GRENADA COUNTY - TIE PLANT MS
KOPPERS INC
0960-00012
1971-------1985

AI 00

KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI
WOOD FIRED BOILER
PERMIT RENEWAL TEST BURN

Prepared for:

KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
440 COLLEGE PARK DRIVE
MONROEVILLE, PENNSYLVANIA

PROJECT NO. 189200-00

JUNE 1988

1.0 INTRODUCTION

Koppers Company, Inc. undertook a trial burn program at its Grenada, Mississippi Tie Plant, wood treating plant during the week of May 2, 1988. This program tested emmissions from the wood fired boiler steam generation plant. The tests determined the destruction and removal efficiency (DRE) of principal organic hazardous constituents (POHC) of a blended process by-product used as a fuel additive. Other parameters evaluated as part of the program were opacity, particulate, and chloride emission rates. Also established was the relationship between the combustion zone temperature and DRE. The purpose of the program was to provide the Mississippi Department of Natural Resources (DNR), Bureau of Pollution Control, data on this temperature relationship and fulfill the permit obligation which requires source retest within three years of the permit issuance date.

The tests were performed by the Air Quality Engineering division (AQE) of Keystone Environmental Resources, Inc. The test team was comprised of Mark Grunebach, Vince Bouma, and Frank Paola. The Department of Natural Resources was represented by Ken Petre.

The results of the modified method 5 testing showed average total PAH emissions of 0.018 lb/hr with a creosote fuel additive feed rate of 400 lb/hr and 0.010 lb/hr with a creosote feed rate of 800 lb/hr. When burning pentachlorophenol in oil preservative (penta) analysis was performed for pentachlorophenol emissions (PCP) and an average emission rate of 0.00045 lb/hr PCP was calculated.

The results of testing can be analyzed by reviewing the destruction and removal efficiency values (DRE) for the different test conditions. The results of the destruction and removal efficiency evaluations show DRE values of 99.99% or better in 12 of 17 calculations for removing principal organic hazardous constituents while 400 lb/hr of creosote fuel additive were fed to the boiler with all DREs greater than 99.93%. The DREs were above 99.99% for 14 of 17 calculations for a creosote feed fuel additive rate of 800 lb/hr for all DREs with all DREs above 99.96%. These results show that the boiler efficiently destroys the POHC associated with wood treating process wastes.

3.0 FUEL ADDITIVE MATERIAL PARAMETERS

The purpose of this program was to acquire data which would allow the operating permit to be renewed. The stack emissions were monitored under four operating conditions. These conditions were:

1. Operating the boiler with no fuel additive feed (primary fuel woodwaste only).

2. Operating the boiler with a creosote process waste fuel additive feed rate of 400 lb/hr.

3. Operating the boiler with a creosote process waste fuel additive feed rate of 800 lb/hr.

4. Operating the boiler with a penta process waste fuel additive feed rate of 400 lb/hr.

Samples were collected of the fuel additive feed stock and returned to Monroeville for analysis. This data is presented in Table 2.

4.0 BOILER OPERATION

The unit for which this study was performed is a wood-waste fired boiler/steam generator. The boiler currently uses bark, wood chips, sawdust, and hogged material as the primary fuel. The fuel is stored in a bin which has a 3-day storage capacity. Fuel is drawn from the bottom of the bin by screw conveyor. These conveyors drop the wood waste on a drag-chain conveyor which runs to a surge bin for each cell of the boiler combustion process.

The boiler consists of two identical combustion cells. The wood waste is fed to each cell by screw conveyor from the bottom of the surge bins. The fuel falls to the bottom of the combustion cell forming a pile. Combustion takes place in what approximates two-stage oxidation. The wood wastes decompose pyrolytically in the cell pile producing a combustible gas. This gas burns in the upper region of the cell.

Air is introduced to the combustion zone in three areas. The primary air is fed to the waste pile through the bottom grates. Secondary air is fed tangentially to the combustion zone through openings in the lower walls of the cell. Tertiary air is fed diagonally in the upper region of the combustion cell to break-up cyclonic flow of the exit gas. The combustion gas is now approximately 2000°F. This gas flows into the entrainment zone which, together with the combustion zone, affords approximately a two second retention time at a minimum temperature of 1400°F.

The hot off-gas, contacts the boiler tubes above the entrainment zone. The tubes represent the area of the boiler where the actual steam is produced. The off-gas is cooled to between 500 to 600°F in the tube section. The off-gas is further processed for removal of particulate by a multiclone inertial separator before discharge at the stack. Further heat is recovered from the off-gas in the air preheater. The combustion gas is cooled to 200 to 300°F while heating ambient air prior to use in the combustion zone. Figure 1 offers a sketch showing the approximate layout of the steam generation process.

Fuel additive is added to the primary fuel drag-chain from its storage bin by a drag-chain. This chain is activated by the primary drag-chain operation and an affirmative signal from the lockout instrumentation installed as described in the permit. This instrumentation requires the boiler to be operating at a specified load and for

temperatures of the combustion zone of entrainment zone at or above a pre-set condition. Failure of any one of these conditions electrically shuts down the additive feeder.

Appendix A contains strip charts of all pertinent operating data. Also in Appendix A are the field sheets which develop the temperature profile of the combustion/entrainment zones during testing conditions. Tables 3-6 lists the boiler temperature and date for each day of testing. Also, Figure 1 is an arrangement of the boiler process which also gives approximate locations of the temperature monitoring points.

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 2

FUEL ADDITIVE ANALYTICAL RESULTS

	400 lb/hr	800 lb/hr
Acenaphthene	44100	23000
Acenapthylene	5260	3500
Anthracene	97400	5380
Benzo(a)anthracene	5690	6660
Benzo(a)pyrene	1950	1200
Benzo(b)fluoranthene	2860	1960
Benzo(g,h,i)perylene	1800	1380
Benzo(k)fluoranthene	1100	748
Chrysene	6840	7610
Dibenz(ah)anthracene	2420	2490
Fluoranthene	40000	20600
Fluorene	34000	20000
Indeno(123-cd)pyrene	1040	801
Phenanthrene	92800	62200
Pyrene	33600	15300
Carbazole	35300	8800
Naphthalene	36900	22000

All weights in mg/Kg.

6.0 RESULTS

Stack test results and DRE results are listed in Tables 7 through 14. These tables contain the information necessary to determine compliance with the hazardous waste incinerator guidelines and DNR requirements. Each of the tables lists three individual runs made during a feed condition. The data of each is used to calculate an average for each parameter of that feed condition. In Tables 7 through 9, data accumulation stops at this point as it represents information collected for the background test. Tables 10 through 14 have two additional columns of information. The first includes the quantity of each POHC that is fed to the boiler at the given additive feed rate. The second additional column is the calculated DRE which is the average mass emission rate of the given component corrected for background and divided by the boiler input rate of that component. The correction for background levels as mentioned yields the change in POHC emission due to the thermal treatment of these materials. The background tests provide the initial information of how much of each POHC is emitted when only the primary fuel is fired in the boiler. This number is subtracted from the average of the three stack runs for a given additive feed condition. The individual emission rate calculations of the POHC as well as a printout of all calculations for each stack run is included in Appendix B.

Values listed in Tables 10 through 14 under the DRE calculation as approximately 100 are determinations whose value is less than the average background level of that POHC but not equal to zero.

