-hr	AP-42	262.80	219.00
VOC	0.0213	lb/hp-hr	AP-42	12.78	10.65

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 34,971 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	4.37	3.00

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	30.87	11.99
SO2 (2)	....	52.20	22.58
NOX	....	36.32	15.38
CO	....	285.03	224.82
VOC(less fugitive)	....	89.99	29.34
HAPs(Organics/VOC)	....	23.36	5.33
Naphthalene	....	8.34	1.90
HAP Metals	....	0.18	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSION (HIGH PENTA VOL.)

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.05 %

Wood Burned (tn/yr): 34,971

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	25.18	5.76
SO2	1.95	lb/tn	AP-42&Cal.	34.10	7.80
NOX	1.4	lb/tn	FR Test	24.48	5.60
CO	1.2	lb/tn	FR Testx2	20.98	4.80
VOC	0.91	lb/tn	FR Test	15.91	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0015	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0023	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0054	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1556	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0098	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.18	0.040

26-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 500

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.41
SO2	71	lb/MGal	AP-42	17.75	14.48
NOX	20	lb/MGal	AP-42	5.00	4.08
CO	5	lb/MGal	AP-42	1.25	1.02
VOC	0.2	lb/MGal	AP-42	0.05	0.04

Number of days boiler assumed to operate is 102

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
SYNTHETIC MINOR EMISSION (HIGH PENTA VOL.)

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,500,000	C. F.
Creosote Poles	500,000	C. F.
Total Creosote Wood	2,000,000	C. F.
Oil/Penta Poles	3,000,000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	15.00	3.42
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.30	0.75
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.55	0.58
P-Xylenes	4.5	% in vapor	Calculation	0.68	0.15
Phenol	1.4	% in vapor	Calculation	0.21	0.05
Quinoline	1.5	% in vapor	Calculation	0.23	0.05
Toluene	26	% in vapor	Calculation	3.90	0.89
TOTAL CREO. HAP	73.63	% in vapor		11.04	2.52
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.04	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	15.00	3.42
TOTAL VOC				30.04	6.85

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.19	0.73
Naphthalene	1.37E-03	lb/cf	FR Test	1.03	0.23
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	2.88	0.66
Naphthalene	3.34E-03	lb/cf	FR Test	0.835	0.190
Benzene	4.23E-06	lb/cf	FR Test	0.001	0.000
Toluene	1.52E-04	lb/cf	FR Test	0.038	0.009
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	17.25	3.93
Pentachlorophenol	1.9E-06	lb/cf	Engr. Est.	0.003	0.001
Totals					
VOC				23.31	5.32
Naphthalene				1.86	0.42
Benzene				0.002	0.001
Toluene				0.065	0.015
Pentachlorophenol				0.003	0.001
HAP Organics (Total)				1.93	0.44

31-DRY KILNS

Poles Dried 1,400,000 C. F.

Batch size (cf): 13000
Batch time (hrs): 72

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
VOC	0.05	lb/cf	Alabama	35.00	9.03

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	200
Total Hours:	1600

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	1.60	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105,300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105,300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

32-POLE PEELER

Poles Peeled=	600,000	CF/yr	440	CF/hr
Pole Density=	45	lb/CF		
Pole Amount Peeled=	13,500	tn/yr	9.9	tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.350	lb/ton	AP-42	2.36	3.465

SKID MOUNTED DIESEL ENGINES

Location	hp	hr/yr	hp-hr/yr
Fire Pump	0	0	0
34-Wood Fuel Grinder	500	2400	1200000
TOTAL	500		1200000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	7.2E-04	lb/hp-hr	AP-42	0.43	0.36
SO2	5.9E-04	lb/hp-hr	AP-42	0.35	0.30
NOX	0.0114	lb/hp-hr	AP-42	6.84	5.70
CO	0.438	lb/hp-hr	AP-42	262.80	219.00
VOC	0.0213	lb/hp-hr	AP-42	12.78	10.65

33-SPACE HEATERS, NATURAL GAS

Location	BTU/Hr	BTU/CF	CF/Hr	Hr/Yr	MMCF/Yr
Boiler House	200000	1000	200	2016.00	0.4032
Standby Boiler Room	100000	1000	100	2016.00	0.2016
Fire Pump Building	20000	1000	20	2016.00	0.04032
TOTAL	320000		320		0.64512

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.18	lb/MMCF	AP-42	0.00	0.00
SO2	0.6	lb/MMCF	AP-42	0.00	0.00
NOX	94	lb/MMCF	AP-42	0.00	0.00
CO	40	lb/MMCF	AP-42	0.00	0.00
VOC	11	lb/MMCF	AP-42	0.00	0.00

34-WOOD FUEL PREPARATION & HANDLING (Fugitive)

Wood Fuel Processed 34,971 Tn/Yr 12 tn/hr

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	0.25	lb/tn	Engr. Est.	4.37	3.00

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	30.07	11.99
SO2 (2)	....	52.20	22.58
NOX	....	36.32	15.38
CO	....	285.03	224.82
VOC(less fugitive)	....	93.78	30.21
HAPs(Organics/VOC)	....	13.01	2.97
Naphthalene	....	4.41	1.01
HAP Metals	....	0.18	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSIONS INVENTORY CALCULATION
EXPLANATIONS

In the Emission Inventory Calculation spreadsheets, emissions are calculated using emission factors. To the right of the emission factors and factor units is a column titled "Basis." In most cases, the basis of the emission factor is the EPA document, AP-42. For factors with a basis other than AP-42, the basis is further esplained below.

BOILER, WOOD FIRED

5/88 Test for Particulate

The Grenada boiler had a stack test in May, 1988. This emission factor is derived from that test burning untreated wood fuel.

AP-42 and Calc. for SO2

SO2 is calculated on a mass balance basis assuming all sulfur is converted to SO2 and emitted. This method is the same as is used in AP-42 for fuel oil combustion, except that the calculation is based on the amount of wood burned and sulfur content of the wood.

FR Test for NOX

NOX has not been tested at this boiler, but Koppers has data from similar boiler in other locations. The emission at the Feather River (FR) boiler indicated emissions of about 2.88 lb/hr. This boiler is somewhat larger, but burning only untreated wood which would produce less NOX. NOX emissions were also tested at Koppers Susquehanna boiler and emissions of about 24.9 lb/hr were indicated. This boiler is about 4 times larger and burns hot and does burn treated wood, so would indicated emissions from the Grenada boiler about 6 to 7 lb/hr. A mid-range emission of 6.2 lb/hr results in a factor of 1.4 lb/ton.

FR Testx2 for CO

Emission factor based on testing at the Feather River plant, but doubled based on experience at other boilers which indicate higher levels should be expected.

FR Test for VOC

Emission factor based on the Feather River test, but increased by 20% for variability and unknown factors.

WOOD PRESERVING PROCESSES

Form R for Creosote and Pentaclorophenol

Emissions of creosote and pentachlorophenol are calculated and reported on the Form R annually. The calculation addresses point source emissions from tanks and vacuum pump vents, and fugitive emissions from treating cylinder doors and leaks from pumps, flanges, and valves. Tank and leak emissions are based on AP-42 type calculations, vacuum pump emissions are based on test results for similar equipment, and cylinder door emissions are based on assumed air displacement volume and vapor saturation. The total Form R reported emission is divided by the cubic feet of wood treated for the preservative to determine an emission factor. Emissions are assumed to vary proportionately with treatment volume. The amount of creosote emission is assumed to be equal to the amount of VOC emission from the creosote process.

Calculation for Organic HAPs from creosote

Results of a detailed chemical analysis of creosote and pure component vapor pressures of constituents have been used to estimate the vapor concentration of individual HAPs in the saturated creosote vapor. The amount of each HAP emitted is estimated as the calculated fraction of creosote vapor emitted.

Engr. Est. for Oil (VOC)

The fuel oil used as the carrier for pentachlorophenol is generally of about the same vapor pressure as creosote. For this calculation, the emission factor for oil is assumed to be about equal to the one determined for creosote.

PRESERVATIVE TREATED WOOD FUGITIVES

FR Test for VOC and HAPs

In a test, different from the boiler test, at the Feather River plant in California, HAP emissions were measured from creosote treated wood at various times after treatment from a ventilated enclosure. VOC was not measured directly, so is assumed to be equal to the sum of all measured organic constituents. Emission factors have been derived based on this data and incorporating typical product holding times and stacking geometry.

Engr. Est. for Pentachlorophenol

The factor was derived using a spread sheet program developed by the American Wood Preservers Institute designed to estimate emissions from treated pole storage. The amount so calculated was divided by the amount treated to develop the factor.

DRY KILNS

Alabama for VOC

There is very little data availble which can be used to estimate emissions from drying wood in kilns. Alabama Department of Enviromental Management has reviewed several reports related to dry kiln emissions. They have reviewed test results from lumber dry kilns and have determined that they will accept factors of 4.2 to 6.2 pounds per 1000 board feet (0.050 to 0.074 lb/cf) per Jim Wilson of ADEM. The factor used, 0.05, is at the low end of this range because emissions from poles are expected to be less than from lumber due to the lower ratio of surface area to volume.

POLE PEELER

AP-42

The AP-42 factor used is for plywood veneer log debarking.

WOOD FUEL PREPARATION AND HANDLING

Engr. Est.

Wood fuel preparation includes grinding used ties and poles for use as fuel in the boiler and the handling includes transporting and unloading fuel to the conveyor, conveying into the silos, and conveying into the boiler. The factor in AP-42, Table 10.3-1, for Plywood Veneer and Layout Operations, Sawdust Handling, is most appropriate. However, since most of the wood fuel is in chip form, rather than dust, that factor is reduced 75% from 1lb/ton to 0.25 lb/ton based on engineering judgement.

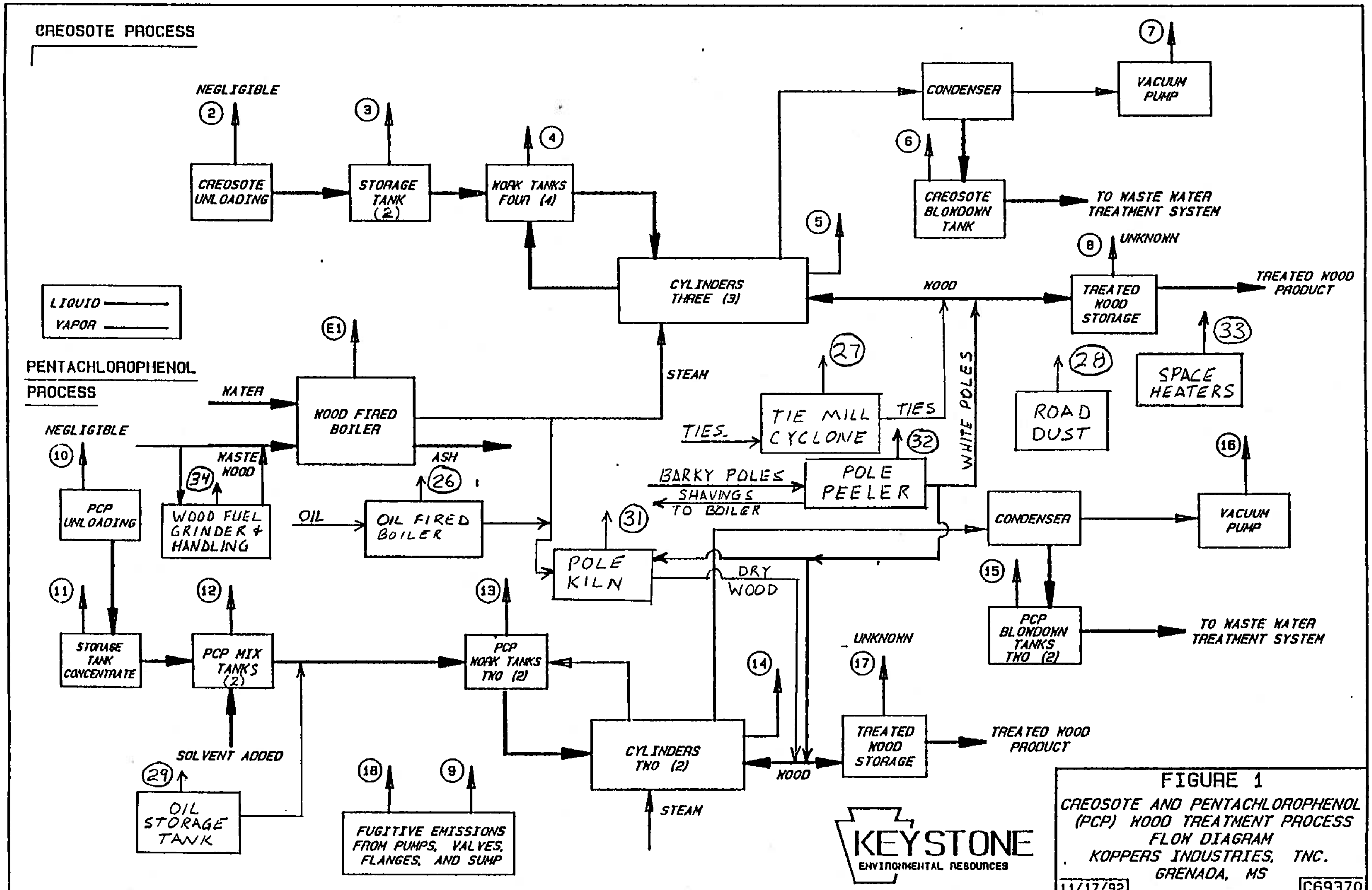


FIGURE 1

CREOSOTE AND PENTACHLOROPHENOL (PCP) WOOD TREATMENT PROCESS FLOW DIAGRAM

KOPPERS INDUSTRIES, INC.
GRENADA, MS

11/17/92 C69370

REVISED 3/30/95 SJS
9/29/95 SJS

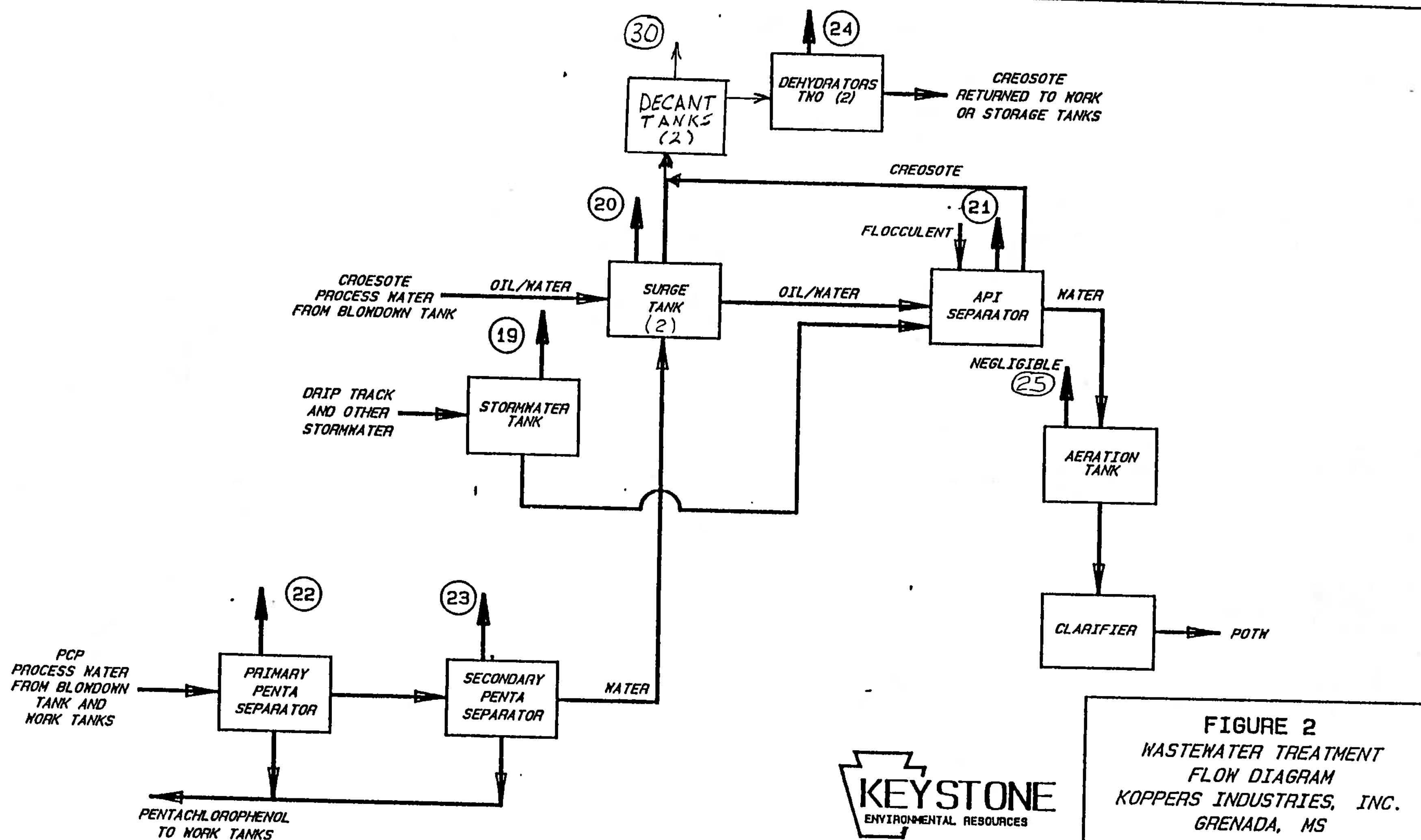
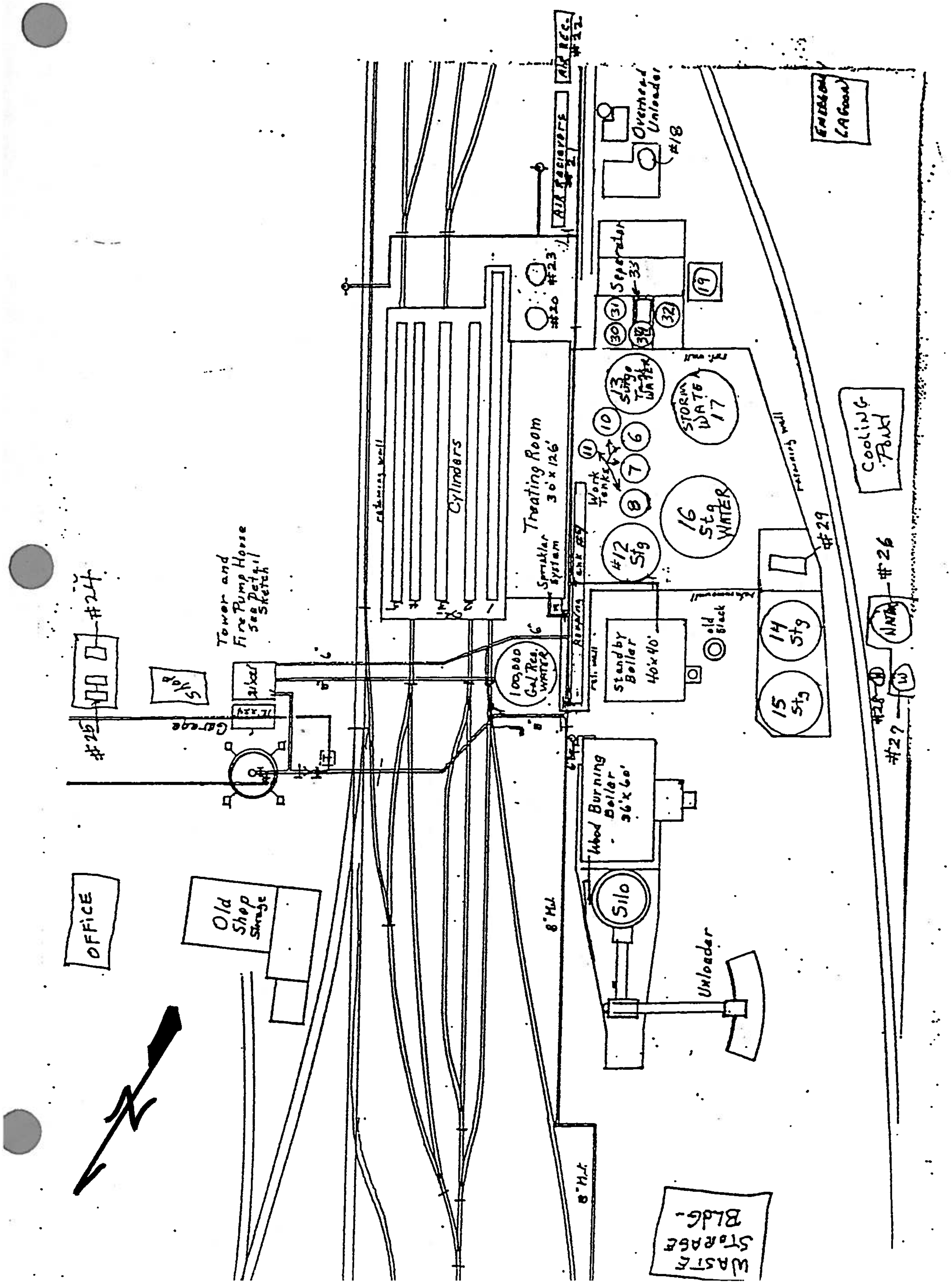


FIGURE 2
WASTEWATER TREATMENT
FLOW DIAGRAM
KOPPERS INDUSTRIES, INC.
GRENADA, MS

11/17/92 C69371

REVISED 3/30/95 STS

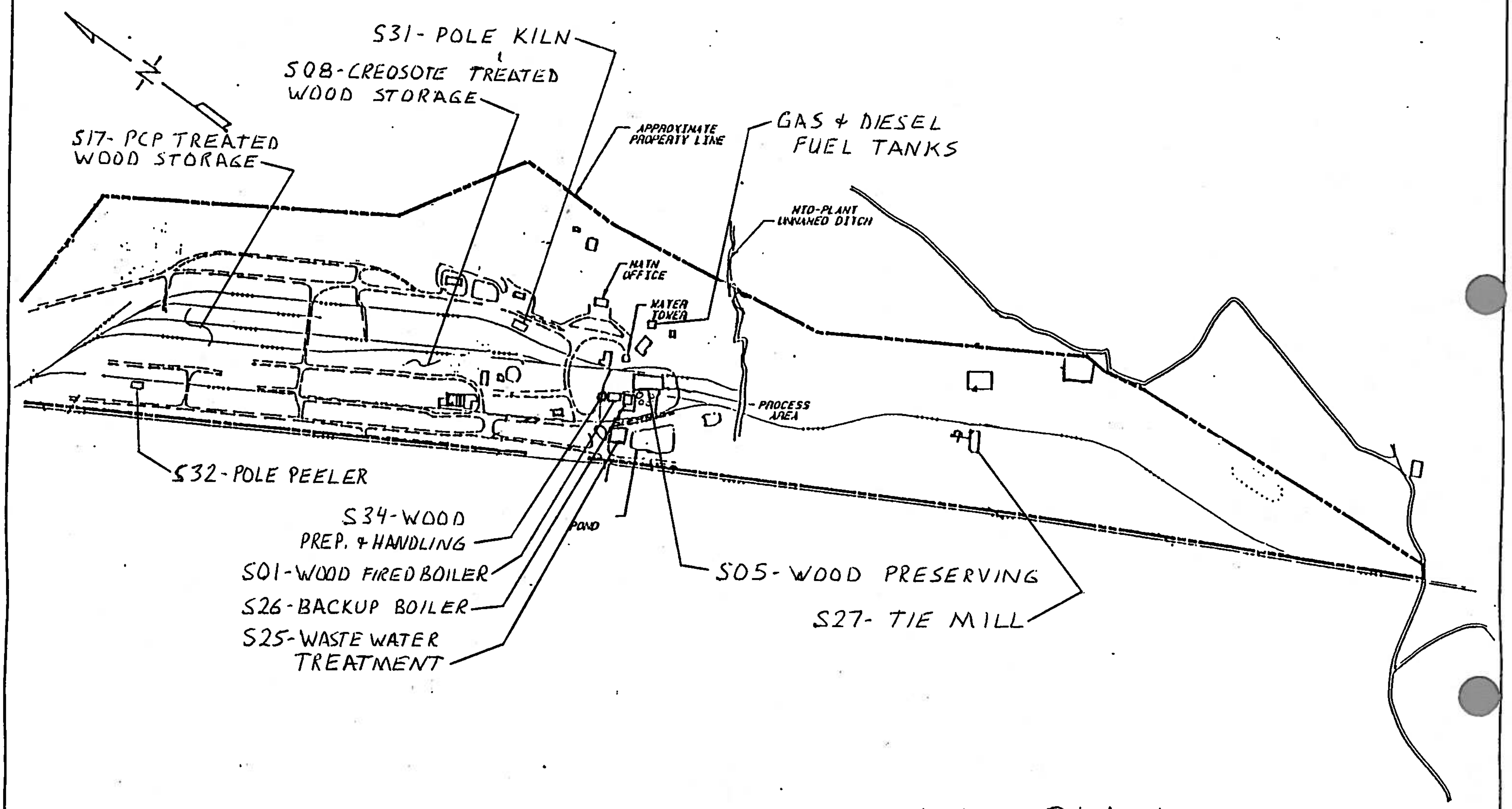
CONTINGENCY, SPCC, AND POLLUTION PREVENTION PLAN,
GRENADA PLANT, KOPPERS INDUSTRIES



SITE PLAN

FIGURE 1

Revised 9/27/95



SCALE (FEET) 0 200 400

SITE PLAN

FIGURE 2

9/29/95 STS

KOPPERS INDUSTRIES

TABLE 3.1 - TANK LISTINGS
Koppers Industries, Grenada Plant

Reference No.	Name	Contents	Capacity
1.	#1 Cylinder	Creosote	35,000
2.	#2 Cylinder	Creosote 60/40	28,000
3.	#3 Cylinder	Steam Conditioning	28,000
4.	#4 Cylinder	Creosote #1	28,000
5.	#5 Cylinder	Oil Borne Treatment	28,000
6.	#5 Work Tank	Penta in Oil	30,000
7.	#2 Work Tank	Creosote 60/40	30,000
8.	#3 Work Tank	Creosote	30,000
9.	#4 Work Tank	Creosote #1	22,420
10.	2nd Decant Tank	Creosote/Water	30,000
11.	Measuring Tank	Creosote #1	4,200
12.	Creo Storage Tank	Creosote #1	100,000
13.	Water Surge Tank	Process Water	100,000
14.	Oil Storage Tank	Fuel Oil	100,000
15.	Creo Storage Tank	Creosote 60/40	105,000
16.	Process Water Surge Tank	Process Water	300,000
17.	Storm Water Surge	Storm Water	250,000
18.	Coagulant	Dearfloc 4301	2,700
19.	Decant Tank	Creo/Oil/Water	4,500
20.	Creo Blowdown Tank	Water/Creosote	8,000
21.	Air Receivers	Compressed Air	
22.	Air Receivers	Compressed Air	
23.	Penta Blowdown Tank	Water/Penta/Oil	8,000
24.	Gas Tank	Gasoline	1,000
25.	Diesel Fuel	#2 Diesel Fuel Oil	20,000
26.	Aeration Tank	Waste Water	150,000
27.	Clarifier Tank	Waste Water	25,000
28.	Discharge Tank	Waste Water	15,000
29.	Creosote Dehydrator	Not in Use	4,000
30.	N. Penta Equilization	Water/Oil/Penta	14,000
31.	S. Penta Equilization	Water/Oil/Penta	14,000
32.	Penta Mix Tank	Oil/Penta	11,500
33.	Penta Mix Tank	Oil/Penta	5,000
34.	Penta Concentrate Storage	Penta Concentrate	10,500

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		13	4	4	4	30	4	3
Reference No.(Table 3.1)		Tank 6	Tank 7	Tank 8	Tank 9	Tank 10	Tank 11	Tank 12
Name		Wk Tk 5	Wk Tk 2	Wk Tk 3	WT 4 H	Decant	Measuring	Storage
2. Construction Date		1903	1903	1979	1966	1903	1966	1903
3. Material Stored		Oil/Penta	P2Creosote	P2Creosote	P1Creosote	Water/Creo	P1Creosote	P1Creosote
4A.True Vapor Pressure a T.	psia							
4B. Reid Vapor Pres. at T.	psia							
Storage Temperature T	Deg. F	200	200	200	200	150	200	200
4C. Density at T	lb/gal	9.25	9.25	9.25	8.95	7.51	8.95	8.95
4D. Mol. Wt. at T	lb/lbmole							
4E. Throughput	Gal/yr	10000000	8200000	8200000	6500000	11445000	740000	740000
4F. Tank Capacity	Gal.	29786	29786	29786	22419	29786	4230	110544
4G. Tank Diameter	Feet	13	13	13	6	13	6	28
4H. Tank Height/Length	Feet	30	30	30	106	30	20	24
4I.Ave. Vapor Space Height	Feet	1	1	1		1	1	10
4J. Tank Orientation (H or V)		V	v	v	h	v	v	v
4K. Type of Roof (D or C)		d	d	d		d	d	c
4L.Vapor Recovery Sys.?	Y or N	N	n	n	n	n	n	n
4M. Type of Tank? Fixed=F		F	f	f	f	f	f	f
4N. Closest City ?	Memphis							
4O. Tank Paint Color?		Black	black	black	Alum	Black	Black	Black
4P. Paint Condition (G or P)		P	p	p	p	p	p	p
4Q. Type Tank Loading (SpD or	SpVB)	Bot.	Bot.	Bot.	Bot.	Bot.	Bot.	Bot.
4R. Not Applicable to any tanks								
4S. Not Applicable to any tanks								
5.1. Breathing Loss	lb/hr							
	TPY							
5.2. Working Loss	lb/hr							
	TPY							
5.3. Total Emissions	lb/hr							
	TPY							

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		20	29	3	20	19	Insignif.	24
Reference No.(Table 3.1)		Tank 13	Tank 14	Tank 15	Tank 16	Tank 17	Tank 18	Tank 19
Name		WW Surge	Storage	Storage	Storage	Surge	Coagulant	Decant
2. Construction Date		1903	1903	1903	1903	1989	1989	1989
3. Material Stored		W Water	#2Diesel	P2Creosote	Proc.Water	StormWat.	Dearfloc	Water/Creo
4A.True Vapor Pressure a T.	psia							
4B. Reid Vapor Pres. at T.	psia							
Storage Temperature T	Deg. F	Amb.	60	120	60	60	60	150
4C. Density at T	lb/gal	8.34	7.1	9.25	9.25	8.34	8.67	8.34
4D. Mol. Wt. at T	lb/lbmole							
4E. Throughput	Gal/yr	1600000	127500	660000	1400000	2272000		230000
4F. Tank Capacity	Gal.	110544	110544	105750	300800	266490	2763	4512
4G. Tank Diameter	Feet	28	28	30	40	36	7.83	8
4H. Tank Height/Length	Feet	24	24	20	32	35	7.67	12
4I.Ave. Vapor Space Height	Feet	1	10	12	15	10	3	2
4J. Tank Orientation (H or V)		v	v	v	v	v	v	v
4K. Type of Roof (D or C)		c	c	c	c	none	d	d
4L.Vapor Recovery Sys.?	Y or N	n	n	n	n		n	n
4M. Type of Tank? Fixed=F		f	f	f	f	open	f	f
4N. Closest City ?	Memphis							
4O. Tank Paint Color?		Black	Black	Black	Black	Blue	Alum.	Black
4P. Paint Condition (G or P)		p	p	p	p	g	g	p
4Q. Type Tank Loading (SpD or SpVB)		Bot.	Bot.	Bot.	Bot.	SpD	SpD	SpD
4R. Not Applicable to any tanks								
4S. Not Applicable to any tanks								
5.1. Breathing Loss	lb/hr							
	TPY							
5.2. Working Loss	lb/hr							
	TPY							
5.3. Total Emissions	lb/hr							
	TPY							