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 7

FUEL ADDITIVE TEST BURN
BACKGROUND TEST

	Run 1	Run 2	Run 3	
5/03/88	**GR-BS-44**	**GR-BS-46**	**GR-BS-48**	
Start Time	**10:30**	**12:26**	**13:51**	
Finish Time	**11:34**	**13:36**	**15:15**	
Component:		**Emissions (lb/hr)**		**Average**
Particulate	7.22003	7.58788	3.68719	6.16503

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 8

FUEL ADDITIVE TEST BURN
BACKGROUND TESTS

	Run 1	Run 2	Run 3	
5/03/88	**GR-BS-45**	**GR-BS-47**	**GR-BS-49**	
Start Time	**11:41**	**13:05**	**14:44**	
Finish Time	**12:47**	**14:14**	**15:59**	
Component:		**Emissions (lb/hr)**		**Average**
Acenaphthene	0.0016002	0.0017656	0.0031900	0.0021852
Acenapthylene	0.0005238	0.0007521	0.0007719	0.0006826
Anthracene	0.0003275	0.0004409	0.0012539	0.0006741
Benzo(a)anthracene	0.0001433	0.0002244	0.0004418	0.0002698
Benzo(a)pyrene	0.0000130	0.0000419	0.0000304	0.0000284
Benzo(b)fluoranthene	0.0000316	0.0000985	0.0000627	0.0000642
Benzo(g,h,i)perylene	0.0000167	0.0000907	0.0000235	0.0000436
Benzo(k)fluoranthene	0.0000140	0.0000332	0.0000255	0.0000242
Chrysene	0.0001200	0.0002166	0.0004810	0.0002725
Dibenz(ah)anthracene	0.0000270	0.0001249	0.0000519	0.0000679
Fluoranthene	0.0005647	0.0008779	0.0016751	0.0010392
Fluorene	0.0010327	0.0013071	0.0033900	0.0019099
Indeno(123-cd)pyrene	0.0000130	0.0000751	0.0000108	0.0000329
Phenanthrene	0.0026900	0.0037000	0.0084500	0.0049466
Pyrene	0.0003433	0.0005307	0.0010286	0.0006342
Carbazole	0.0000930	0.0000975	0.0000980	0.0000961
Naphthalene	0.0052300	0.0050800	0.0059500	0.0054200
TOTAL PAH	0.0127838	0.0154571	0.0269351	

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 9

FUEL ADDITIVE TEST BURN
400 LB/HR CRESOTE

	Run 1	Run 2	Run 3	
5/04/88	**GR-BS-56**	**GR-BS-58**	**GR-BS-60**	
Start Time	**15:32**	**16:43**	**18:08**	
Finish Time	**16:36**	**17:54**	**19:33**	
Component:		**Emissions (lb/hr)**		**Average**
Particulate	6.85876	7.61755	7.28475	7.25368

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 10

FUEL ADDITIVE TEST BURN
400 LB/HR CREOSOTE

	Run 1	Run 2	Run 3			
5/04/88	**GR-BS-51**	**GR-BS-53**	**GR-BS-55**		**Boiler**	
Start Time	**9:18**	**10:40**	**12:00**		**Feed**	**DRE**
Finish Time	**10:33**	**11:50**	**13:03**		**Rate**	
Component:		**Emissions (lb/hr)**		**Average**	**(lb/hr)**	**(%)**
Acenaphthene	0.0035700	0.0028300	0.0029700	0.0023425	17.64	99.98
Acenapthylene	0.0015282	0.0009691	0.0012168	0.0009285	2.10	99.93
Anthracene	0.0004984	0.0004533	0.0005250	0.0003691	38.96	~100.00
Benzo(a)anthracene	0.0002414	0.0002053	0.0002257	0.0001681	2.78	99.99
Benzo(a)pyrene	0.0000175	0.0000119	0.0000245	0.0000134	0.78	~100.00
Benzo(b)fluoranthene	0.0000438	0.0000317	0.0000373	0.0000282	1.14	99.99
Benzo(g,h,i)perylene	0.0000428	0.0000179	0.0000186	0.0000198	0.72	99.99
Benzo(k)fluoranthene	0.0000165	0.0000109	0.0000147	0.0000105	0.44	99.99
Chrysene	0.0002239	0.0001577	0.0002251	0.0001516	2.74	99.99
Dibenz(ah)anthracene	0.0000311	0.0000258	0.0000343	0.0000228	0.97	99.99
Fluoranthene	0.0009247	0.0007509	0.0009204	0.0006490	16.00	99.99
Fluorene	0.0018884	0.0016665	0.0018644	0.0013548	13.6	99.98
Indeno(123-cd)pyrene	0.0000127	0.0000079	0.0000088	0.0000073	0.42	~100.00
Phenanthrene	0.0044200	0.0038300	0.0047300	0.0032450	37.12	99.98
Pyrene	0.0006551	0.0005515	0.0005338	0.0004351	13.44	99.99
Carbazole	0.0000973	0.0000992	0.0000981	0.0000736	14.12	~100.00
Naphthalene	0.0063200	0.0064500	0.0041700	0.0042350	14.76	99.94
TOTAL PAH	0.0205318	0.0180696	0.0176175			

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 11

FUEL ADDITIVE TEST BURN
800 LB/HR CRESOTE

	Run 1	Run 2	Run 3	
5/03/88	**GR-BS-50**	**GR-BS-52**	**GR-BS-54**	
Start Time	**8:45**	**10:02**	**11:18**	
Finish Time	**9:49**	**11:11**	**12:31**	
Component:		**Emissions (lb/hr)**		**Average**
Particulate	6.83715	17.84440	10.03795	11.57317

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 12

FUEL ADDITIVE TEST BURN
400 LB/HR CRESOTE

	Run 1	Run 2	Run 3	
5/05/88	**GR-BS-62**	**GR-BS-64**	**GR-BS-66**	
Start Time	**8:30**	**9:48**	**11:37**	
Finish Time	**9:35**	**11:25**	**12:55**	
Component:		**Emissions (lb/hr)**		**Average**
Particulate	6.52303	12.17014	6.81583	8.50300
Chloride	0.01029	0.01064	0.01028	0.01043

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 13

FUEL ADDITIVE TEST BURN
800 LB/HR CRESOTE

	Run 1	Run 2	Run 3			
5/04/88	**GR-BS-57**	**GR-BS-59**	**GR-BS-61**		**Boiler**	
Start Time	**16:05**	**17:23**	**19:02**		**Feed**	**DRE**
Finish Time	**17:14**	**18:39**	**20:07**		**Rate**	
Component:		**Emissions (lb/hr)**		**Average**	**(lb/hr)**	**(%)**
Acenaphthene	0.0002572	0.0034100	0.0015618	0.0013072	18.40	99.98
Acenapthylene	0.0001411	0.0004697	0.0008420	0.0003632	2.80	99.97
Anthracene	0.0000355	0.0004687	0.0002373	0.0001853	4.30	99.99
Benzo(a)anthracene	0.0000144	0.0001139	0.0000230	0.0000378	5.33	~100.00
Benzo(a)pyrene	0.0000019	0.0000250	0.0000110	0.0000094	0.96	~100.00
Benzo(b)fluoranthene	0.0000038	0.0000320	0.0000050	0.0000102	1.57	~100.00
Benzo(g,h,i)perylene	0.0000067	0.0000190	0.0000070	0.0000081	1.10	~100.00
Benzo(k)fluoranthene	0.0000019	0.0000120	0.0000030	0.0000042	0.60	~100.00
Chrysene	0.0000163	0.0001209	0.0000481	0.0000463	6.09	~100.00
Dibenz(ah)anthracene	0.0000029	0.0000280	0.0000120	0.0000107	1.99	~100.00
Fluoranthene	0.0000614	0.0006306	0.0003704	0.0002656	16.48	99.99
Fluorene	0.0001228	0.0019887	0.0009321	0.0007609	16.00	99.99
Indeno(123-cd)pyrene	0.0000048	0.0000120	0.0000050	0.0000054	0.64	~100.00
Phenanthrene	0.0003128	0.0045100	0.0021900	0.0017532	49.76	99.99
Pyrene	0.0000470	0.0003158	0.0002343	0.0001492	12.24	~100.00
Carbazole	0.0000960	0.0000999	0.0001001	0.0000744	7.04	~100.00
Naphthalene	0.0005921	0.0058200	0.0037300	0.0025355	17.60	99.96
TOTAL PAH	0.0017186	0.0180762	0.0103121			