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		6	15	Insignif.	Insignif.	Insignif.	Insignif.	Insignif.
Reference No.(Table 3.1)		Tank 20	Tank 23	Tank 24	Tank 25	Tank 26	Tank 27	Tank 28
Name		Creo BD	Penta BD	Gas	Diesel	Aeration	Clarifier	Discharge
2. Construction Date		1980	1980	1986	1930	1988	1988	1988
3. Material Stored		Water/Creo	Water/Oil	Gasoline	#2 Diesel	W Water	W Water	W Water
4A.True Vapor Pressure a T.	psia							
4B. Reid Vapor Pres. at T.	psia							
Storage Temperature T	Deg. F	150	100	60	60	80	80	80
4C. Density at T	lb/gal	8.34	8.34	6.5	7	8.34	8.34	8.34
4D. Mol. Wt. at T	lb/lbmole							
4E. Throughput	Gal/yr	532000	493000					
4F. Tank Capacity	Gal.	8225	8225	991	20381	169670	30456	17132
4G. Tank Diameter	Feet	10	10	3.75	7.25	38	18	18
4H. Tank Height/Length	Feet	14	14	12	66	20	16	9
4I.Ave. Vapor Space Height	Feet	12	12	1.5	3			
4J. Tank Orientation (H or V)		v	v	h	h	v	v	v
4K. Type of Roof (D or C)		d	d			none	none	none
4L.Vapor Recovery Sys.?	Y or N	n	n	n	n	n	n	n
4M. Type of Tank? Fixed=F		f	f	f	f	open	open	open
4N. Closest City ?	Memphis							
4O. Tank Paint Color?		Black	Black	Alum	Alum	White	White	White
4P. Paint Condition (G or P)		p	p	g	g	g	g	g
4Q. Type Tank Loading (SpD or SpVB)		SpD	SpD	Bottom	Bottom	SpD	SpD	SpD
4R. Not Applicable to any tanks								
4S. Not Applicable to any tanks								
5.1. Breathing Loss	lb/hr							
	TPY							
5.2. Working Loss	lb/hr							
	TPY							
5.3. Total Emissions	lb/hr							
	TPY							

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		22	23	12	12	11
Reference No.(Table 3.1)		Tank 30	Tank 31	Tank 32	Tank 33	Tank 34
Name		N.Pen.Eq.	S.Pen.Eq.	Penta Mix	Penta Mix	Penta Conc
2. Construction Date		1980	1980	1981	1981	1981
3. Material Stored		Oil/Water	Oil/Water	Oil/Penta	Oil/Penta	PentaConc.
4A.True Vapor Pressure a T.	psia					
4B. Reid Vapor Pres. at T.	psia					
Storage Temperature T	Deg. F	100	100	160	160	60
4C. Density at T	lb/gal	9	9	7.5	7.5	9.55
4D. Mol. Wt. at T	lb/lbmole					
4E. Throughput	Gal/yr			850000	850000	120000
4F. Tank Capacity	Gal.	10281	10281	9400	5001	10575
4G. Tank Diameter	Feet	10	10	10	8	10
4H. Tank Height/Length	Feet	17.5	17.5	16	13.3	18
4I.Ave. Vapor Space Height	Feet	5	5	1	1	5
4J. Tank Orientation (H or V)		v	v	v	h	v
4K. Type of Roof (D or C)		c	c		c	Flat
4L.Vapor Recovery Sys.?	Y or N	n	n	n	n	n
4M. Type of Tank? Fixed=F		f	f	f	f	f
4N. Closest City ?	Memphis					
4O. Tank Paint Color?		Black	Black	Black	Black	Aluminum
4P. Paint Condition (G or P)		p	p	p	p	g
4Q. Type Tank Loading (SpD or	SpVB)	SpD	SpD	Bot.	SpD	Bot.
4R. Not Applicable to any tanks						
4S. Not Applicable to any tanks						
5.1. Breathing Loss	lb/hr					
	TPY					
5.2. Working Loss	lb/hr					
	TPY					
5.3. Total Emissions	lb/hr					
	TPY					

Material Safety Data Sheet

Emergency Phon
708-438-180(

Section 1 Product Identification

TRADE NAME: DEARFLOC 4301

PRODUCT TYPE: Wastewater Treatment

CODE IDENT.: 15-301

DOT SHIPPING NAME: Compound Industrial Process Water Treating Liquid

Section 2 Hazardous Ingredients

	CAS NUMBER	%	EXPOSURE CRITERIA
Formaldehyde	50-00-0	< 0.2	TWA - 1 ppm
Hydrochloric acid	7647-01-0	< 1.0	Ceiling - 2 ppm

HMIS 3-0-0

Section 3 Physical Data

BOILING POINT, 760 mm Hg	> 212 F	MELTING POINT	ND
FREEZING POINT	< 32 F	VAPOR PRESSURE	ND
SPECIFIC GRAVITY (H_2O = 1)	1.04	SOLUBILITY IN H_2O	Appreciable
VAPOR DENSITY (AIR = 1)	ND	EVAPORATION RATE (Bu Ac = 1)	< 1
% VOLATILES BY VOLUME	ND	pH	1.9

APPEARANCE & ODOR

Clear liquid

Section 4 Fire & Explosion Hazard Data

FLASH POINT (& METHOD USED)	FLAMMABLE LIMITS IN AIR % BY VOLUME LOWER	UPPER	AUTO IGNITION TEMPERATURE
Not applicable	NA	NA	NA

EXTINGUISHING MEDIA: WATER FOG FOAM CO2 DRY CHEMICAL

SPECIAL FIRE FIGHTING PROCEDURES:

Firefighters should wear full protective gear including self contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARD

None known

Section 5 Reactivity Data

STABILITY (NORMAL CONDITIONS): Stable

CONDITIONS TO AVOID: Extreme heat

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS

Oxides of carbon, nitrogen, HCl

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Not applicable

GRACE Dearborn

Dearborn Division W. R. Grace & Co. - Conn., 300 Genesee Street, Lake Zurich, IL 60047 (708) 438-1800

Section 6 Health Hazard Information

TOXICITY INFORMATION:

Not established, see section 2 for component information.

EFFECTS OF OVEREXPOSURE:

INHALATION: Inhalation of mist may irritate respiratory passages.

INGESTION: May be harmful if swallowed.

SKIN CONTACT: Prolonged or frequent skin contact may cause irritation.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove affected person to fresh air and treat symptoms.

INGESTION: If conscious, give water to dilute and contact physician immediately.

SKIN CONTACT: Wash with soap & water. Remove contaminated clothing and wash before reuse.

EYE CONTACT: Flush with water for 15 minutes and seek medical attention.

Section 7 Special Protection Information

VENTILATION REQUIREMENTS

Use adequate mechanical ventilation.

RESPIRATORY PROTECTION (SPECIFY TYPE)

None special.

EYE PROTECTION

Chemical Goggles

GLOVES

Impervious

OTHER PROTECTIVE CLOTHING AND EQUIPMENT

Long sleeve work shirt and pants.

Section 8 Spill or Leak Procedures

STEPS TO TAKE IF MATERIAL IS RELEASED OR SPILLED

Wear protective clothing. Dike spill and soak up on an inert absorbent material. Flush area of spill with water.

WASTE DISPOSAL METHOD

Dispose of in accordance with federal, state and local regulations.

Contains < 0.2% of formaldehyde, CAS No 50-00-0 and < 1.0% of hydrochloric acid CAS No 7647-01-0 which may require reporting under Section 313 of SARA Title III and 40 CFR.

Section 9 Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store containers closed away from extreme temperatures.

OTHER PRECAUTIONS

FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

PREPARED BY: S. Morss DATE: 1/23/91

GRACE Dearborn

Dearborn Division W. R. Grace & Co. - Conn., 300 Genesee Street, Lake Zurich, IL 60047 (708) 438-1800

DATE	TICKET #	GALLONS	SULFER WT%
"10-10-94	WG09267	7470	0.25
"10-10-94	WG09263	7452	0.25
"10-10-94	WG09256	7471	0.24
"10-19-94	WG09702	7475	0.3
"10-20-94	WG09705	7482	0.24
"10-26-94	WG09726	7491	0.25
"10-26-94	WG09727	7484	0.25
"10-28-94	WG09722	7472	0.24
"10-31-94	WG09736	7481	0.24
"11-3-94	WG09740	7500	0.24
"11-14-94	WG09774	7484	0.25
"11-16-94	WG09776	7478	0.3
"11-17-94	WG09777	7488	0.3
"11-21-94	WG09787	7506	0.3
"11-23-94	WG09793	7567	0.3
"11-28-94	WG10004	7521	0.3
"11-30-94	WG10010	7523	0.24
"12-6-94	WG10044	7514	0.24
"12-9-94	WG10054	7525	0.24
"12-13-94	WG10061	7532	0.24
"12-15-94	WG10069	7547	0.24
"12-19-94	WG10077	7550	0.24
"12-20-94	WG10083	7521	0.3
"12-27-94	WG10104	7577	0.3

TOTAL GALLONS= 180111
AVERAGE SULFUR 0.26208333

BOILER FUEL FOURTH QUARTER 1994 = 19,859 GALS.

DATE	TICKET #	GALLONS	SULFER WT%
1-4-95	WG10129	7521	0.3
1-5-95	WG10126	7522	0.3
1-10-95	WG10140	7544	0.3
1-11-95	WG10142	7540	0.24
1-16-95	WG10155	7537	0.24
1-18-95	WG10161	7539	0.25
1-23-95	WG10175	7566	0.22
1-26-95	WG10181	7571	0.3
1-31-95	WG10315	7513	0.22
2-7-95	WG10325	7536	0.22
2-9-95	WG10333	7547	0.22
2-16-95	WG10344	7655	0.22
2-14-95	WG10340	7579	0.24
2-20-95	WG10354	7556	0.22
2-21-95	WG10357	7553	0.22
2-28-95	WG10373	7537	0.22
3-3-95	WG10389	7556	0.22
3-3-95	WG10385	7550	0.22
3-7-95	WG10396	7515	0.3
3-8-95	WG10388	7545	0.25
3-8-95	WG10395	7560	0.22
3-8-95	WG10400	7539	0.24
3-14-95	WG10829	7533	0.3
3-15-95	WG10833	7526	0.3
3-22-95	WG10842	7534	0.3
3-22-95	WG10846	7514	0.3
3-28-95	WG10859	7489	0.3
3-29-95	WG10866	7509	0.25

TOTAL GALLONS 211186
AVG SULFUR WT% 0.2546429

BOILER FUEL FIRST QUARTER 1995 = 18,342 GALS.

DATE	TICKET #	GALLONS	SULFER WT%
4-3-95	WG10873	7501	0.3
4-5-95	WG10895	7509	0.3
4-5-95	WG10891	7509	0.3
4-12-95	WG10915	7487	0.3
4-11-95	WG10906	7477	0.3
4-19-95	WG10930	7474	0.3
4-20-95	WG10928	7483	0.3
4-25-95	WG10944	7491	0.3
4-28-95	WG10948	7485	0.3
5-16-95	WG11361	7470	0.25
5-18-95	WG11373	7455	0.25
5-19-95	WG10962	7466	0.25
5-22-95	WG11382	7477	0.25
5-23-95	WG11386	7463	0.25
5-24-95	WG11388	7444	0.25
5-31-95	WG11411	7433	0.25
6-1-95	WG11414	7427	0.25
6-6-95	WG11426	7428	0.25
6-9-95	WG11753	7419	0.25
6-12-95	WG11763	7440	0.25
6-14-95	WG11768	7451	0.25
6-20-95	WG11784	7441	0.25
6-22-95	WG11787	7418	0.25
6-27-95	WG11799	7424	0.25
6-29-95	WG11808	7426	0.25

TOTAL GALLONS	186498
AVG SULFUR WT%	0.268

BOILER FUEL SECOND QUARTER 1995 = 9,059 GALS.

Koppers Industries, Inc.
August 24, 1995
Attachment to Letter

The following items are needed for review of your application.

(1) In Section C, page 19, the blank in which you were to indicate the number of Sections E submitted contained a question mark. We received four (4) Sections E. Please let us know if this is not the number submitted.

(2) It is our understanding that there are no skid mounted engines at this facility, including the fire pump. Please let us know if this is incorrect.

(3) Are there any sawing, debarking, or post peeling operations at this facility with the potential to emit a regulated pollutant? If so, please include these operations in your application by submitting applicable sections of the application form. Indicate how is the waste from these operations is handled.

(4) Emissions from unloading operations for creosote, pentachlorophenol solution, and/or other volatile liquids have not been addressed. Please do so. Indicate how pentachlorophenol solution is received.

(5) Site plan numbers do not correspond with flow diagram numbers or reference numbers used elsewhere in the application. Please use the same reference number throughout the application. This is particularly confusing with tank numbers. For instance, the number 5 work tank shown on the site plan is not listed in Table 3.1. It is listed in the Tank Summary Table as Emission Point 13 with a notation indicating that it is Reference Number 6 in Table 3.1. Reference Number 6 in Table 3.1 refers to #1 Work Tank. "WT 1" in the Tank Summary Table is listed as Emission Point 30 with a notation indicating that it is Reference Number 10 in Table 3.1. Reference Number 10 in Table 3.1 refers to "#1 2nd Decant Tank". Please resubmit any parts of the application necessary to clarify this situation.

(6) Construction dates of tanks were not given and are required.

(7) Thirty four (34) tanks were listed under the tab "Tanks Data", but subsequent pages give data for only eighteen (18). Since reference numbers are not consistently used, it is not apparent if the tanks for which data is given are included in the list or are additional tanks. The required data must be submitted for each tank, including those listed as "insignificant activities" in Section C.

(8) Are there any emissions from the Waste Storage Building shown on the Site Plan?

(9) The emission factor of 0.08 lb of VOC per cubic foot of wood used in your dry kiln calculations is much lower the value of 1.7 lb of VOC per thousand board feet given by the EPA in "Emission Factor Documentation for AP-42 Section 10.1, Lumber and Wood Products Manufacturing and Woodworking Operations, Table 10.1-2". Please explain how this factor reasonably represents the maximum potential emission rate for your operation.

(10) What is the flocculent used in the API separator? Are there emissions from its storage, handling and/or use?

(11) What is the fuel system additive stored in a tank shown on the Site Plan? What emissions result from its storage, handling and/or use?

(12) The bases of some calculations say "FR Test", "FR Testx2", "Calculation", "Form R", "Engr. Est.", or "Alabama". This is insufficient. More detail is required.

(13) How was the maximum Wood Fuel Sulfur determined to be 0.11%?

(14) What is the "Treating Volume Factor" referenced in "Emissions Inventory Scenarios"? If it is used in calculations, indicate how.

(15) Natural gas fired space heaters listed as insignificant activities in Section C should be listed in Section D and emissions should be calculated and included in total facility emissions.

Additional items may be identified during the detailed review.

DEPT OF ENVIRONMENTAL QUALITY
TITLE V AIR PERMIT FEE
P. O. Box 20325
Jackson, MS 39289-1325

** INVOICE **

*** TITLE V AIR OPERATING PERMIT FEE ***

BILL TO:
KOPPERS INDUSTRIES INC

P O BOX 160
TIE PLANT, MS 38960

INVOICE # 234
INVOICE DATE: 8/01/95

CONTACT PERSON: Cheryl Shelby
TELEPHONE: 601-961-5381

FACILITY I.D. # 0960-00012

TERMS: DUE 9/1/95

POLLUTANT	ACTUAL OR ALLOWABLE EMISSIONS	TONS OF EMISSIONS BILLED	FEE PER TON OF EMISSIONS	TOTAL FEE
PARTICULATE MATTER	22.230	22.230	16.00	355.68
SO2	30.750	30.750	16.00	492.00
NOX	21.540	21.540	16.00	344.64
CO	18.250	0.000	16.00	0.00
VOC	66.630	66.630	16.00	1,066.08
LEAD	0.000	0.000	16.00	0.00
TRS	0.000	0.000	16.00	0.00
TOTAL HAP's (VOC)	12.310	0.000	16.00	0.00
TOTAL HAPs (Non-Voc)	0.150	0.150	16.00	2.40
CFC's / HCFC's	0.000	0.000	16.00	0.00

TOTAL ANNUAL FEE DUE 2,260.80

As per Section 49-17-30 of the MS Code, the maximum emission rate used for calculation of fees for any pollutant is 4,000 tons, with total fees not to exceed $250,000 per facility. You were billed for actual or allowable emissions based upon the option which you previously indicated.