KOPPERS COMPANY, INC
GRENADA, MISSISSIPPI

TABLE 14

FUEL ADDITIVE TEST BURN
400 LB/HR PENTA

	Run 1	Run 2	Run 3			
5/05/88	GR-BS-63	GR-BS-65	GR-BS-67		Boiler	
Start Time	9:03	10:44	12:24		Feed	DRE
Finish Time	10:19	12:08	20:07		Rate	
Component:		Emissions (lb/hr)		Average	(lb/hr)	(%)
PCP	0.0002572	0.0000308	0.0000261	0.0001047	2.65	99.99
OCDD/OCDF	0.0001411	0.0000030	0.0000021	0.0000487	0.20	99.97

APPENDIX

KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI
WOOD FIRED BOILER
PERMIT RENEWAL TEST BURN

Prepared for:

KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
440 COLLEGE PARK DRIVE
MONROEVILLE, PENNSYLVANIA

PROJECT NO. 189200-00

JUNE 1988

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STATE OF MISSISSIPPI
DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL
P.O. BOX 10385
JACKSON, MISSISSIPPI 39209

For Agency Use
FACILITY NUMBER
130-0960-00012
Date Received
6-29-88
Month Day Year

DATA CODED

APPLICATION FOR PERMIT TO CONSTRUCT AND/OR OPERATE AIR EMISSIONS EQUIPMENT - GENERAL FORM

APPLICATION FOR: ____ CONSTRUCTION X PERMIT RENEWAL - PLEASE CHECK APPROPRIATE BOX

1. Name, Address, Location, and Telephone Number
   A. Name Koppers Company, Inc.
   B. Mailing Address of Applicant
      1. Street Address or P.O. Box 160
      2. City Tie Plant 3. State MS
      4. Zip Code 38960 5. Telephone No. (601) 226-4584
   C. Location of Facility
      1. Street Off of Highway 51 S., Tie Plant Road
      2. City Tie Plant 3. State MS
      4. Zip Code 38960 5. Telephone No. (601) 226-4584
   D. If the facility is located outside the City limits, please provide a sketch or description showing the approximate location and attach to this application.
2. SIC Code 2491
3. Number of Employees 70
4. Principal Product Creosote or pentachlorophenol-treated railroad ties and utility poles
5. Principal Raw Materials Creosote, pentachlorophenol, lumber
6. Principal Process Lumber is pressure treated with pentachlorophenol or creosote.
7. Maximum amount of principal product produced or raw material consumed per day 13,000 cubic feet of wood are treated each day.
8. (A) Check here if operation which generates air pollutant emissions occurs all year X, or specify the months the operation occurs: ____
   (B) Specify how many days per week the operation occurs: 7
   (C) Specify how many hours per day the operation occurs: 24
9. If this application is for existing facility permit renewal only, has the facility been modified in any way (including production rate, fuel, and/or raw material changes) during period covered by the Operating Permit ____ Yes X No or since 1972? ____ Yes ____ No
   If Yes, give year(s) in which modification(s) occurred. ____
10. ALL APPLICATIONS MUST BE SIGNED BY THE APPLICANT.

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete, and accurate, and that I am the owner or chief corporate officer, or his designated representative, responsible for complying with air pollution control laws and regulations.

J. D. Clayton
Printed Name of Person Signing

Plant Manager
Title

JUNE 22, 1988
Date Application Signed

Jackie D. Clayton
Signature of Applicant

PLEASE COMPLETE FOLLOWING PAGES WHERE APPLICABLE

FOR ALL APPLICANTS, WHETHER NEW CONSTRUCTION, EXISTING FACILITY, OR RENEWAL

CONTROL EQUIPMENT COVERED UNDER THIS APPLICATION - PLEASE CHECK ALL APPLICABLE AND INDICATE NUMBER OF UNITS.

PARTICULATE EMISSIONS CONTROL EQUIPMENT

1. Cyclone(s) 1 multicone
2. Water Scrubber -
3. Baghouse -
4. Electrostatic Precipitator -
5. Venturi Scrubber -
6. Cyclonic Baghouse -
7. Cyclonic Scrubber -
8. Other -

GASEOUS EMISSIONS CONTROL EQUIPMENT

1. Water Scrubber -
2. Activated Carbon Bed -
3. Other -

WASTE DISPOSAL SYSTEMS

1. Solid Waste Incinerator -
2. Liquid Waste Incinerator -
3. Wood or Other Waste Fuel Recovery Boiler 1
4. Gaseous Waste Flare -
5. Liquid Waste Flare -
6. Other -

Pneumatic Conveying System -

Other (please describe)

None.

FOR ALL APPLICANTS

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

This form has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment. Reasons should be given explaining any data not filled in.

PAGE 1

1. Fill in company name and address, plus year for which data is given (if existing facility) at top of page. Use data for most recent calendar year available.
2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc., and use the same reference number on each of the three pages to identify information for the same unit.
3. Manufacturer and Model Number. Nameplate data for boiler, furnace, kiln, etc. Waste gas flares and stationary internal combustion engines should also be included on this form.
4. Rated Capacity in Millions of BTU per hour.
5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.
6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.
7. Heat Usage. Percent of heat used for process and percent for space heating.

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 FACILITY NAME	Address	for Agency use Only
Koppers Company, Inc.	Tie Plant Road Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calender Year	Date
0960-00012	19 87	6/3/88

2	3	4	5	6	7	
Reference Number	Manufacturer and Model Number	Rated Capacity 10^6BTU/hr	Type of Burner Unit (use code 1*)	Usage (use code 2*)	Most Usage % Process	% Space heat
01	Wellons/Nebraska Wood Fired Boiler, Model No. WTS-2-45-SH	37.5	1	1	100	0
02(a)	Murray Boiler, Model M64C	28.5	7	1	100	0
02(b)	Size 13S	28.5	8	1	100	0
	Both Murray Boilers are used as standby boilers.					

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FUEL BURNING EQUIPMENT

(FOR AGENCY USE ONLY)

Reference Number	Stack Parameters				Fuel Data					
	Stack Height Feet	Inside Exit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature Degree F.	Fuel Type	Maximum Amount Per Hour (Specify Units)	Amount Per Year (Specify Units)	Heat Content BTU/Gal, etc. (Specify Units)	Percent Sulfur	Percent Ash
01	41	3	55	350	Process waste mixed with wood waste	5.95 Tn	21,840 Tn	5,000 Btu/lb	0	4.5
02(a)	36	2.5	32	570	Natural Gas	28,000 ft^3/hr	-	1,000 Btu/ft^3	0	0
02(b)	36	2.5	32	570	#2 Oil	3.4 gpm	10,000 g/yr	18,000 Btu/lb	0	0

FUEL SUPPLIERS:

Fuel Type	Supplier
Natural Gas	None
#2 Oil	Griffs Oil, Grenada
Wood Waste	Fisackerly - Winona
" "	Hankins Lumber-Elliot
" "	Carter-Houston
" "	Dyer-Houston
" "	Koppers-Grenada

FOR ALL APPLICANTS

MANUFACTURING PROCESS OPERATIONS

Page 1

1. Company Name and Address, plus year for which information is given (if existing facility) at top of page. Use data for must recent calendar year available.
2. Reference Number. Use an identifying number for each manufacturing process which emits matter to the air and use the same number on all three pages of this form to identify information for the same operation.
3. Process or Unit Operation Name. Identify the unit or process section for which information is given by name.
4. Rated Process Capacity. Give in tons per hour the maximum rated capacity of the process or unit identified, wet weight.
5. Feed Input. Process rate in wet tons per hour and wet tons per year of materials fed to the operation.
6. Number of Emission Points to Air. Number of stacks, vents, etc., which emit materials to air.
7. Product Output. Product rate in wet tons per hour and wet tons per year from the operation.

Page 2

8. Reference Number. Use same number as on Page 1 of form to identify information for same process or operation.
9. Stack Data (or outlet of air cleaning device).
   Stack Height in feet above ground.
   Stack Inside Diameter in Feet.
   Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used).
   Exit Gas Temperature in degrees F.
10. Air Pollution Control Equipment.
    Manufacturer and Model Number. Nameplate Data.
    Type. Use Table 1, Page 16. If a wet scrubber, give water flow in GPM and water pressure.
    Collection efficiency. Design and actual collection efficiency if known.

Page 3

11. Reference Number. Use same number as on Pages 1 & 2 of form to identify information for same process or operation.
12. Process Emissions. Give in pounds per hour and tons per year the amount of emissions from the process or operation of each of the two pollutant categories so that process rates versus emission rates may be compared with Regulations. Identify the units of measure used.
    Give the basis of the estimates of pollutants emitted (stack tests, material balance, emission factors, etc.)

MANUFACTURING PROCESS OPERATIONS

Company Name	Address	FOR AGENCY USE
Koppers Company, Inc.	Tie Plant Road Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calendar Year	Date
0960-00012	19 87	6/3/88

Reference Number	Process or Unit Operation Name	Rated Process Capacity Tons/Hour	Feed Input		Number of Emission Points To Air	Product Output*	
			Quantity Per Hour	Quantity Per Year		Quantity Per Hour	Quantity Per Year
01	Wood Preserving	24		3.59 mm C.F. of wood products 3 mm gal. of preservative	4 storage tanks		4mm C.F. of wood products

*Specify Units of Measure Used

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

Reference Number	Stack Data				Air Pollution Control Equipment			
	Height Feet	Inside Unit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature °F	Manufacturer and Model Number	Type* (use Table 1)	Collection Efficiency	
							Design	Actual
01	None	----------	----------	----------	----------	----------	----------	----------

*For Wet Scrubbers Give Gallons per minute Water Flow and Water Pressure if known.

FOR ALL APPLICANTS

REFUSE DISPOSAL AND INCINERATION

A. Company Name & Address plus year for which information is given if for renewal of permit, at top of page.

B. Type Waste. Describe type of waste materials (paper, garbage, wood crates, sawdust, coal refuse, etc.)

C. Maximum amount per day in pounds.

D. Average amount per year in tons.

E. Method of Disposal. Use codes at bottom of Form (1*).

Page 2

1. Type of Incinerator. Check which applies.

2. Manufacturer, Model Number, Capacity in pounds per hour and type waste on which capacity is based (Nameplate Data).

3. Average Quantity Burned in pounds per year.

4. Operating Schedule for Incinerator. Hours per day and days per year incinerator is in operation.

5. Auxiliary Fuel Data.
   Type. (Natural Gas, #2 Oil, etc.)
   Amount per year. Specify gallons, cubic feet, etc.
   Heat Content of Fuel. BTU per gallon, cubic feet, etc.
   Percent Sulfur. Average sulfur content of auxiliary fuel.
   Percent Ash. Average ash content of auxiliary fuel.
   Fuel supplier's name if ash and sulfur content are not known.

6. Pollution Control Equipment on Incinerator.
   Manufacturer of Control Device.
   Model Number of Control Device.
   Percent efficiency of control if known.
   Type. Venturi Scrubber, Baghouse, etc., as outlined on other forms.
   GPM water flow if control device is a wet scrubber.

7. Stack Data.
   Height in Feet above Ground.
   Inside Exit Diameter in Feet.
   Exit Gas Velocity in Feet per Second.
   Exit Gas Volume if Velocity not known.
   Exit Gas Temperature in Degrees F if known.

8. Estimated Emission from Refuse Incineration. Give amounts in tons per year and basis of estimates for each of the five listed pollutants.

REFUSE DISPOSAL AND INCINERATION

A

Company Name	Information for Year	(Agency Use Only)
Koppers Company, Inc.	1987	
Address	**Date**	
Tie Plant Road Tie Plant, MS 38950	6/3/88	

B — Description of Waste Materials

Type (Describe)	C Maximum Amount Per Day (Pounds)	D Amount Per Year (Tons)	E Method of Disposal 1*
Wood Chips	10,000	1,200	5
Wood Treating Process Wastes	-	974	5

If Waste Disposal is by Incineration, Specify the Following:

1. Type of Incinerator:

N/A

- single chamber ☐
- multiple Chamber ☐
- Modified (describe) ☐
- Other (describe) ☐
- Rotary ☐
- Flue Fed ☐

2. Manufacturer's Name: _____
   Model Number _____
   Rated Capacity _____ Pounds / Hour _____ Type Waste
3. Quantity Burned: _____ Pounds / Day
   _____ Tons / Year
4. Operating Schedule _____ Hours / Day
   _____ Days / Year

*1 Disposal Method Codes

1. Open Burning
2. Landfill (No Burning)
3. Incinerator (Complete rest of Form)
4. Conical Burner (TeePee)
5. Burned in Boiler or Furnance
6. Other (Specify)

ADDITIONAL INFORMATION REQUIRED FOR APPROVAL TO CONSTRUCT

The following additional information must be submitted. Failure to submit any of the additional information or to conform to the instructions will result in initial denial of the application.

1. Site Plan - The drawing or sketch submitted must be to scale and show at least the following:

   A. The property involved and outlines and heights of all buildings. Identify property lines plainly.

   B. Location and identification of all existing or proposed points of discharge of air contaminants to the atmosphere.

   C. Location of streets and all adjacent properties. Show location of all buildings outside the property that are within 150 feet of the equipment involved in the application. Identify all such buildings (as a residence, apartment, warehouse, etc.), specifying number of stories. Indicate north, and prevailing wind direction.

2. Drawings of Equipment (See Note Below) - Supply an assembly drawing, dimensioned and to scale, and plan elevation in as many sections as are needed to show clearly the design and operation of the equipment and the means by which air contaminants are controlled. The following must be shown:

   A. Size and shape of equipment. Show exterior and interior dimensions and features.

   B. Locations, sizes, and shape details of all features which may affect the production, collection, conveying or control of air contaminants of any kind; location, size and shape details concerning all materials handling equipment.

   C. All data and calculations used in selecting or designing the equipment.

   D. Horsepower rating of all motors driving the equipment.

   NOTE: Structural design calculations and details are not required.

ADDITIONAL INFORMATION MAY BE REQUIRED.