* * * FAILURE TO REMIT PAYMENT BY THE DUE DATE MAY * * *
* * * * * * * * RESULT IN A LATE PENALTY * * * * * * * *

FILE COPY

KOPPERS INDUSTRIES

150750 62-4/311

PAY:TWO THOUSAND TWO HUNDRED SIXTY AND 80/100 ONLY

	DATE	AMOUNT
	AUGUST 22 1995	$2,260.80

MISSISSIPPI ST DEPT ENVIRONMEN
TITLE V AIR PERMIT
PO BOX 20325
JACKSON MS 39289-1325

Payable through Mellon Bank (DE) N.A., Wilmington, DE 19899
Mellon Bank (East) N.A., Philadelphia, PA 19102

DE K

V.P. AND C.F.O.

KOPPERS INDUSTRIES, INC.

McAchening

TREASURER

⑈150750⑈ ⑆031100047⑆ 2⑈943 678⑈

KOPPERS INDUSTRIES, INC. PITTSBURGH PA

150750

SP CD	VENDOR	DIV	OUR AUDIT	YOUR INVOICE NBR	INV MO/DA	INV AMOUNT	DISC	NET AMT PAYABLE
7	940505031	477	02405082040	234	0801	2260.80	0.00	***2260.80

0960-00012

SEP 1995
RECEIVED
AS/BS
FEES

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.05 %

Wood Burned (tn/yr): 30269 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	21.79	5.76
SO2	1.95	lb/tn	AP-42&Cal	29.51	7.80
NOX	1.4	lb/tn	FR Test	21.19	5.60
CO	1.2	lb/tn	FR Testx2	18.16	4.80
VOC	0.91	lb/tn	FR Test	13.77	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0013	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0020	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0047	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1347	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0085	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.15	0.040

25-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.204

Oil Burned(MGal/yr): 35 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.04	0.41
SO2	71	lb/MGal	AP-42	1.24	14.48
NOX	20	lb/MGal	AP-42	0.35	4.08
CO	5	lb/MGal	AP-42	0.09	1.02
VOC	0.2	lb/MGal	AP-42	0.00	0.04

Number of days boiler assumed to operate is 7

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,801,432	C. F.
Creosote Poles	149,476	C. F.
Total Creosote Wood	1,950,908	C. F.
Oil/Penta Poles	838,672	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	14.63	3.34
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.22	0.73
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.49	0.57
P-Xylenes	4.5	% in vapor	Calculation	0.66	0.15
Phenol	1.4	% in vapor	Calculation	0.20	0.05
Quinoline	1.5	% in vapor	Calculation	0.22	0.05
Toluene	26	% in vapor	Calculation	3.80	0.87
TOTAL CREO. HAP	73.63	% in vapor		10.77	2.46
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.19	0.96
TOTAL VOC				18.84	4.29

06-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.86	0.20
Naphthalene	3.34E-03	lb/cf	FR Test	0.25	0.06
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.01	0.00
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	4.82	1.10
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				9.51	2.17
Naphthalene				1.48	0.34
Benzene				0.00	0.00
Toluene				0.04	0.01
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				1.53	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried: 542773 C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	21.71	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

26-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trfng volume factor
p=no. wet days/year=	110	days	70200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)		22.23	8.77
SO2 (2)		30.75	22.28
NOX		21.54	9.68
CO		18.25	5.82
VOC(less fugitive)		54.32	7.98
HAPs(Organics/VOC)		12.31	2.81
Naphthalene		3.97	0.91
HAP Metals		0.15	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

Wood Burned (tn/yr): 30269

Sulfur in wood fuel= 0.05 %

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	21.79	5.76
SO2	1.95	lb/tn	AP-42&Cal.	29.51	7.80
NOX	1.4	lb/tn	FR Test	21.19	5.60
CO	1.2	lb/tn	FR Testx2	18.16	4.80
VOC	0.91	lb/tn	FR Test	13.77	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0013	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0020	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0047	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1347	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0085	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.15	0.040

26-BOILER, FUEL OIL

Oil Burned(MGal/yr): 35

Fuel Use Rate(MGal/hr) 0.204

Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.04	0.41
SO2	71	lb/MGal	AP-42	1.24	14.48
NOX	20	lb/MGal	AP-42	0.35	4.08
CO	5	lb/MGal	AP-42	0.09	1.02
VOC	0.2	lb/MGal	AP-42	0.00	0.04

Number of days boiler assumed to operate is 7

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,801,432	C. F.
Creosote Poles	149,476	C. F.
Total Creosote Wood	1,950,908	C. F.
Oil/Penta Poles	838,672	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	14.63	3.34
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.22	0.73
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.49	0.57
P-Xylenes	4.5	% in vapor	Calculation	0.66	0.15
Phenol	1.4	% in vapor	Calculation	0.20	0.05
Quinoline	1.5	% in vapor	Calculation	0.22	0.05
Toluene	26	% in vapor	Calculation	3.80	0.87
TOTAL CREO. HAP	73.63	% in vapor		10.77	2.46
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.19	0.96
TOTAL VOC				18.84	4.29

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.86	0.20
Naphthalene	3.34E-03	lb/cf	FR Test	0.25	0.06
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.01	0.00
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	4.82	1.10
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				9.51	2.17
Naphthalene				1.48	0.34
Benzene				0.00	0.00
Toluene				0.04	0.01
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				1.53	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried	542773	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	21.71	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	22.23	8.17
SO2 (2)	....	30.75	22.28
NOX	....	21.54	9.68
CO	....	18.25	5.82
VOC(less fugitive)	....	54.32	7.98
HAPs(Organics/VOC)	....	12.31	2.81
Naphthalene	....	3.97	0.91
HAP Metals	....	0.15	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM

P.O. BOX 10385

JACKSON, MS 39289-0385

In accordance with Section 49-17-32, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

Calendar Year Reported: 1994 **MDEQ Facility ID #:** 0960 - 00012 **Date:** 6/21/95 **SIC Code:** 2491

Facility Name: Koppers Industries, Inc.

Mailing Address: P. O BOX 160 (Street or P.O. Box) TIE PLANT (City) MS (State) 38960 (Zip)

Site Address: TIE PLANT ROAD (Street Location) TIE PLANT (City) GRENADA (County)

Contact and Title: RONALD P. MURPHEY PLANT MANAGER **Contact's Phone #:** 601-226-4584

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	22.23
SO2	157.81	30.75
NOX	47.74	21.54
CO	29.37	18.25
VOC*	18.88	66.63
LEAD	0.0008	0.00
TRS	0	
Total HAPs (Voc)	0	12.31
Total HAPs (Non-Voc)	0	0.15
CFCs/HCFCs	0	0
Other	0	0

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

Ronald P. Murphey PLANT MANAGER
Signature and Title

6/21/95
Date

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED

Sulfur in wood fuel= 0.05 %

Wood Burned (tn/yr): 30269

(lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	21.79	5.76
SO2	1.95	lb/tn	AP-42&Cal.	29.51	7.80
NOX	1.4	lb/tn	FR Test	21.19	5.60
CO	1.2	lb/tn	FR Testx2	18.16	4.80
VOC	0.91	lb/tn	FR Test	13.77	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0013	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0020	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0047	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1347	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0085	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.15	0.040

26-BOILER, FUEL OIL

Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 35 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.04	0.50
SO2	71	lb/MGal	AP-42	1.24	17.75
NOX	20	lb/MGal	AP-42	0.35	5.00
CO	5	lb/MGal	AP-42	0.09	1.25
VOC	0.2	lb/MGal	AP-42	0.00	0.05

Number of days boiler assumed to operate is 6

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	1,801,432	C. F.
Creosote Poles	149,476	C. F.
Total Creosote Wood	1,950,908	C. F.
Oil/Penta Poles	838,672	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	14.63	3.34
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.22	0.73
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.49	0.57
P-Xylenes	4.5	% in vapor	Calculation	0.66	0.15
Phenol	1.4	% in vapor	Calculation	0.20	0.05
Quinoline	1.5	% in vapor	Calculation	0.22	0.05
Toluene	26	% in vapor	Calculation	3.80	0.87
TOTAL CREO. HAP	73.63	% in vapor		10.77	2.46
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.01	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	4.19	0.96
TOTAL VOC				18.84	4.29

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	0.86	0.20
Naphthalene	3.34E-03	lb/cf	FR Test	0.25	0.06
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.01	0.00
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	4.82	1.10
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				9.51	2.17
Naphthalene				1.48	0.34
Benzene				0.00	0.00
Toluene				0.04	0.01
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				1.53	0.35

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA, MS
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried	542773	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	21.71	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	50
Total Hours:	400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	0.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	22.23	8.26
SO2 (2)	....	30.75	25.55
NOX	....	21.54	10.60
CO	....	18.25	6.05
VOC(less fugitive)	....	54.32	7.98
HAPs(Organics/VOC)	..........66.63	12.31	2.81
Naphthalene	....	3.97	0.91
HAP Metals	....	0.15	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

FACSIMILE TRANSMISSION

KOPPERS INDUSTRIES INC.
436 Seventh Avenue, K-1800
Pittsburgh, PA 15219

DATE: June 15, 1995

From. ~~TO:~~ Ron Murphey, Grenada, MS

TO ~~FROM:~~ Stephen T. Smith

NO. PAGES INCLUDING THIS PAGE: 1

FACS NO.: (412)227-2423
VOICE NO.: (412)227-2677

Subject: 1994 Emissions Report

In order for me to calculate actual emissions for 1994, please provide the following information for calendar year 1994 which I can then enter into the calculation spreadsheet.

Amount of wood burned in the boiler 30,269 tons

Amount of oil burned in oil boiler 35,058 gallons

Creosote treated ties volume 1,666,952 c.f. / + 134,471 CF. Sw ties
1,801,423

Creosote treated poles volume 149,476 c.f.

Penta treated wood volume 838,672 c.f.

Poles dried in kiln 542,773 c.f.

Est. number of days cyclone at mill used 50 days

Please fax this back to me. I will then fax info. to you to complete the annual report. Call if you have questions.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

MAJOR AIR POLLUTION SOURCE ANNUAL EMISSIONS REPORTING FORM

P.O. BOX 10385

JACKSON, MS 39289-0385

In accordance with Section 49-17-32, Mississippi Code of 1972, as amended, all sources which choose to base their Annual fee on actual emissions shall submit, by July 1 of each year, an inventory of emissions for the previous calendar year.

Calendar Year Reported: ______________ **MDEQ Facility ID #:** 0960 - 00012 **Date:** ______________ **SIC Code:** 2491

Facility Name: Koppers Industries, Inc.

Mailing Address: ______________ (Street or P.O. Box) ______________ (City) ______ (State) ______ (Zip)

Site Address: ______________ (Street Location) ______________ (City) ______________ (County)

Contact and Title: ______________ **Contact's Phone #:** ______________

(1) Pollutant	(2) Annual Allowable (Potential) Emission Rate (TPY)	(3) Actual Annual Emission Rate (TPY)
Particulate Matter (PM)	40.21	
SO2	157.81	
NOX	47.74	
CO	29.37	
VOC*	18.88	
LEAD	0.0008	
TRS	0	
Total HAPs (Voc)	0	
Total HAPs (Non-Voc)	0	
CFCs/HCFCs	0	
Other	0	

* Reflects Total VOC from the facility including VOCs that are HAPs.

Attach calculations, monitoring data, measurements, etc. from which actual emission rates were determined. Actual emission rates will not be accepted unless the method of calculation is attached.

I, the undersigned, am the owner or authorized representative of the facility described on this fee form. I certify that the statements and calculations made on this form are complete and accurate to the best of my knowledge.

______________________________ Signature and Title

______________ Date

KOPPERS INDUSTRIES INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Reported in Section	Control	Emis. Included With No.
01	Wood Fired Boiler	D	Multiclone	
02	Creosote Tank Car Unloading	E		05
03	Creosote Storage Tank	H		05
04	Creosote Work Tanks (4)	H		05
05	Creosote Treating Cylinders (3)	E		
06	Creosote Blowdown Tank	H		05
07	Creosote Vacuum Pumps	E		05
08	Creosote Treated Wood Storage	E		
09	Creosote Fugitives from pumps, valves, flanges, and sumps	E		05
10	PCP Truck Unloading	Negligible		
11	PCP Concentrate Storage	H		05
12	PCP Mix Tank	Not Used		
13	PCP Work Tanks (2)	H		05
14	PCP Treating Cylinders (2)	E		05
15	PCP Blowdown Tanks (2)	E		05
16	PCP Vacuum Pump	E		05
17	PCP Treated Wood Storage	E		
18	PCP Process Fugitives from pumps, valves, flanges, sumps	E		05
19	Storm Water Tank	H		05
20	Waste Water Surge Tank	H		05

KOPPERS INDUSTRIES INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Reported in Section	Control	Emis. Included With No.
21	API Separator	E		05
22	Primary PCP Oil/Water Separator	E		05
23	Second PCP Oil/Water Separator	E		05
24	Reclaim Oil Dehydrators (2)	H		05
25	Waste Water Biologial Trmt.	Negligible		
26	Oil Fired Boiler (Backup)	D		
27	Tie Mill	E	Cyclone	
28	Fugitive Road Dust	E		
29	#2 Oil Storage Tank	H		05
30	Oil Storage Tank	H		05
31	Decant Tanks	H		05
32	Pole Kiln	E		

APPLICATION FOR
SYNTHETIC MINOR
OPERATING PERMIT

KOPPERS INDUSTRIES, INC.
TIE PLANT, MS

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone (412) 227-2001
Fax (412) 227-2423

via Express Mail

March 31, 1995

Air Permitting Branch
Office of Pollution Control
Mississippi Dept. of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

RE: **APPLICATION FOR SYNTHETIC MINOR OPERATING PERMIT FOR KOPPERS INDUSTRIES, INC., TIE PLANT, MS FACILITY NO. 0960-00012**

Dear Sir or Madam:

Enclosed is an Application for a Synthetic Minor Operating Permit for the Koppers Industries, Inc. (Koppers) wood preserving plant located in Tie Plant, MS. There are many identifiable point and fugitive sources at the plant, many of which have been combined for reporting purposes. I would like to explain some parts of this application package.

For clarity in reviewing this application, I first call your attention to the Flow Diagram and to the table following this letter titled Summary of Emission Points. The Source No. for each source on the table corresponds to the source numbers (circled) on the Diagram. The right column of the table indicates where emissions for sources for which emissions are combined and reported with another source are reported.

Next, note pages beginning at the tab for Emission Calculation Tables. The first table is titled Emission Inventory Calculation. Following this table are a series of Emission Inventory Calculation tables. For each scenario, there are three pages of the calculation sheets which calculate and summarize plant wide estimated emissions for the conditions assumed under each scenario. The Estimated Actual Emissions scenario best represents current operating conditions. The Maximum Potential Emissions scenario represents the "potential to emit" level of operations assuming all equipment operates at full power 365 days per year without consideration of other practical considerations. Three scenarios are included presenting maximum operating conditions which maintain the plant within non-major emission levels. The Synthetic Maximum (Mixed) scenario assumes roughly the same business mix as currently exists, but increased to reasonably achievable levels of business. The other two are based on potential changed in business mix. The Synthetic Maximum (High Creo) scenario assumes no pentachlorophenol treatment and that all production is shifted to creosote treatment. The Synthetic Maximum (High Penta) scenario assumes very high demand for pentachlorophenol treated poles causing one of the three creosote treating cylinders to be converted to pentachlorophenol treatment with reasonably high creosote treatment volumes continuing in the remaining two cylinders. Koppers is seeking a permit which allows operations under either of these "Synthetic Maximum" scenarios to maintain the most possible operational flexibility.

Also note that this plant recently received a new state operating permit. The unit specific Proposed Allowable Emissions stated in Section D are the same as in the existing permit.

I have tried to make this application clear and complete, but expect questions will arise. Koppers will welcome the opportunity to meet with your staff as the permit is being drafted. Please call me at (412)227-2677 if you have questions.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Ron Murphey, Grenada Plant, Tie Plant, MS (UPS Next Day)

cc w/o attachment:
W. R. Donley, K-2050
R. D. Collins, K-1701

KOPPERS INDUSTRIES INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Reported in Section	Control	Emis. Included With No.
01	Wood Fired Boiler	D	Multiclone	
02	Creosote Tank Car Unloading	E		05
03	Creosote Storage Tank	H		05
04	Creosote Work Tanks (4)	H		05
05	Creosote Treating Cylinders (3)	E		
06	Creosote Blowdown Tank	H		05
07	Creosote Vacuum Pumps	E		05
08	Creosote Treated Wood Storage	E		
09	Creosote Fugitives from pumps, valves, flanges, and sumps	E		05
10	PCP Truck Unloading	Negligible		
11	PCP Concentrate Storage	H		05
12	PCP Mix Tank	Not Used		
13	PCP Work Tanks (2)	H		05
14	PCP Treating Cylinders (2)	E		05
15	PCP Blowdown Tanks (2)	E		05
16	PCP Vacuum Pump	E		05
17	PCP Treated Wood Storage	E		
18	PCP Process Fugitives from pumps, valves, flanges, sumps	E		05
19	Storm Water Tank	H		05
20	Waste Water Surge Tank	H		05

KOPPERS INDUSTRIES INC.
GRENADA, MS
SUMMARY OF EMISSION POINTS

Source No.	Source Name	Reported in Section	Control	Emis. Included With No.
21	API Separator	E		05
22	Primary PCP Oil/Water Separator	E		05
23	Second PCP Oil/Water Separator	E		05
24	Reclaim Oil Dehydrators (2)	H		05
25	Waste Water Biologial Trmt.	Negligible		
26	Oil Fired Boiler (Backup)	D		
27	Tie Mill	E	Cyclone	
28	Fugitive Road Dust	E		
29	#2 Oil Storage Tank	H		05
30	Oil Storage Tank	H		05
31	Decant Tanks	H		05
32	Pole Kiln	E		

STATE OF MISSISSIPPI
DEPT. OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL
P.O. BOX 10385
JACKSON, MS 39289-0385
(601) 961-5171

APPLICATION ADDENDUM FOR A SYNTHETIC MINOR OPERATING PERMIT

NOTE: This addendum should be affixed to the front of either the Application for Title V Air Pollution Control Permit to Operate Air Emissions Equipment or the Application for Air Pollution Control Permit to Construct and/or Operate Air Emissions Equipment. If the Application for Title V Air Pollution Control Permit to Operate Air Emissions Equipment is used, then Sections M, N, and O of that application do not have to be completed.

A Synthetic Minor Source is defined in Regulation APC-S-2 as: Any facility which would otherwise constitute a major source under Commission Regulation APC-S-6, "Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act", except that the owner or operator of the facility elects for federally enforceable emissions limitations which may include permit conditions restricting hours of operation, or type or amount of material stored, combusted or processed, or establishing more stringent air pollution control efficiency requirements to lower allowable emissions for air pollutants in the State Permit to Operate below applicability thresholds for a Title V major source.

Facility Name Koppers Industries Inc.
Facility Number (If Known) 0960-00012
City Tie Plant County Grenada

List the limitations/restrictions you are proposing to make your facility a synthetic minor source and the proposed methods of demonstrating compliance with those limitations/restrictions. If necessary, use a separate page for each Emission Point.

Source 26 - Oil Fired Boiler

Oil Fired Boiler will not be operated at the same time as Source 01, Wood Fired Boiler, but will only operate to provide process steam when the other boiler is shut down for maintenance, repair, or modifications. This will limit sulfur dioxide emissions to less than major threshold.

Source 31 - Pole Kiln

Pole Kiln will only be used to dry up to 1,250,000 cubic feet of wood in any year to limit VOC emissions from this source to no more than 50 tons. Plant operating records will be maintained to show the cumulative amount of wood dried each calendar year.

Sources 05 and 08 - Wood Preserving Processes and Preservative Treated Wood Storage Fugitives (Includes multiple individual sources as indicated on Summary of Emission Points table.

The treating volumes indicated on the attached table Emissions Inventory Scenarios on lines 7, 8, and 9 will not exceed any of the "Synthetic Maximum" scenarios listed. The "Synthetic Maximum Mixed" scenario represents highest allowed volumes under current market conditions. The "High Creo" represents conditions if all production was shifted to creosote treatment and no pentachlorophenol treatment continued. The "High Penta" scenario represents conditions if the market demand for pentachlorophenol products was very high with most treating capacity being shifted to those products. Each calendar year, Koppers will commit to one scenario and cumulative records of treatment volume will be maintained to demonstrate compliance. The "Mixed" scenario will be default if no other one is declared. These limitations will assure that naphthalene emissions will not exceed 10 tons, that total hazardous air pollutants will not exceed 25 tons, and that total VOC emissions will not exceed 100 tons.

Randall D. Collins ______________ Date: March 31, 1995

FOR OFFICIAL USE ONLY	
APPLICATION RECEIPT DATE:	
APPLICATION NO.:	
FOR MODIFICATION	
MINOR	
SIGNIFICANT	

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL
AIR DIVISION
P.O. BOX 10385
JACKSON, MS. 39289-0385
PHONE NO.: (601) 961 - 5171

APPLICATION FOR TITLE V
AIR POLLUTION CONTROL PERMIT
TO OPERATE AIR EMISSIONS EQUIPMENT

PERMITTING ACTIVITY:

X INITIAL APPLICATION
___ MODIFICATION
___ RENEWAL OF OPERATING PERMIT

NAME: Koppers Industries Inc

CITY: Tie Plant

COUNTY: Grenada

FACILITY No. (if known): 0960-00012

APPLICATION FOR TITLE V PERMIT TO OPERATE AIR EMISSIONS EQUIPMENT

CONTENTS

Owners Information — Section B

1. Name, Address & Contact for the Owner/Applicant

   A. Company Name: Koppers Industries Inc

   B. Mailing Address:

      1. Street Address or P.O. Box: 436 Seventh Ave
      2. City: Pittsburgh 3. State: PA
      4. Zip Code: 15219
      5. Telephone No.: (412) 227-2677

   C. Contact:

      1. Name: Stephen Smith
      2. Title: Environmental Mgr.

2. Name, Address, Location and Contact for the Facility:

   A. Name: Koppers Industries Inc.

   B. Mailing Address:
      1. Street Address or P.O. Box: PO Box 160
      2. City: Tie Plant 3. State: MS
      4. Zip Code: 38960
      5. Telephone No.: (601) 226-4584

   C. Site Location:
      1. Street: Tie Plant Road
      2. City: Tie Plant 3. State: MS
      4. County: Grenada 5. Zip Code: 38960
      6. Telephone No.: ( ) Same

      Note: If the facility is located outside of the City limits, please attach a sketch or description to this application showing the approximate location of the site.

   D. Contact:

      1. Name: Ron Murphey
      2. Title: Plant Mgr.

3. SIC Code(s)(including any associated with alternate operating scenarios): 2491

4. Number of Employees: ____________________

5. Principal Product(s): Utility Poles & Rail Road Ties

6. Principal Raw Materials: Wood Poles, Lumber, Creosote, Pentachlorophenol & Oil

7. Principal Process(es): Wood Preserving

8. Maximum amount of principal product produced or raw material consumed per day: 16,000 CF.

9. Facility Operating Schedule:

   A. Specify maximum hours per day the operation will occur: 24

   B. Specify maximum days per week the operation will occur: 7

   C. Specify maximum weeks per year the operation will occur: 52

   D. Specify the months the operation will occur: All

10. Is this facility a small business as defined by the Small Business Act? No

11. **EACH APPLICATION MUST BE SIGNED BY THE APPLICANT.**

The application must be signed by a responsible official as defined in Regulation APC-S-6, Section I.A.26.

I certify that to the best of my knowledge and belief formed after reasonable inquiry, the statements and information in this application are true, complete, and accurate, and that, as a responsible official, my signature shall constitute an agreement that the applicant assumes the responsibility for any alteration, additions, or changes in operation that may be necessary to achieve and maintain compliance with all applicable Rules and Regulations.

Randall D. Collins
Printed Name of Responsible Official

V. P. & Secretary
Title

3/31/95
Date Application Signed

Signature of Applicants Responsible Official

EMISSIONS SUMMARY for the ENTIRE FACILITY

List below the total emissions for each pollutant from the entire facility. For stack emissions, use the maximum annual allowable (potential) emissions. For fugitive emissions, use the annual emissions calculated using the maximum operating conditions.

POLLUTANT Footnote 1	ANNUAL EMISSION RATE	
	lb/hr	tons/yr
See attached "Emission		
Inventory Calculation for		
Synthetic Minor Emission		
(High Creo Volume)"		

1. All regulated air pollutants,including hazardous air pollutants emitted from the entire facility should be listed. A list of regulated air pollutants has been provided in Section A.

With the exception of the emissions resulting from insignificant activities and emissions as defined in Regulation APC-S-6, Section VII, the pollutants listed above are all regulated air pollutants reasonably expected to be emitted from the facility.

SIGNATURE (must match signature on page 17)

For the sections listed below indicate the number that have been completed for each section as part of this application.

Section B 1
Section C 1
Section D 2
Section E ?
Section F ____
Section G ____
Section H 1
Section I ____
Section J ____
Section K ____

Section L1 ____
Section L2 2
Section L3 ____
Section L4 ____
Section L5 ____
Section L6 ____
Section L7 ____

Section M1 ____
Section M2 ____
Section M3 ____
Section M4 ____
Section M5 ____
Section M6 ____
Section M7 ____
Section M8 ____
Section N ____
Section O ____

As a minimum, sections B, C, M, N and O must be completed for the application to be considered complete.

Please list below all insignificant activities required by APC-S-6, Section VII.B that apply to your facility.

- Natural gas fired space heaters used for offices and shop.
- Gasoline & deesel fuel tanks used to store fuel for yard equipment. Constructed approx. 1980.
  Tank 25 Diesel #2 - 20,000 gal
  Tank 26 Gasoline - 1,000 gal.

RISK MANAGEMENT PLANS

If the source is required to develop and register a risk management plan pursuant to Section 112(r) of the Title III of the Clean Air Act, the permittee need only specify that it will comply with the requirement to register such a plan. The content of the risk management plan need not itself be incorporated as a permit term.

Please answer the following questions:

I. Are you required to develop and register a risk management plan pursuant to Section 112(r)?

_____ Yes __X__ No

Only if "yes", answer questions II., III., and/or IV.

II. Have you submitted the risk management plan to the appropriate agency (i.e. Mississippi Emergency Management Agency (MEMA), Federal Emergency Management Agency (FEMA), etc.)?

_____ Yes _____ No

III. If yes, give agency name and date submitted. ________________

IV. If no, provide a schedule for developing and submitting the risk management plan to the appropriate agency and providing our agency with certification that this submittal was made.

FUEL BURNING EQUIPMENT (page 1 of 2) SECTION D

1. Emission Point No. / Name: 01-Wood Fired Boiler

2. Equipment Description: Wellons 2 Cell Combustion System, Boiler, and Cogeneration Power Unit.

3. Was this unit constructed or modified after August 7, 1977? ______ Yes X No
If yes please give date and explain. ______

4. Rated Capacity: 37.5 MMBTU/hr 5. Type of burner: Fuel Cell

6. Usage Type (i.e. Space Heat, Process, etc.) : Process

7. Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

FUEL TYPE	HEAT CONTENT	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	ACTUAL YEARLY USAGE
Wood Waste	4,000 - 6,000 BTU/lb	0.11	5.0	8760 hr/yr	8424 Approx

8. Please list any fuel components that are hazardous air pollutants and the percentage in the fuel.
Pentachlorophenol - ~1%, Creosote ~15% Naphthalene ~2%

9. Operating Schedule: 24 hours/day 7 days/week 52 weeks/year

10. Stack Data:
A. Height: 80 FT
B. Inside diameter: 3 FT
C. Exit gas velocity: 55 F/s
D. Exit gas temperature: 350 °F

11. UTM Coordinates:
A. Zone ______ B. North ______ C. East ______

FUEL BURNING EQUIPMENT (page 2 of 2) SECTION D

12. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no*	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
01	Particulate	Y					0.3 gr/dscf	6.75	29.57
	PM 10						0.3 gr/dscf	6.75	29.57
	SO2							20.63	90.36
	NOx							6.57	28.73
	CO							5.63	24.64
	VOC							4.27	18.70

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other

FUEL BURNING EQUIPMENT (page 1 of 2) SECTION D

1. Emission Point No. / Name: 26- Oil Fired Boiler

2. Equipment Description: Backup service boiler.

3. Was this unit constructed or modified after August 7, 1977? ____ Yes X No
If yes please give date and explain. ____

4. Rated Capacity: 28.5 MMBTU/hr 5. Type of burner: Atomizing Oil

6. Usage Type (i.e. Space Heat, Process, etc.) : Process

7. Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

FUEL TYPE	HEAT CONTENT	% SULFUR	% ASH	MAXIMUM HOURLY USAGE	ACTUAL YEARLY USAGE
#2 Oil	18,000 BTU/lb	0.30	0	2000	336

8. Please list any fuel components that are hazardous air pollutants and the percentage in the fuel.
None

9. Operating Schedule: 24 hours/day 7 days/week 2 weeks/year

10. Stack Data:
A. Height: 36 Ft
B. Inside diameter: 2.5 Ft
C. Exit gas velocity: 32 Ft/sec
D. Exit gas temperature: 570 °F

11. UTM Coordinates:
A. Zone ____ B. North ____ C. East ____

FUEL BURNING EQUIPMENT (page 2 of 2)

SECTION D

12. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no*	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
26	Particulate Matter							.43	1.88
	PM 10							.43	1.88
	SO2							15.40	67.45
	NOx							4.34	19.01
	CO							1.08	4.73
	VOC							0.04	0.18

Note - This boiler will not operate at same time as source 01. This is for backup service only.

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section I. or manufacturers specifications if other

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 05-Wood Preserving Process

2. Process Description: Presure treatment of utility poles with pentachlorophenol or creosote and rail road ties with creosote.

3. Was this unit constructed or modified after August 7, 1977? ____ yes __X__ no
If yes please give date and explain. ____

4. Rated Capacity (tons/hr): NA

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Wood	342 CF	570	Upto 5,000,000 CF

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Treated Wood	342 CF	570 CF	Upto 5,000,000 CF

7. Stack Data: NA
   A. Height: ____
   B. Inside diameter: ____
   C. Exit gas velocity: ____
   D. Exit gas temperature: ____

8. UTM Coordinates:
   A. Zone ____
   B. North ____
   C. East ____

MANUFACTURING PROCESSES (page 2 of 2)

SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
05	See Emission	Inventory		Calculation		Tables.			
	VOC	N						6.0	26.25
	Naphthalene	N						1.0	4.5

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other.

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 08 · Treated Wood Storage

2. Process Description: Storage and handling of treated wood product following treatment and prior to shipment.

3. Was this unit constructed or modified after August 7, 1977? ______ yes X no
If yes please give date and explain. ______

4. Rated Capacity (tons/hr): NA

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Treated Poles			up to 3,500,000 CF *
Treated Ties			2,000,000 CF *
* Total Wood			less than 5,000,000

7. Stack Data: NA
A. Height: ______
B. Inside diameter: ______
C. Exit gas velocity: ______
D. Exit gas temperature: ______

8. UTM Coordinates:
A. Zone ______ B. North ______ C. East ______

MANUFACTURING PROCESSES (page 2 of 2)

SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
08	See Emission Inventory Calculation tables.								
	VOC (fugitive)*								
	Naphthalene							0.88	3.88

*VOC not applicable to major category when a fugitive.

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other.

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 27 - Tie Mill Cyclone

2. Process Description: Dust collection from trim saws at tie mill. Mill processes untreated ties prior to treatment.

3. Was this unit constructed or modified after August 7, 1977? ______ yes __X__ no
If yes please give date and explain. ______

4. Rated Capacity (tons/hr): ______

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Rough cut			
wood ties			2,000,000 CF

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Trimmed wood			
ties			2,000,000

7. Stack Data:
   A. Height: ______
   B. Inside diameter: ______
   C. Exit gas velocity: ______
   D. Exit gas temperature: Amb.