3. Description of Process and Control equipment - The application must be accompanied by two copies of a written description of each process to be carried out in the facility and the function of the equipment used in the process. The descriptions must be complete and particular attention must be given to explaining all stages in the process where the discharge of any materials might contribute in any way to air pollution. Control procedures must be described in sufficient detail to show the extent of control of air contaminants anticipated in the design, specifying the expected efficiency of the control devices. All obtainable data must be supplied concerning the nature, volumes, particle size, weights, chemical composition and concentrations of all types of air contaminants.

4. Two copies of a block flow diagram showing the steps of the process and the flow of materials through the process and any control devices must be supplied.

NOTE: THE APPLICATION FORM, SITE PLAN, AND EQUIPMENT MUST BE SIGNED AND STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF MISSISSIPPI.

TABLE 1

CODE NUMBERS FOR CONTROL DEVICES

Vapor Control Equipment

00 Group – CONTROL BY COMBUSTION

01 catalytic combustion
02 furnace combustion
03 boiler firebox
04 steam injection flare
05 venturi flare
06 direct flame combustion (afterburner)

10 Group – ADSORBERS

10 activated carbon – nonregenerative
11 activated carbon – regenerative
12 silica gel – nonregenerative
13 silica gel – regenerative
14 lithium chloride
15 activated alumina
16 activated bauxite

20 Group – ABSORBERS

20 sieve plate tower
21 bubble-cap tower
22 packed tower

Particulate Matter – Liquid Mist Control Equipment

30 Group – DRY SEPARATORS AND FILTERS

30 simple cyclones
31 high efficiency cyclones
32 settling chamber
33 simple filters
34 baghouse (shaking)
35 baghouse (reverse jet)
36 dry collector (dynamic)

40 Group – WET COLLECTORS

40 spray chamber – no baffles
41 spray chamber – with baffles
42 wet cyclones – rotoclone
43 wet dynamic precipitator
44 venturi scrubber
45 spray tower (not absorption – scrubbers)
46 packed tower (not absorption – scrubbers)
47 condensors (tube and shell); air
48 barometric condensor with hot wells

50 Group – ELECTRICAL PRECIPITATORS

50 single stage
51 double stage
52 precipitron

60 Group

60 Counteractant

70 Group – SPECIAL

71 Jet exhausters (air dilution)
72 Mist eliminators

80 Group – Other
Specify

Date: 4-1-88	Date: 4-2-88	Date: 4-3-88	Date: 4-4-88	Date: 4-5-88	Date: 4-6-88	Date: 4-7-88
Hrs. No Oper.	Hrs. No Oper.	Hrs. No Oper.	Hrs. No Oper.	Hrs. No Oper.	Hrs. No Oper.	Hrs. No Oper.
# Drums Holiday	# Drums	# Drums	# Drums Holiday	# Drums	# Drums	# Drums
Pres.	Pres.	Pres.	Pres.	Pres.	Pres.	Pres.
Loc.	Loc.	Loc.	Loc.	Loc.	Loc.	Loc.

Boiler Down For Repair

4-1-88 — 4-7-88

TOTAL

Date: 4-8-88	3 #1 1615	Date: 4-9-88	3 #4 1620	Date: 4-10-88	3 #8 1575	Date: 4-11-88		Date: 4-12-88		Date: 4-13-88	3 #9 1570	Date: 4-14-88	3 #1 1760
Hrs. 17		Hrs. 21		Hrs. 8		Hrs. No Oper.		Hrs. No Oper.		Hrs. 16		Hrs. 21	
# Drums 9	3 #2 1600	# Drums 11	3 #5 1595	# Drums 3		# Drums		# Drums		# Drums 10	3 #10 1590	# Drums 7	2 #2 1195
Pres. PENTA.		Pres. PENTA.		Pres. PENTA.		Pres.		Pres.		Pres. PENTA.		Pres. CREOSOTE	
Loc. Carbondale IL.	3 #3 1585	Loc. Carbondale IL.	3 #6 1580	Loc. Carbondale		Loc.		Loc.		Loc. Carbondale IL.	2 #11 1030	Loc. Grenada MS.	2 #3 1[illegible]
			2 #7 1070			Boiler Down		Boiler Down ½ Day		87 Drums Carbondale, IL. Complete 46,150 #'s	2 #12 970		
TOTAL	4800		[illegible]		[illegible]								

Date: 4-15-88	3 #4	Date: 4-16-88	3 #9	Date: 4-17-88	3 #11	Date: 4-18-88	3 #14	Date: 4-19-88	3 #17	Date: 4-20-88	3 #21	Date: 4-21-88	3#24
Hrs. 21	1635	Hrs. 10	1680	Hrs. 20	1630	Hrs. 13	1665	Hrs. 21	1620	Hrs. 20	1625	Hrs. 20	1610
# Drums 13	3 #5	# Drums 6	3 #10	# Drums 8	3 #12	# Drums 7	2 #15	# Drums 12	3 #18	# Drums 8	3 #22	# Drums 10	3#25
Pres. Creosote	1660	Pres. Creosote	1660	Pres. Creosote	1655	Pres. Creosote	1100	Pres. Creosote	1645	Pres. Creosote	1650	Pres. Creosote	1640
Loc. Grenada, MS.	3 #6	Loc. Grenada, MS.		Loc. Grenada, MS.	2 #13	Loc. Grenada, MS.	2 #16	Loc. Grenada, MS.	3 #19	Loc. Grenada, MS.	2 #23	Loc. Grenada, MS.	2 #26
	1650				1140		1130		1660		1115		1[illegible]0
	2 #7								3 #20				2 #27
	1110								1635				1125
	2 #8												
	1090												
TOTAL	7145		3346		[illegible]		[illegible]		[illegible]				

Date: 4-22-88	3 #28	Date: 4-23-88	3 #32	Date: 4-24-88	3 #36	Date: 4-25-88	3 #39	Date: 4-26-88		Date: 4-27-88	2 #42	Date: 4-28-88	3 #44
Hrs. 20	1635	Hrs. 21	1650	Hrs. 21	1620	Hrs. 22	1660	Hrs. No Oper.		Hrs. 8	1120	Hrs. 14	1615
# Drums 10	3 #29	# Drums 11	3 #33	# Drums 8	3 #37	# Drums 9	3 #40	# Drums		#-Drums 4	2 #43	# Drums 6	3 #45
Pres. CREOSOTE	1655	Pres. CREOSOTE	1630	Pres. CREOSOTE	1640	Pres. CREOSOTE	1625	Pres. CREOSOTE		Pres. CREOSOTE	1090	Pres. CREOSOTE	1600
Loc. GRENADA, MS.	2 #30	Loc. GRENADA, MS.	3 #34	Loc. GRENADA, MS.	2 #38	Loc. GRENADA, MS.	3 #41	Loc. GRENADA, MS.		Loc. GRENADA, MS.		Loc. GRENADA, MS.	
	1080		1635		1085		1635						
	2 #31		2 #35					Boiler Down For Cleaning					
	1065		1110										
TOTAL	5435		4425		4345		4460						

Date:	3 #46	Date:	3 #49	Date:		Date:		Date:		Date:		Date:	
4-29-88	1625	4-30-88	1615	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.	
Hrs. 21		Hrs. 21		# Drums		# Drums		# Drums		#-Drums		# Drums	
# Drums 9	3 #47	# Drums 8	3 #50	Pres.		Pres.		Pres.		Pres.		Pres.	
Pres.	1660	Pres.	1600	Loc.		Loc.		Loc.		Loc.		Loc.	
CREOSOTE		CREOSOTE											
Loc.	3 #48	Loc.	2 #51										
GRENADA, MS.	1605	GRENADA, MS.	1080										