8. UTM Coordinates:
   A. Zone ______
   B. North ______
   C. East ______

MANUFACTURING PROCESSES (page 2 of 2) — SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
27	Particulate	Y						2.0	8.76
	PM 10	Y						2.0	8.76

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other.

MANUFACTURING PROCESSES (page 1 of 2) SECTION E

1. Emission Point No./ Name: 31 Pole Kiln

2. Process Description: Dry wood poles prior to preservative treatment.

3. Was this unit constructed or modified after August 7, 1977? ____ yes X no
If yes please give date and explain. ____

4. Rated Capacity (~~tons/hr~~): ~ 13,000 CF / Charge

5. Raw Material Input:

MATERIAL	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Green wood poles			1,250,000 CF

6. Product Output:

PRODUCT or BY-PRODUCT	QUANTITY/HR AVERAGE	QUANTITY/HR MAXIMUM	QUANTITY/YEAR
Dry wood poles			1,250,000 CF

7. Stack Data: NA
A. Height: ____
B. Inside diameter: ____
C. Exit gas velocity: ____
D. Exit gas temperature: ____

8. UTM Coordinates:
A. Zone ____
B. North ____
C. East ____

MANUFACTURING PROCESSES (page 2 of 2)

SECTION E

13. POLLUTANT EMISSIONS:

Emission rate calculations, monitoring data, or stack test data must be attached!

EMISSION POINT NO.	POLLUTANT (note 1)	CONTROL EQUIPMENT		ACTUAL EMISSION RATE			PROPOSED ALLOWABLE EMISSION RATE		
		yes/no *	effic.	note 2	lb/hr	tn/yr	note 2	lb/hr	tn/yr
31	VOC	N							50.

1. All regulated air pollutants including hazardous air pollutants emitted from this source should be listed. A list of regulated air pollutants has been provided in Section A.

2. Provide emission rate in units of applicable emission standard, e.g. lb/MMbtu, gr/dscf, etc. This may not apply to every emission point or every pollutant from an emission point.

* If yes, attach appropriate Air Pollution Control Data Sheet from Section L or manufacturers specifications if other.

TANK SUMMARY (page 1 of 2) SECTION H

1. Emission Point No./Name: All tank data included on "Tank Summary Table (Section H)"

2. Was this tank constructed or modified after August 7, 1977? ________ yes ________ no
If yes please give date and explain ________________________________

3. Product Stored: ________________________________
If more than one product is stored, provide the information in 4.A-E for each product.

4. Tank Data:

A. True Vapor Pressure at storage temperature: ________ psia/°F
B. Reid Vapor Pressure at storage temperature: ________ psia/°F
C. Density of product at storage temperature: ________ lb/gal
D. Molecular Weight of product vapor at storage temperature: ________ lb/lbmol
E. Throughput for most recent calendar year: ________ gal/yr
F. Tank Capacity: ________ gal
G. Tank Diameter: ________ feet
H. Tank Height / Length: ________ feet
I. Average Vapor Space Height: ________ feet
J. Tank Orientation: ________ Vertical or Horizontal
K. Type of Roof: ________ Dome or Cone
L. Is the Tank Equipped with a Vapor Recovery System? ________Yes ________No
If Yes, describe on separate sheet of paper and attach. Indicate efficiency.
M. Check the Type of Tank:
________ Fixed Roof ________ External Floating Roof
________ Pressure ________ Internal Floating Roof
________ Variable Vapor Space
________ Other, describe: ________________________________
N. Check the Closest City:
________ Jackson, MS ________ Birmingham, AL
________ Memphis, TN ________ Montgomery, AL
________ New Orleans, LA ________ Baton Rouge, LA
O Check the Tank Paint Color:
________ Aluminum Specular ________ Gray Light
________ Aluminum Diffuse ________ Gray Medium
________ Red ________ White
________ Other, describe: ________________________________
P. Tank Paint Condition: ________ Good or Poor
Q. Check Type of Tank Loading
1. Trucks and Rail Cars
________ Submerged Loading of clean cargo tank
________ Submerged Loading : Dedicated Normal Service
________ Submerged Loading : Dedicated Vapor Balance Service
________ Splash Loading of clean cargo tank
SpD Splash Loading : Dedicated Normal Service
SpVB Splash Loading : Dedicated Vapor Balance Service
2. Marine Vessels
________ Submerged Loading: Ships
________ Submerged Loading: Barges

R. For External Floating Roof Tanks

1. Check the Type of Tank Seal:

Mechanical Shoe
- _______ Primary Seal Only
- _______ With Shoe-Mounted Secondary Seal
- _______ With Rim-Mounted Secondary Seal

Liquid Mounted Resilient Seal
- _______ Primary Seal Only
- _______ With Shoe-Mounted Secondary Seal
- _______ With Rim-Mounted Secondary Seal

Vapor Mounted Resilient Seal
- _______ Primary Seal Only
- _______ With Shoe-Mounted Secondary Seal
- _______ With Rim-Mounted Secondary Seal

2. Type of External Floating Roof: _______ Pontoon
   _______ Double-Deck

S. For Internal Floating Roof Tanks

1. Check the Type of Tank Seal:

Liquid Mounted Resilient Seal
- _______ Primary Seal Only
- _______ With Rim-Mounted Secondary Seal

Vapor Mounted Resilient Seal
- _______ Primary Seal Only
- _______ With Rim-Mounted Secondary Seal

2. Number of Roof Columns: _______
3. Length of Deck Seam _______ feet:
4. Area of Deck: _______ $feet^2$
5. Effective Column Diameter: _______ feet
6. Check the Type of Tank:
   - _______ Bolted with Column Supported Roof
   - _______ Welded with Column Supported Roof
   - _______ Bolted with Self-Supported Roof
   - _______ Welded with Self-Supported Roof

5. Emissions Summary

1. Breathing Loss: _______ lb/hr _______ TPY
2. Working Loss: _______ lb/hr _______ TPY
3. Total Emissions: _______ lb/hr _______ TPY

6. UTM Coordinates:

A. Zone _______ B. North _______ C. East _______

CYCLONES SECTION L2

1. Emission Point No. / Name: 01 Multiclone

2. Manufacturers Name and Model No.: Wellons Multiclone Collector

3. Date of construction for existing sources or date of anticipated start-up for new sources: 1972

4. Cyclone Data:

a) Cyclone type (if more than 1, put total number) :

____ Simple ____ Potbellied

____ High Efficiency X Multiclone

b) Efficiency: 90 %

c) Pollutant viscosity: ____ poise

d) Flow Rate: ____ acfm

e) Pollutant size entering cyclone: ____ microns

f) Pressure drop: ____ inches H_2O

g) Baffles or Louvers (specify): ____

h) Cyclone dimensions:

Inlet: ____ ft

Outlet: ____ ft

Body diameter: ____ ft

Body height: ____ ft

Cone height: ____ ft

i) Wet spray: ____ Yes X No

1. No. of Nozzles: ____
2. Type of liquid used: ____
3. Flow rate: ____ gpm
4. Make-up rate: ____ gpm
5. % recycled: ____ %

j) Fan location:

1. Downstream: ____ Direct emission
   ____ Auxiliary Stack
2. Upstream: X No cap (vertical emissions)
   ____ Fixed cap (diffuse emissions)
   ____ Wind respondent cap (horizontal emissions)

5. Which process(es) does the cyclone(s) control emissions from? Wood Fired Boiler Source 01.

6. Attach a diagram of the cyclone(s) used.

CYCLONES

SECTION L2

1. Emission Point No. / Name: 27 - Tie Mill Cyclone

2. Manufacturers Name and Model No.: Unk.

3. Date of construction for existing sources or date of anticipated start-up for new sources: Unk.

4. Cyclone Data:

a) Cyclone type (if more than 1, put total number) :

X Simple ___ Potbellied
___ High Efficiency ___ Multiclone

b) Efficiency: ___ %

c) Pollutant viscosity: ___ poise

d) Flow Rate: ___ acfm

e) Pollutant size entering cyclone: ___ microns

f) Pressure drop: ___ inches H_2O

g) Baffles or Louvers (specify): ___

h) Cyclone dimensions:
Inlet: 0.83 ft
Outlet: 0.83 ft
Body diameter: 4.0 ft
Body height: 3.0 ft
Cone height: 4.5 ft

i) Wet spray: ___ Yes X No
1. No. of Nozzles: ___
2. Type of liquid used: ___
3. Flow rate: ___ gpm
4. Make-up rate: ___ gpm
5. % recycled: ___ %

j) Fan location:
1. Downstream: ___ Direct emission
___ Auxiliary Stack
2. Upstream: ___ No cap (vertical emissions)
___ Fixed cap (diffuse emissions)
___ Wind respondent cap (horizontal emissions)

5. Which process(es) does the cyclone(s) control emissions from? Sawdust and cuttings from adzing and boring of cross ties.

6. Attach a diagram of the cyclone(s) used.

EMISSIONS INVENTORY SCENARIOS
KOPPERS INDUSTRIES, INC. - GRENADA, MS

	VARIABLE	SCENARIOS				
		EST. ACTUAL	MAXIMUM POTENTIAL	SYNTHETIC MAXIMUM (HIGH CREO)	SYNTHETIC MAXIMUM (HIGH PENTA)	SYNTHETIC MAXIMUM (MIXED)
1	Wood Burned (tn/yr)	37580	37580	37580	37580	37580
2	Wood Fuel Sulfur (%)	0.11	0.11	0.11	0.11	0.11
3						
4	Fuel Oil Burned (MGal/yr)	104.8	2190	500	500	500
5	Fuel Oil Sulfur (%)	0.5	0.5	0.5	0.5	0.5
6						
7	Creo Treated Ties (cf)	700000	2000000	2000000	1500000	1800000
8	Creo Treated Poles (cf)	500000	1500000	1500000	500000	1000000
9	Penta Treated Wood (cf)	1500000	2000000	0	3000000	2000000
10	Kiln Dried Poles(cf)	1000000	1600000	1250000	1250000	1250000
11	Cyclone Days/Yr	160	300	300	200	200
12	Treating Volume Factor	1	1.5	1.5	1.5	1.5

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
ESTIMATED ACTUAL EMISSIONS

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37580 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 104.8 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.10	0.50
SO2	71	lb/MGal	AP-42	3.72	17.75
NOX	20	lb/MGal	AP-42	1.05	5.00
CO	5	lb/MGal	AP-42	0.26	1.25
VOC	0.2	lb/MGal	AP-42	0.01	0.05

Number of days boiler assumed to operate is 17

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
ESTIMATED ACTUAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	700000	C. F.
Creosote Poles	500000	C. F.
Total Creosote Wood	1200000	C. F.
Oil/Penta Poles	1500000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr|ave)
Creosote (VOC)	0.015	lb/cf	Form R	9.00	2.05
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	1.98	0.45
Biphenol	0.16	% in vapor	Calculation	0.01	0.00
Cresols	0.46	% in vapor	Calculation	0.04	0.01
Dibenzofurans	0.61	% in vapor	Calculation	0.05	0.01
Naphthalene	17	% in vapor	Calculation	1.53	0.35
P-Xylenes	4.5	% in vapor	Calculation	0.41	0.09
Phenol	1.4	% in vapor	Calculation	0.13	0.03
Quinoline	1.5	% in vapor	Calculation	0.14	0.03
Toluene	26	% in vapor	Calculation	2.34	0.53
TOTAL CREO. HAP	73.63	% in vapor		6.63	1.51
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.02	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	7.50	1.71
TOTAL VOC				16.52	3.77

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr|ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	1.49	0.34
Naphthalene	1.37E-03	lb/cf	FR Test	0.48	0.11
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.01	0.00
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	2.88	0.66
Naphthalene	3.34E-03	lb/cf	FR Test	0.84	0.19
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.04	0.01
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	8.63	1.97
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				12.99	2.96
Naphthalene				1.31	0.30
Benzene				0.00	0.00
Toluene				0.05	0.01
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				1.37	0.31

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
ESTIMATED ACTUAL EMISSIONS

31-DRY KILNS

Poles Dried 1000000 C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	40.00	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	160
Total Hours:	1280

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	1.28	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1	=Trtng volume factor
p=no. wet days/year=	110	days	70200	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	70200	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	186.00	127

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	28.44	8.26
SO2 (2)	....	84.33	34.91
NOX	....	27.35	10.60
CO	....	22.81	6.05
VOC(less fugitive)	....	73.63	7.46
HAPs(Organics/VOC)	....	8.01	1.83
Naphthalene	....	2.84	0.65
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
MAXIMUM POTENTIAL EMISSIONS

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37580 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 2190 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	2.19	0.50
SO2	71	lb/MGal	AP-42	77.75	17.75
NOX	20	lb/MGal	AP-42	21.90	5.00
CO	5	lb/MGal	AP-42	5.48	1.25
VOC	0.2	lb/MGal	AP-42	0.22	0.05

Number of days boiler assumed to operate is 365

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
MAXIMUM POTENTIAL EMISSIONS

05-WOOD PRESERVING PROCESSES

Creosote Ties	2000000	C. F.
Creosote Poles	1500000	C. F.
Total Creosote Wood	3500000	C. F.
Oil/Penta Poles	2000000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote (VOC)	0.015	lb/cf	Form R	26.25	5.99
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	5.78	1.32
Biphenol	0.16	% in vapor	Calculation	0.04	0.01
Cresols	0.46	% in vapor	Calculation	0.12	0.03
Dibenzofurans	0.61	% in vapor	Calculation	0.16	0.04
Naphthalene	17	% in vapor	Calculation	4.46	1.02
P-Xylenes	4.5	% in vapor	Calculation	1.18	0.27
Phenol	1.4	% in vapor	Calculation	0.37	0.08
Quinoline	1.5	% in vapor	Calculation	0.39	0.09
Toluene	26	% in vapor	Calculation	6.83	1.56
TOTAL CREO. HAP	73.63	% in vapor		19.33	4.41
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.03	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	10.00	2.28
TOTAL VOC				36.28	8.27

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	4.25	0.97
Naphthalene	1.37E-03	lb/cf	FR Test	1.37	0.31
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.04	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	8.63	1.97
Naphthalene	3.34E-03	lb/cf	FR Test	2.51	0.57
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.11	0.03
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	11.50	2.62
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				24.38	5.56
Naphthalene				3.88	0.88
Benzene				0.00	0.00
Toluene				0.15	0.03
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				4.03	0.92

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
MAXIMUM POTENTIAL EMISSIONS

31-DRY KILNS

Poles Dried 1600000 C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	64.00	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	300
Total Hours:	2400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	2.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	31.65	8.26
SO2 (2)	....	158.35	34.91
NOX	....	48.21	10.60
CO	....	28.02	6.05
VOC(less fugitive)	....	117.59	11.96
HAPs(Organics/VOC)	....	23.38	5.33
Naphthalene	....	8.34	1.90
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37580 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 500 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.50
SO2	71	lb/MGal	AP-42	17.75	17.75
NOX	20	lb/MGal	AP-42	5.00	5.00
CO	5	lb/MGal	AP-42	1.25	1.25
VOC	0.2	lb/MGal	AP-42	0.05	0.05

Number of days boiler assumed to operate is 83

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

05-WOOD PRESERVING PROCESSES

Creosote Ties	2000000	C. F.
Creosote Poles	1500000	C. F.
Total Creosote Wood	3500000	C. F.
Oil/Penta Poles	0	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote (VOC)	0.015	lb/cf	Form R	26.25	5.99
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	5.78	1.32
Biphenol	0.16	% in vapor	Calculation	0.04	0.01
Cresols	0.46	% in vapor	Calculation	0.12	0.03
Dibenzofurans	0.61	% in vapor	Calculation	0.16	0.04
Naphthalene	17	% in vapor	Calculation	4.46	1.02
P-Xylenes	4.5	% in vapor	Calculation	1.18	0.27
Phenol	1.4	% in vapor	Calculation	0.37	0.08
Quinoline	1.5	% in vapor	Calculation	0.39	0.09
Toluene	26	% in vapor	Calculation	6.83	1.56
TOTAL CREO. HAP	73.63	% in vapor		19.33	4.41
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.00	0.00
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	0.00	0.00
TOTAL VOC				26.25	5.99

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr/ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	4.25	0.97
Naphthalene	1.37E-03	lb/cf	FR Test	1.37	0.31
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.04	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	8.63	1.97
Naphthalene	3.34E-03	lb/cf	FR Test	2.51	0.57
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.11	0.03
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	0.00	0.00
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				12.88	2.94
Naphthalene				3.88	0.88
Benzene				0.00	0.00
Toluene				0.15	0.03
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				4.03	0.92

SYNTHETIC MINOR EMISSION (HIGH CREO VOL.)