Date:	3#22	Date:	2#21	Date:	1#23	Date:	3#19	Date:	3#5	Date:	3#8	Date:	3#12	Date:
2-2-87	1710	2-3-87	960	2-4-87	575	2-5-87	1710	2-6-87	1780	2-9-87	1810	2-10-87	1760	
Hrs. 10		Hrs. 6		Hrs. 17		Hrs. 19		Hrs. 21		Hrs. 18		Hrs. 17		Hrs.
# Drums 7	3#20	# Drums 4	2#23	# Drums 10	3#16	# Drums 12	3#1	# Drums 12	3#7	# Drums 12	3#9	# Drums 11	3#13	# Drum
Pres. Creo-	1780	Pres. Creo-	1150	Pres. Creo-	1810	Pres. Creo.	1830	Pres. Creo-	1820	Pres. Creo-	1740	Pres. Creo-	1830	Pres.
Loc. Houston	1#21	Loc. Houston		Loc. Houston	3#17	Loc. Houston	3#2	Loc. Houston	3#4	Loc. Houston	3#10	Loc. Houston	3#14	Loc.
	480				1870		1800		1840		1815		1790	
					3#18		3#3		3#6		3#11		2#15	
					1890		1870		1820		1800		1080	
TOTAL	3970		2110		6145		7210		7260		7165		6460	

Date: 2-11-87	1 #15	Date: 2-12-87	3 #19	Date: 2-13-87	1800	Date: 2-14-87		Date: 2-16-87	1790	Date: 2-17-87	3 #1	Date: 2-18-87	1 #4	Date:
Hrs. 22	540	Hrs. 22	1850	Hrs. 22	1750	Hrs. 1		Hrs. 17	1760	Hrs. 17	1860	Hrs. 21	580	Hrs.
# Drums 10	3 #16	# Drums 6	3 #20	# Drums 9	1910	# Drums 0		# Drums 9	1770	# Drums 11	3 #2	# Drums 14	3 #5	# Drums
Pres. Creo-	1790	Pres. Creo.	1820	Pres. Creo.		Pres. Creo.		Pres. Creo-		Pres. Creo-fate	1870	Pres. Creo-fate	1720	Pres.
Loc. Houston	3 #17	Loc. Houston		Loc. Granada		Loc. Granada		Loc. Granada		Loc. Gainesville FLA.	3 #3	Loc. Gainesville FLA.	3 #6	Loc.
	1830										1820		1740	
	3 #18	Creo Granada 6 Drums				Finish Running What was in Bottom of Feeder from 2/13/87					2 #4		3 #7	
	1850		1700								1160		1790	
			1800											
													3 #8	
													1810	
													1 #9	
													6 00	
TOTAL	6010		7170		5460		0		5320		6710		8240	

Date: 2-19-87	2 #9	Date: 2-20-87	1 #13	Date: 2-21-87	2 #18	Date: 2-23-87	1 #19	Date: 2-24-87	3 #24	Date: 2-25-87	1700	Date: 2-26-87	1650	Date:
Hrs. 19	1200	Hrs. 21	525	Hrs. 6	1220	Hrs. 20	575	Hrs. 10 1/2	1890	Hrs. 11 1/2		Hrs. 20		Hrs.
# Drums 13	3 #10	# Drums 14	3 #14	# Drums 4	2 #19	# Drums 13	3 #20	# Drums	3 #25	# Drums 6	1820	# Drums 9	1670	# Drum
Pres. Creo-penta	1820	Pres. Creo-penta	1780	Pres. Creo-penta	1150	Pres. Creo-penta	1780	Pres. Creo-penta	1880	Pres. Creo		Pres. Creo-		Pres.
Loc. Hainesville FLA	3 #11	Loc. Hainesville FLA	3 #15	Loc. Hainesville FLA.		Loc. Hainesville FLA	3 #21	Loc. Hainesville Fla.	1 #26	Loc. Grenada		Loc. Grenada	1720	Loc.
	1740		1820				1810		650					
	3 #12		3 #16				3 #22							
	1810		1810				1830							
	2 #13		3 #17				3 #23							
	1050		1770				1750							
			1 #18											
			610											
TOTAL	7620		8315		2370		7745		4420		3520		5040	

Date: 2-27-87	1610	Date: 2-28-87	1740	Date:		Date:		Date:		Date:		Date:		Date:
Hrs. 21	1520	Hrs. 21	1800	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
# Drums 9		# Drums 9		# Drums		# Drums		# Drums		# Drums		# Drums		# Drum
Pres. Creo -	1710	Pres. Creo -	1670	Pres.		Pres.		Pres.		Pres.		Pres.		Pres.
Loc. Grenada		Loc. Grenada		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.
TOTAL	4840		5210											

Date:	6 DRUMS	Date:	11 DRUMS	Date:	3 #15	Date:	2 #23	Date:	3 #17	Date:	3 #21	Date:	3 #3	Date:
1-5-87	2520	1-6-87	5850	1-7-87	1860	1-8-87	1350	1-9-87	1850	1-12-87	1820	1-13-87	1860	
Hrs. 13		Hrs. 21		Hrs. 19	1 #14	Hrs. 18		Hrs. 16		Hrs. 17		Hrs. 17		Hrs.
# Drums 6		# Drums 11		# Drums 7	710	# Drums 8	3 #20	# Drums 9	3 #18	# Drums 12	3 #1	# Drums 9	3 #5	# Drum
Pres. CLO-		Pres. CLO-		Pres. CLO-		Pres. CREO-	1890	Pres. CREO	1900	Pres. CREO	1830	Pres. CREO	1910	Pres.
Loc. GRENADA		Loc. Grenada		Loc. HOUSTON	3 #22	Loc. HOUSTON		Loc. HOUSTON	3 #19	Loc. HOUSTON		Loc. HOUSTON		Loc.
					1800		3 #16		1870		3 #2		3 #6	
							1900				1720		1850	
											3 #4			
											1410			
TOTAL	2520		5850		4370		5140		5620		6780		5620	

Date: 1-14-87		Date: 1-15-87		Date: 1-16-87		Date: 1-26-87		Date: 1-27-87		Date: 1-28-87		Date: 1-29-87		Date:	
Hrs. 22	3 #7	Hrs. 20	2 #11	Hrs. 20	3 #16	Hrs. 16	3 #21	Hrs. 21	3 #1	Hrs. 16	3 #5	Hrs. 21	3 #8	Hrs.	
# Drums 13	1820	# Drums 14	1260	# Drums 15	1550	# Drums 10	1690	# Drums 12	1860	# Drums 9	1840	# Drums 14	1850	# Dru	
Pres. Creo-	·	Pres. Creo	3 #12	Pres. Creo-	3 #17	Pres. Creo-	3 #22	Pres. Creo-	3 #2	Pres. Creo-	3 #6	Pres. Creo	3 #9	Pres.	
Loc. Houston	3 #8	Loc. HOUSTON	1810	Loc. HOUSTON	1630	Loc. Houston	1730	Loc. HOUSTON	1830	Loc. HOUSTON	1845	Loc. Houston	1820	Loc.	
	1840		3 #13		3 #18		3 #23		3 #3		3 #7		3 #10		
	3 #9		1828		1645		1820		1850		1860		1790		
	1810		3 #14		3 #19		1 #24		3 #4				3 #11		
	3 #10		1790		1720		500		1890				1810		
	1825		3 #15		3 #20								2 #12		
	1 #11		1830		1760								1060		
	630														
TOTAL	7925		8518		8305		5740		7430		5545		8330		