31-DRY KILNS

Poles Dried	1250000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	50.00	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	300
Total Hours:	2400

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	2.40	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	29.96	8.26
SO2 (2)	....	98.36	34.91
NOX	....	31.31	10.60
CO	....	23.80	6.05
VOC(less fugitive)	....	93.40	9.68
HAPs(Organics/VOC)	....	23.36	5.33
Naphthalene	....	8.34	1.90
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSION (HIGH PENTA VOL.)

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37580 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 500 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.50
SO2	71	lb/MGal	AP-42	17.75	17.75
NOX	20	lb/MGal	AP-42	5.00	5.00
CO	5	lb/MGal	AP-42	1.25	1.25
VOC	0.2	lb/MGal	AP-42	0.05	0.05

Number of days boiler assumed to operate is 83

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSION (HIGH PENTA VOL.)

05-WOOD PRESERVING PROCESSES

Creosote Ties	1500000	C. F.
Creosote Poles	500000	C. F.
Total Creosote Wood	2000000	C. F.
Oil/Penta Poles	3000000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote (VOC)	0.015	lb/cf	Form R	15.00	3.42
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	3.30	0.75
Biphenol	0.16	% in vapor	Calculation	0.02	0.01
Cresols	0.46	% in vapor	Calculation	0.07	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.09	0.02
Naphthalene	17	% in vapor	Calculation	2.55	0.58
P-Xylenes	4.5	% in vapor	Calculation	0.68	0.15
Phenol	1.4	% in vapor	Calculation	0.21	0.05
Quinoline	1.5	% in vapor	Calculation	0.23	0.05
Toluene	26	% in vapor	Calculation	3.90	0.89
TOTAL CREO. HAP	73.63	% in vapor		11.04	2.52
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.04	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	15.00	3.42
TOTAL VOC				30.04	6.85

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.19	0.73
Naphthalene	1.37E-03	lb/cf	FR Test	1.03	0.23
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	2.88	0.66
Naphthalene	3.34E-03	lb/cf	FR Test	0.84	0.19
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.04	0.01
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	17.25	3.93
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				23.31	5.32
Naphthalene				1.86	0.42
Benzene				0.00	0.00
Toluene				0.06	0.01
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				1.93	0.44

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSION (HIGH PENTA VOL.)

31-DRY KILNS

Poles Dried	1250000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	50.00	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	200
Total Hours:	1600

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	1.60	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	29.16	8.26
SO2 (2)	....	98.36	34.91
NOX	....	31.31	10.60
CO	....	23.80	6.05
VOC(less fugitive)	....	97.19	10.54
HAPs(Organics/VOC)	....	13.01	2.97
Naphthalene	....	4.41	1.01
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSIONS (MIXED)

01-BOILER, WOOD FIRED Sulfur in wood fuel= 0.11 %

Wood Burned (tn/yr): 37580 (lb/hr): 8000

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	1.44	lb/tn	5/88 Test	27.06	5.76
SO2	4.29	lb/tn	AP-42&Cal.	80.61	17.16
NOX	1.4	lb/tn	FR Test	26.31	5.60
CO	1.2	lb/tn	FR Testx2	22.55	4.80
VOC	0.91	lb/tn	FR Test	17.10	3.64
Arsenic	8.8E-05	lb/tn	AP-42	0.0017	0.000
Cadmium	1.7E-05	lb/tn	AP-42	0.0003	0.000
Chromium	1.3E-04	lb/tn	AP-42	0.0024	0.001
Lead	3.1E-04	lb/tn	AP-42	0.0058	0.001
Manganese	8.9E-03	lb/tn	AP-42	0.1672	0.036
Nickel	5.6E-04	lb/tn	AP-42	0.0105	0.002
Selenium	1.8E-05	lb/tn	AP-42	0.0003	0.000
Mercury	6.5E-06	lb/tn	AP-42	0.0001	0.000
Total HAP Metals				0.19	0.040

26-BOILER, FUEL OIL Fuel Use Rate(MGal/hr) 0.25

Oil Burned(MGal/yr): 500 Sulfur Content: 0.500 %

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/MGal	AP-42	0.50	0.50
SO2	71	lb/MGal	AP-42	17.75	17.75
NOX	20	lb/MGal	AP-42	5.00	5.00
CO	5	lb/MGal	AP-42	1.25	1.25
VOC	0.2	lb/MGal	AP-42	0.05	0.05

Number of days boiler assumed to operate is 83

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSIONS (MIXED)

05-WOOD PRESERVING PROCESSES

Creosote Ties	1800000	C. F.
Creosote Poles	1000000	C. F.
Total Creosote Wood	2800000	C. F.
Oil/Penta Poles	2000000	C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote (VOC)	0.015	lb/cf	Form R	21.00	4.79
HAPs contained in creosote:					
Benzene	22	% in vapor	Calculation	4.62	1.05
Biphenol	0.16	% in vapor	Calculation	0.03	0.01
Cresols	0.46	% in vapor	Calculation	0.10	0.02
Dibenzofurans	0.61	% in vapor	Calculation	0.13	0.03
Naphthalene	17	% in vapor	Calculation	3.57	0.81
P-Xylenes	4.5	% in vapor	Calculation	0.95	0.22
Phenol	1.4	% in vapor	Calculation	0.29	0.07
Quinoline	1.5	% in vapor	Calculation	0.32	0.07
Toluene	26	% in vapor	Calculation	5.46	1.24
TOTAL CREO. HAP	73.63	% in vapor		15.46	3.53
Pentachlorophenol (VOC)	2.54E-05	lb/cf	Form R	0.03	0.01
#6 Oil (VOC)	1.0E-02	lb/cf	Engr. Est.	10.00	2.28
TOTAL VOC				31.03	7.07

08-PRESERVATIVE TREATED WOOD STORAGE FUGITIVES

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr ave)
Creosote Ties					
Creosote (VOC)	4.25E-03	lb/cf	FR Test	3.83	0.87
Naphthalene	1.37E-03	lb/cf	FR Test	1.23	0.28
Benzene	1.74E-06	lb/cf	FR Test	0.00	0.00
Toluene	3.54E-05	lb/cf	FR Test	0.03	0.01
Creosote Poles					
Creosote (VOC)	1.15E-02	lb/cf	FR Test	5.75	1.31
Naphthalene	3.34E-03	lb/cf	FR Test	1.67	0.38
Benzene	4.23E-06	lb/cf	FR Test	0.00	0.00
Toluene	1.52E-04	lb/cf	FR Test	0.08	0.02
Penta Poles					
Oil (VOC, est. as creo)	1.15E-02	lb/cf	FR Test	11.50	2.62
Pentachlorophenol	unk.	lb/cf	FR Test	0.00	0.00
Totals					
VOC				21.08	4.81
Naphthalene				2.90	0.66
Benzene				0.00	0.00
Toluene				0.11	0.02
Pentachlorophenol				0.00	0.00
HAP Organics (Total)				3.01	0.69

EMISSION INVENTORY CALCULATION
KOPPERS INDUSTRIES, INC. - GRENADA
SYNTHETIC MINOR EMISSIONS (MIXED)

31-DRY KILNS

Poles Dried 1250000 C. F.

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
VOC	0.08	lb/cf	Alabama	50.00	unk.

27-CYCLONES FOR WOOD MILLING

Number of Cyclones:	1
Ave. Hours/Day:	8
Ave Days/Yr Each:	200
Total Hours:	1600

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)
Particulate	2	lb/hr	AP-42	1.60	2

28-YARD ROADS FUGITIVE PARTICULATES

E=k(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5(365-p)/365 lb/VMT

k=particle size factor=	1.00		6	=No. vehicles driving
s=silt content (%) of road=	10	%	15	=Typ. miles/hr driving
S=mean vehicle speed=	15	mph	2.5	=Typ. hrs driving/day
W=mean vehicle weight=	15	tons	6	=Typ. d/wk driving
w=mean no. of wheels=	4	wheels	1.5	=Trtng volume factor
p=no. wet days/year=	110	days	105300	=Ann veh mi. traveled
VMT=Veh. Mi. Traveled=	105300	VMT		

Pollutant	Emission Factor	Units	Basis	Estimated (tn/yr)	Emissions (lb/hr)(1)
Particulate	5.30	lb/VMT	AP-42	278.99	191

(1) Hourly based on 365 days, 8 hours per day

TOTAL PLANT EMISSIONS

Pollutant		Estimated (tn/yr)	Emissions (lb/hr)
Particulate (less fugitive)	....	29.16	8.26
SO2 (2)	....	98.36	34.91
NOX	....	31.31	10.60
CO	....	23.80	6.05
VOC(less fugitive)	....	98.17	10.76
HAPs(Organics/VOC)	....	18.50	4.22
Naphthalene	....	6.47	1.48
HAP Metals	....	0.19	0.04

(2) Assumes backup boiler operating at same time as primary for number of days shown.

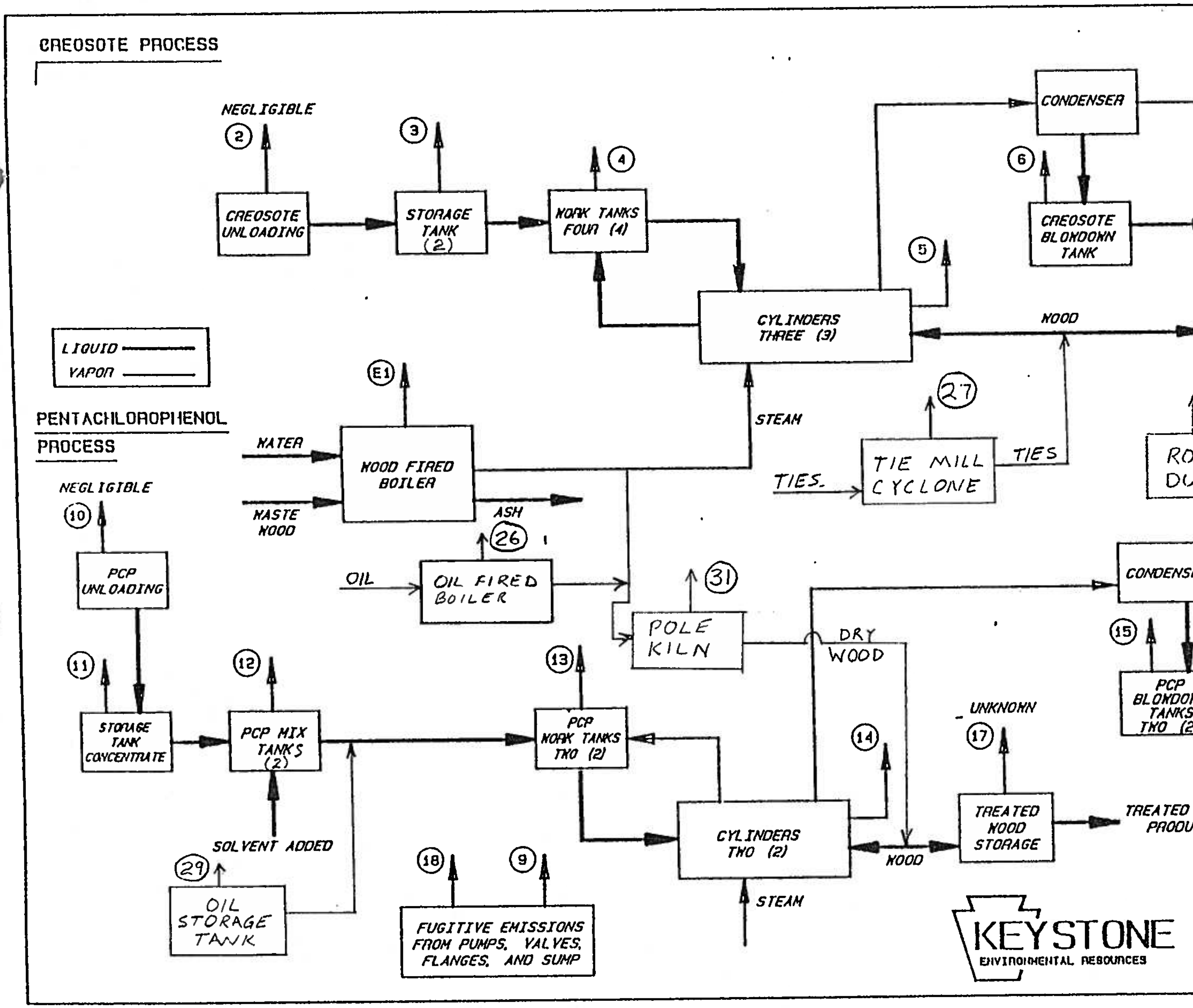
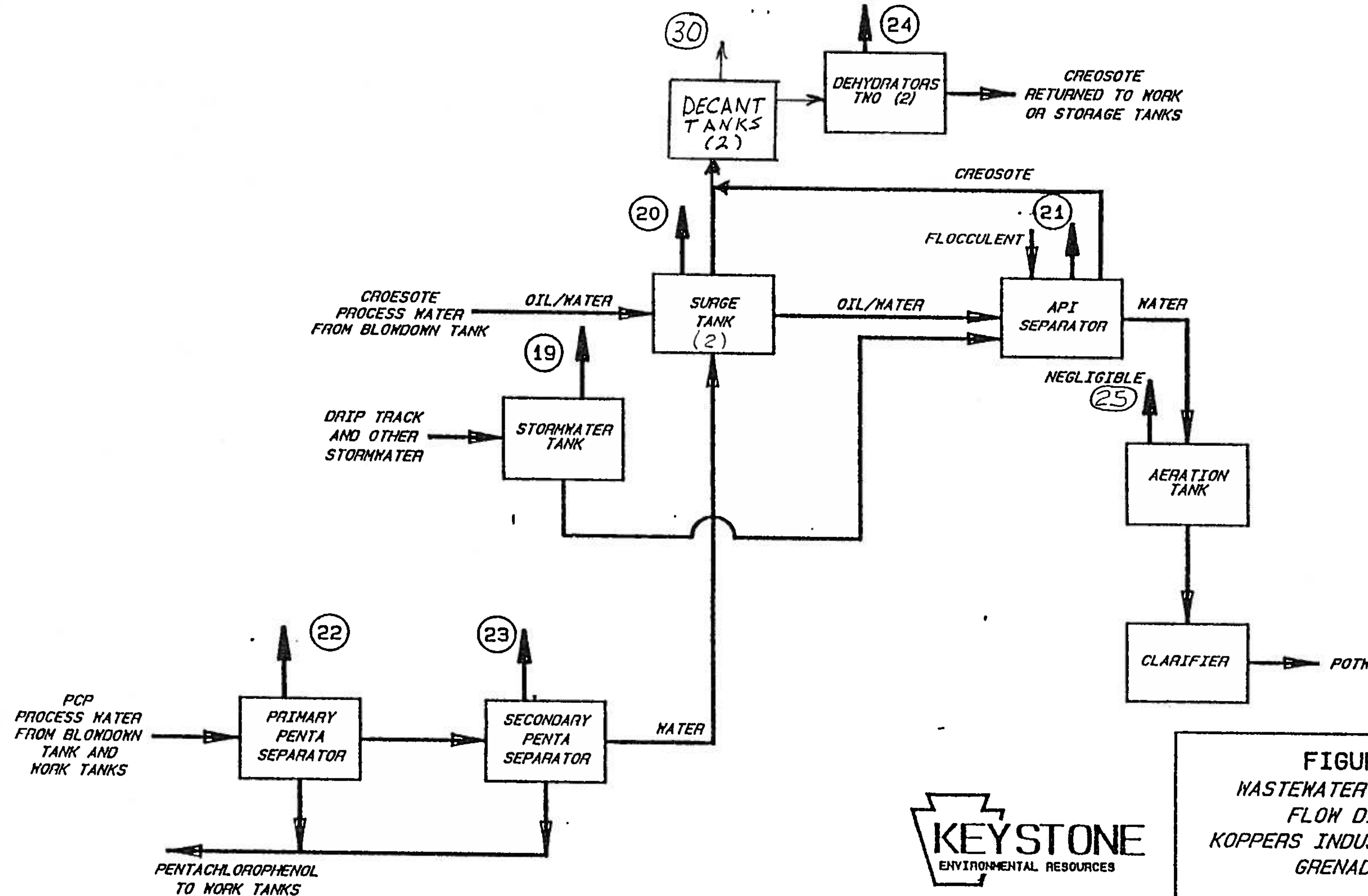