Date:	1#12	Date:		Date:		Date:		Date:		Date:		Date:		Date:
1-30-87	520													
Hrs. 77		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
# Drums 10	3#13	# Drums		# Drums		# Drums		# Drums		# Drums		# Drums		# Drum
Pres. Cuo-	1880	Pres.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.
Loc. Houston		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.
	3#14													
	1830													
	3#15													
	1850													
TOTAL	6090													

Date:		Date:	3#17	Date:	3#16	Date:	3#1	Date:	3#5	Date:	3#7	Date:	1#8
9-8-87		9-9-87	1710	9-10-87	1685	9-11-87	1510	9-12-87	1580	9-13-87	1640	9-14-87	530
Hrs. NO-OPER.		Hrs. 4		Hrs. 12		Hrs. 19		Hrs. 8		Hrs. 5		Hrs. 1	
# Drums		# Drums 3		# Drums 9	3#18	# Drums 12	3#2	# Drums 6	3#6	#-Drums 3		# Drums 1	
Pres.		Pres. CREO.		Pres. CREO	1740	Pres. CREO.	1615	Pres. CREO.	1470	Pres. CREO.		Pres. CREO-	
Loc.		Loc. MONTGOMERY PA.		Loc. MONTGOMERY PA-	3#19	Loc. GRENADA MS-	3#3	Loc. GRENADA MS-		Loc. GRENADA MS-		Loc. GRENADA MS-	
					1760		1615						
							3#4						
							1545						

Date:	3#6	Date:	3#9	Date:	3#1	Date:	3#7	Date:	3#13	Date:		Date:
9-1-85	1570	9-2-87	1640	9-3-87	1760	9-4-87	1690	9-5-87	1740	9-6-87		9-7-87
Hrs. 15		Hrs. 18		Hrs. 14		Hrs. 13		Hrs. 7		Hrs. NO-OPER		Hrs. NO-OPER
# Drums 9	3#7	# Drums 12	3#10	# Drums 18	3#2	# Drums 18	3#8	# Drums 9	3#14	#-Drums		# Drums
Pres. CREO-	1605	Pres. CREO.	1595	Pres. CREO-	1805	Pres. CREO-	1720	Pres. CREO-	1755	Pres.		Pres.
Loc. GRENADA	3#8	Loc. GRENADA	3#11	Loc. MONTGOMERY	3#3	Loc. MONTGOMERY	3#9	Loc. MONTGOMERY	3#15	Loc.		Loc.
MS-	1590	MS-	1480	PA.	1745	PA.	1770	PA.	1685			
			3#12		3#4		3#10					
			1530		1770		1755					
					3#5		3#11					
					1750		1735					
					3#6		3#12					
					1735		1690					

Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:	
9-15-87	3#20	9-16-87	3#1	9-17-87	3#4	9-18-87	3#7	9-19-87	3#12	9-20-87	3#18	9-21-87	3#20
Hrs. 14	1800	Hrs. 12	1520	Hrs. 14	1585	Hrs. 22	1615	Hrs. 22	1530	Hrs. 12	1645	Hrs. 14	1570
# Drums 12	3#21	# Drums 9	3#2	# Drums 9	3#5	# Drums 15	3#8	# Drums 18	3#13	# Drums 6	3#19	# Drums 6	3#21
Pres. CREO-	1825	Pres. CREO-	1545	Pres. CREO-	1460	Pres. CREO.	1540	Pres. CREO-	1590	Pres. CREO-	1540	Pres. CREO-	1615
Loc. MONTGOMERY	3#22	Loc. GRENADA	3#3	Loc. GRENADA	3#6	Loc. GRENADA	3#9	Loc. GRENADA	3#14	Loc. GRENADA		Loc. GRENADA	
PA-	1810	MS-	1640	MS-	1610	MS-	1630	MS-	1570	MS-		MS-	
	3#23						3#10		3#15				
	1815						1580		1615				
							3#11		3#16				
							1565		1620				
									3#17				
									1590				

Date: 9-22-87	3#22	Date: 9-23-87	3#26	Date: 9-24-87		Date: 9-25-87		Date: 9-26-87		Date: 9-27-87		Date: 9-28-87	1#27
Hrs. 22	1560	Hrs. 6	1640	Hrs. No-open		Hrs. No-open		Hrs. No-open		Hrs. No-open		Hrs. 1	460
# Drums 12	3#23	# Drums 3		# Drums		# Drums		# Drums		#-Drums		# Drums 1	
Pres. Geo-	1605	Pres. Geo-		Pres.		Pres.		Pres.		Pres.		Pres. Geo-	
Loc. Glenda	3#24	Loc. Glenda		Loc.		Loc.		Loc.		Loc.		Loc. Glenda	
MS-	1470	MS-										MS-	
	3#25												
	1580												
TOTAL	6215		1640										

Date: 9-29-87		Date: 9-30-87		Date:		Date:		Date:		Date:		Date:	
Hrs. No-apw		Hrs. No-apw		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.	
# Drums		# Drums		# Drums		# Drums		# Drums		#--Drums		# Drums	
Pres.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.	
Loc.		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.	

te: 1-87	3#1	Date: 8-2-87		Date: 8-3-87	3#4	Date: 8-4-87	3#7	Date: 8-5-87	3#11	Date: 8-6-87	3#18	Date: 8-7-87	3#1	Date:
Hrs. 8	1570	Hrs. NO-OPER.		Hrs. 9	1550	Hrs. 15	1560	Hrs. 19	1570	Hrs. 19	1810	Hrs. 22	1810	Hrs.
# Drums 9	3#2	# Drums		# Drums 8	3#5	# Drums 13	1#6	# Drums 21	3#12	# Drums 24	3#19	# Drums 27	3#2	# Drums
Pres. CREO-	1515	Pres.		Pres. CREO-	1545	Pres. CREO-	495	Pres. CREO-	1545	Pres. CREO-	1835	Pres. CREO-	1785	Pres.
Loc. GREEN- SPRING W.VA	3#3	Loc.		Loc. GREEN- SPRING W.VA.	2#6	Loc. GREEN- SPRING W.VA	3#8	Loc. GREEN- SPRINGS W.VA	1560	Loc. GREEN- SPRINGS W.VA-	3#20	Loc. N. LITTLE ROCK ARK	3#3	Loc.
	1585				990		1570		3#13		1760		1820	
									1560					
							3#9		3#14		3#21		3#4	
							1550		1610		1795		1835	
							3#10		3#15		3#22		3#5	
							1885		1570		1740		1760	
									3#16		3#23		3#6	
									1555		1820		1790	
									3#17		3#24		3#7	
									1560		1840		1815	
											3#25		3#8	
											1860		1820	
													3#9	
													1770	
TOTAL	4670		0		4085		7,060		10,970		14,460		16,205	

te: -8-87	3#10	Date: 8-9		Date: 8-10-87	3#16	Date: 8-11-87	3#20	Date: 8-12-87	3#23	Date: 8-13-87	3#1	Date: 8-14-87	3#8	Date:
Hrs. 18	1780	Hrs. NO-OPER		Hrs. 13	1805	Hrs. 9	1800	Hrs. 18	1690	Hrs. 21	1850	Hrs. 18	1830	Hrs.
Drums 18	3#11	# Drums		# Drums 12	3#17	# Drums 9	3#21	# Drums 10	3#24	#-Drums 21	3#2	# Drums 15	3#9	# Drum
es. REO.	1810	Pres.		Pres. CREO-	1780	Pres. CREO-	1740	Pres. CREO-	1725	Pres. CREO-	1825	Pres. CREO-	1825	Pres.
pc. LITTLEROCK	3#12	Loc.		Loc. N-LITTLEROCK	3#18	Loc. N-LITTLEROCK	3#22	Loc. N-LITTLEROCK	3#25	Loc. GREENSPRING	3#3	Loc. GREENSPRING	3#10	Loc.
RK	1830			ARK.	1765	ARK.	1835	ARK.	1730	W.VA.	1840	W.VA.	1790	
	3#13				3#19				1#26		3#4		3#11	
	1795				1795				510		1865		1855	
	3#14										3#5		3#12	
	1775										1860		1810	
	3#15										3#6			
	1805										1815			
											3#7			
											1840			
TOTAL	10,795				7,145		5,375		5,655		12,825		9,110	