FIGURE 1
CREOSOTE AND PENTACHLOROPHENOL (PCP) WOOD TREATMENT PROCESS FLOW DIAGRAM
KOPPERS INDUSTRIES, INC.
GRENADA, MS

11/17/92 C69370

REVISED 3/30/95 SJ



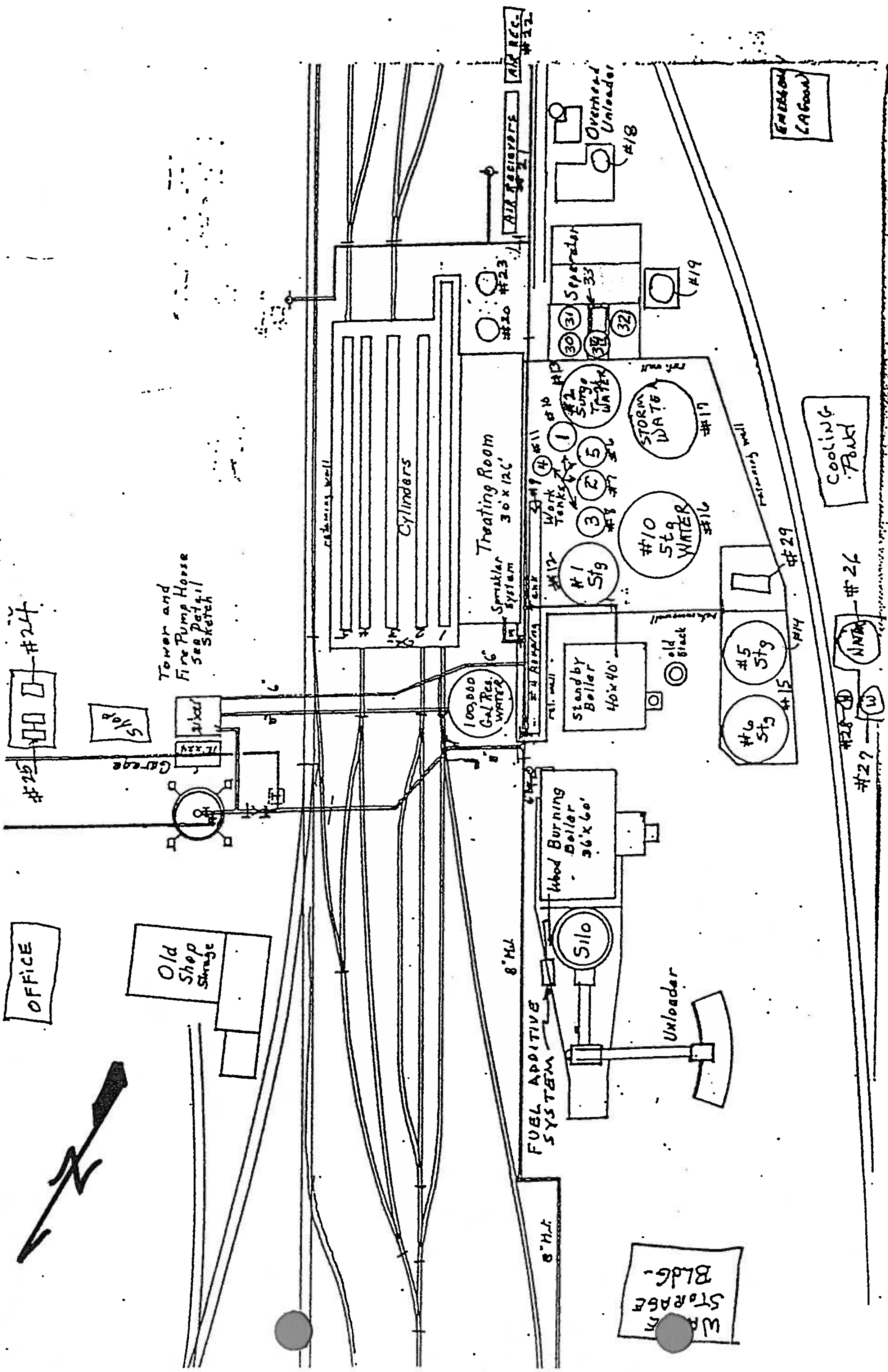
KEYSTONE
ENVIRONMENTAL RESOURCES

FIGURE 2
WASTEWATER TREATMENT
FLOW DIAGRAM
KOPPERS INDUSTRIES, INC.
GRENADA, MS

11/17/92

C69371

REVISED 3/30/95 STS



SITE PLAN
FIGURE 1

TABLE 3.1 - TANK LISTINGS
Koppers Industries, Grenada Plant

Reference No.	Name	Contents	Capacity
1.	#1 Cylinder	Creosote	34,000
2.	#2 Cylinder	Creosote 60/40	27,000
3.	#3 Cylinder	Steam Conditioning	27,000
4.	#4 Cylinder	Creosote #1	27,000
5.	#5 Cylinder	Oil Borne Treatment	27,000
6.	#1 Work Tank	Penta in Oil	30,000
7.	#2 Work Tank	Creosote 60/40	30,000
8.	#3 Work Tank	Creosote	30,000
9.	#4 Work Tank	Creosote #1	22,420
10.	#1 2nd Decant Tank	Creosote/Water	30,000
11.	Measuring Tank	Creosote #1	4,200
12.	#1 Storage Tank	Creosote #1	100,000
13.	#2 Surge Tank	Process Water	100,000
14.	#5 Storage Tank	Fuel Oil	100,000
15.	#6 Storage Tank	Creosote 60/40	105,000
16.	#10 Surge Tank	Process Water	300,000
17.	Storm Water Surge	Storm Water	250,000
18.	Coagulant	Dearfloc 4301	2,500
19.	Dehydrator	Creo/Oil/Water	50,000
20.	Creo Blowdown Tank	Water/Creosote	10,000
21.	Air Receivers	Compressed Air	
22.	Air Receivers	Compressed Air	
23.	Penta Blowdown Tank	Water/Penta/Oil	10,000
24.	Gas Tank	Gasoline	1,000
25.	Fuel Oil #2	Fuel Oil	20,000
26.	Water Treatment Tank	Water	150,000
27.	Water Treatment Tank	Water	25,000
28.	Water Treatment Tank	Water	10,000
29.	Creosote Dehydrator	Not in Use	4,000
30.	N. Penta Equilization	Water/Oil/Penta	14,000
31.	S. Penta Equilization	Water/Oil/Penta	14,000
32.	Penta Mix Tank	Oil/Penta	9,400
33.	Penta Mix Tank	Oil/Penta	6,600
34.	Penta Concentrate St.	Penta Concentrate	8,800

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		13	4	4	4	30	4	3
Reference No.(Table 3.1)		Tank 6	Tank 7	Tank 8	Tank 9	Tank 10	Tank 11	Tank 12
Name		Wk Tk 5	Wk Tk 2	Wk Tk 3	WT 4 H	WT 1	WT 4 V	Storage
2. Construction Date								
3. Material Stored		Oil/Penta	P2Creosote	P2Creosote	P1Creosote	Water/Creo	P1Creosote	P1Creosote
4A.True Vapor Pressure a T.	psia							
4B. Reid Vapor Pres. at T.	psia							
Storage Temperature T	Deg. F	200	200	200	200	150	200	200
4C. Density at T	lb/gal	9.25	9.25	9.25	8.95	7.51	8.95	8.95
4D. Mol. Wt. at T	lb/lbmole							
4E. Throughput	Gal/yr	10000000	8200000	8200000	6500000	11445000	740000	740000
4F. Tank Capacity	Gal.	29786	29786	29786	27622	29786	5212	119717
4G. Tank Diameter	Feet	13	13	13	6.66	13	6.66	29
4H. Tank Height/Length	Feet	30	30	30	106	30	20	24.23
4I.Ave. Vapor Space Height	Feet	1	1	1		1	1	10
4J. Tank Orientation (H or V)		V	v	v	h	v	v	v
4K. Type of Roof (D or C)		d	d	d		d	d	c
4L.Vapor Recovery Sys.?	Y or N	N	n	n	n	n	n	n
4M. Type of Tank? Fixed=F		F	f	f	f	f	f	f
4N. Closest City ?	Memphis							
4O. Tank Paint Color?		Black	black	black	Alum	Black	Black	Black
4P. Paint Condition (G or P)		P	p	p	p	p	p	p
4Q. Type Tank Loading (SpD or SpVB)		Bot.	Bot.	Bot.	Bot.	Bot.	Bot.	Bot.
4R. Not Applicable to any tanks								
4S. Not Applicable to any tanks								
5.1. Breathing Loss	lb/hr							
	TPY							
5.2. Working Loss	lb/hr							
	TPY							
5.3. Total Emissions	lb/hr							
	TPY							

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		20	29	3	20	19	24	6
Reference No.(Table 3.1)		Tank 13	Tank 14	Tank 15	Tank 16	Tank 17	Tank 19	Tank 20
Name		WW Stor.	Storage 5	Storage 6	Storage 10	Storm Wat	Decant	Creo BD
2. Construction Date							1988	
3. Material Stored		W Water	#2Diesel	P2Creosote	Proc.Water	StormWat.	Water/Creo	Water/Creo
4A.True Vapor Pressure a T.	psia							
4B. Reid Vapor Pres. at T.	psia							
Storage Temperature T	Deg. F	Amb.	60	120	60	60	150	150
4C. Density at T	lb/gal	8.34	7.1	9.25	9.25	8.34	8.34	8.34
4D. Mol. Wt. at T	lb/lbmole							
4E. Throughput	Gal/yr	1600000	127500	660000	1400000	2272000	230000	532000
4F. Tank Capacity	Gal.	95316	102789	105750	300518	274104	4512	8557
4G. Tank Diameter	Feet	26	27	30	40.17	36	8	10.2
4H. Tank Height/Length	Feet	24	24	20	31.7	36	12	14
4I.Ave. Vapor Space Height	Feet	1	10	12	15	10	2	12
4J. Tank Orientation (H or V)		v	v	v	v	v	v	v
4K. Type of Roof (D or C)		c	c	c	c	none	d	d
4L.Vapor Recovery Sys.?	Y or N	n	n	n	n		n	n
4M. Type of Tank? Fixed=F		f	f	f	f	open	f	f
4N. Closest City ?	Memphis							
4O. Tank Paint Color?		Black	Black	Black	Black	Blue	Black	Black
4P. Paint Condition (G or P)		p	p	p	p	g	p	p
4Q. Type Tank Loading (SpD or	SpVB)	Bot.	Bot.	Bot.	Bot.	SpD	SpD	SpD
4R. Not Applicable to any tanks								
4S. Not Applicable to any tanks								
5.1. Breathing Loss	lb/hr							
	TPY							
5.2. Working Loss	lb/hr							
	TPY							
5.3. Total Emissions	lb/hr							
	TPY							

TANK SUMMARY TABLE (Section H)

1. Emission Point Number		15	22	23	12	12	11
Reference No.(Table 3.1)		Tank 23	Tank 30	Tank 31	Tank 32	Tank 33	Tank 34
Name		Penta BD	N.Pen.Eq.	S.Pen.Eq.	Penta Mix	Penta Mix	Penta Conc
2. Construction Date							
3. Material Stored		Water/Oil	Oil/Water	Oil/Water	Oil/Penta	Oil/Penta	PentaConc.
4A.True Vapor Pressure a T.	psia						
4B. Reid Vapor Pres. at T.	psia						
Storage Temperature T	Deg. F	100	100	100	160	160	60
4C. Density at T	lb/gal	8.34	9	9	7.5	7.5	9.55
4D. Mol. Wt. at T	lb/lbmole						
4E. Throughput	Gal/yr	493000			850000	850000	120000
4F. Tank Capacity	Gal.	8641	14100	14100	9400	6662	8813
4G. Tank Diameter	Feet	10.25	10	10	10	9	10
4H. Tank Height/Length	Feet	14	24	24	16	14	15
4I.Ave. Vapor Space Height	Feet	12	5	5	1	1	5
4J. Tank Orientation (H or V)		v	v	v	v	h	v
4K. Type of Roof (D or C)		d	c	c		c	Flat
4L.Vapor Recovery Sys.?	Y or N	n	n	n	n	n	n
4M. Type of Tank? Fixed=F		f	f	f	f	f	f
4N. Closest City ?	Memphis						
4O. Tank Paint Color?		Black	Black	Black	Black	Black	Aluminum
4P. Paint Condition (G or P)		p	p	p	p	p	g
4Q. Type Tank Loading (SpD or SpVB)		SpD	SpD	SpD	Bot.	SpD	Bot.
4R. Not Applicable to any tanks							
4S. Not Applicable to any tanks							
5.1. Breathing Loss	lb/hr						
	TPY						
5.2. Working Loss	lb/hr						
	TPY						
5.3. Total Emissions	lb/hr						
	TPY						

Koppers Industries, Inc.
Pittsburgh, PA 15219

62-4
311

Location No. 477/240 Date 01/13/95 No. 229909

Pay to the order of $539.38
Not valid over $3500.00

Dept. of Environmental Quality
P.O. BOX 20325
Jackson, Ms. 39289-0325

Payable through Mellon Bank (DE) N.A., Wilmington, DE 19899
Mellon Bank (East) N.A., Philadelphia, PA 19102

KI 179 3/90 10M

⑈229909⑈ ⑆031100047⑆ 2⑈924 918⑈

General Ledger	Detail	Sub Detail	Location or Contract	Dept. or Orig. Loc.	Tax Codes	Emp. No.	Purchase Order No. Rec. Id.	Br.	P.O. No.	P.O. Add	P.O. Add or Resource	Quantity			Unit Code	Amount Distributed Dollars	Cents
300	391	54	0240		0232											539	.38

Vendor No.

Description

Environmental Fee

0960-00012

JAN 1995
RECEIVED
AS/BS
FEES
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

DEPT OF ENVIRONMENTAL QUALITY

P. O. Box 20325
Jackson, MS 39289-0325

** INVOICE **

* TITLE V AIR OPERATING PERMIT FEE *

BILL TO:
KOPPERS INDUSTRIES INC

P O BOX 160
TIE PLANT, MS 38960

INVOICE # 764
INVOICE DATE: 1/02/95

CONTACT PERSON: Cheryl Shelby
TELEPHONE: 601-961-5381

FACILITY I.D. # 0960-00012

TERMS: DUE 2/1/95

POLLUTANT	TOTAL TONS OF EMISSIONS	FEE PER TON OF EMISSIONS	TOTAL FEE
APPROVED TITLE V FEE $23.39 FOR 1/2 YEAR OR $11.695	57.640	11.695	674.10
RAMP UP FEE $4.00 FOR 1/2 YEAR OR $2.00	57.640	2.000	115.28
LESS: FEES PREVIOUSLY PAID			(250.00)
TOTAL APPROVED ANNUAL FEE DUE			539.38

The total tons shown above is the total of all pollutants for which you were previously billed. The maximum emission rate for each pollutant for purposes of fee calculation is 4,000 tons.

* * * FAILURE TO REMIT PAYMENT BY THE DUE DATE COULD * * *
* * RESULT IN SUBSTANTIAL PENALTY AND INTEREST CHARGES * *

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