Date: 8/15/87		Date: 8-16-87		Date: 8-17-87		Date: 8-18-87		Date: 8-19-87		Date: 8-20-87		Date: 8-21-87		Date:
Hrs. 21	3#13	Hrs. No-apr		Hrs. 11	3#18	Hrs. 15	2#21	Hrs. 14	3#4	Hrs. 17	3#7	Hrs. 21	3#10	Hrs.
# Drums 15	1840	# Drums 1		# Drums 9	1820	# Drums 2	1510	# Drums 9	1515	# Drums 9	1640	# Drums 12	1605	# Drums
Pres. Creo-	3#14	Pres.		Pres. CREO.	3#19	Pres. CREO		Pres. CREO	3#5	Pres. CREO.	3#8	Pres. CREO.	3#11	Pres.
Loc. Greenspring W.VA-	1855	Loc.		Loc. GREENSPRING W. VA-	1870	Loc. GREENSPRING W. VA-		Loc. GRENADA MS-	1580	Loc. GRENADA MS-	1535	Loc. GRENADA MS-	1520	Loc.
	3#15				3#20				3#6		3#9		3#12	
	1845				1860				1615		1570		1585	
	3#16					DRUMS-							3#13	
	1835												1570	
	3#17					PRES.	3#1							
	1860					CREO.	1530							
						LOC.								
						GRENADA.	3#2							
						MS-	1565							
							3#3							
							1610							
						GREENSPRING W.VA.	1510							
TOTAL	9,235				5550	Grenada	4,705		4710		4745		6280	

te:	3 #4	Date:		Date:	3# 1	Date:	3# 7	Date:	3# 15	Date:	3# 1	Date:	3# 8	Date:
-22-87	1630	8-23-87		8-24-87	1675	8-25-87	1650	8-26-87	1500	8-27-87	1765	8-28-87	1760	
rs. 22		Hrs. NO-OPER-		Hrs. 16		Hrs. 21		Hrs. 22		Hrs. 19		Hrs. 13		Hrs.
Drums 12	3#15	# Drums		# Drums 18	3#2	# Drums 24	3#8	# Drums 27	3#16	#-Drums 21	3#2	# Drums 15	3#9	# Drum
es. -REO-	1585	Pres.		Pres. CREO-PENTA	1640	Pres. CREO-PENTA	1645	Pres. CREO-PENTA	1870	Pres. CREO-	1740	Pres. CREO-	1735	Pres.
c. ARKANSA	3#16	Loc.		Loc. GAINESVILLE	3#3	Loc. GAINESVILLE	3#9	Loc. GAINESVILLE	3#17	Loc. N-LITTLE ROCK	3#3	Loc. N-LITTLE ROCK	3#10	Loc.
N	1570			FLA-	1710	FLA-	1650	FLA-	1620	ARK	1780	ARK-	1690	
	3#17				3#4		3#10		3#18		3#4		3#11	
	1635				1670		1670		1620		1765		1760	
					3#5		3#11		3#19		3#5		3#12	
					1665		1670		1615		1760		1765	
					3#6		3#12		3#20		3#6			
					1595		1665		1640		1730			
							3#13		3#21		3#7			
							1610		1625		1755			
							3#14		3#22					
							1640		1610					
									3#23					
									1710					
TOTAL	6420				9955		13,200		14,910		12295		8,710	

te:	3#13	Date:	3#19	Date:	3#1	Date:		Date:		Date:		Date:		Date:
-2987	1750	8-30-87	1740	8-31-87	1555	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
rs. 22		Hrs. 13		Hrs. 18		# Drums		# Drums		# Drums		# Drums		# Drum
Drums 18	3#14	# Drums 8	3#20	# Drums 15	3#2	Pres.		Pres.		Pres.		Pres.		Pres.
es.	1770	Pres. CREO.	1755	Pres. CREO.	1530	Loc.		Loc.		Loc.		Loc.		Loc.
REO.		Loc. N. LITTLE Rock ARK.		Loc. GRENADA MS.	3#3									
c. Little Rock AR	3#15		2#21		1615									
	1760		1170											
					3#4									
	3#16				1585									
	1785													
					3#5									
	3#17				1640									
	1780													
	3#18													
	1765													
OTAL	10,610		4,665		7925									

te: 12-1-86	1#5	Date: 12-2-86	1#7	Date: 12-3-86	3#11	Date: 12-4-86	1#13	Date: 12-5-86	2#16	Date: 12-8-86	3#18	Date: 12-9-86	3#21	Date:
Hrs. 10	610	Hrs. 15	620	Hrs. 13	1900	Hrs. 12	630	Hrs. 9	1180	Hrs. 16	1900	Hrs. 22	1890	Hrs.
Drums 6	3#6	# Drums 10	3#8	# Drums 8	3#12	# Drums 8	3#14	# Drums 5	3#17	#-Drums 9	3#19	# Drums 13	3#22	# Drums
es. Creo-	1860	Pres. Creo-	1820	Pres. Creo-	1960	Pres. Creo-	1920	Pres. Creo-	1890	Pres. Creo-	1820	Pres. Creo-	1760	Pres.
f. Houston TX	2#7	Loc. Houston	3#9	Loc. Houston	2#13	Loc. Houston	3#15	Loc. Houston		Loc. Houston	3#20	Loc. Houston	3#23	Loc.
	1240		1850		1260		1940				1860		1890	
			3#10				1#16					Load End Houston 11-25-86	1#24	
			1670				590						620	
												STARTING HOUSTON 12-5	3#1	
													1890	
TOTAL	3710		5960		5120		5080		3070		5580		8050	

te: 12-19-86	3#4	Date: 12-22-86	3#8	Date: 12-23-86	3#11	Date:		Date:		Date:		Date:		Date:
rs. 20	1850	Hrs. 15	1810	Hrs. 11 3/4	1870	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
Drums 12	3#5	# Drums 9	3#9	# Drums 8	3#12	# Drums		# Drums		#-Drums		# Drums		# Drums
es. 260-	1890	Pres. Cleo-	1850	Pres. Cleo-	1840	Pres.		Pres.		Pres.		Pres.		Pres.
g. Houston	3#6	Loc. Houston	3#10	Loc. Houston	2#14	Loc.		Loc.		Loc.		Loc.		Loc.
	1810		1820		1430									
	3#7													
	1810													
TOTAL	7360		5480		4740									

START LOAD HOUSTON 12-9-86

te:	3#2	Date:	3#6	Date:	3#10	Date:	3#13	Date:	3#16	Date:	3#19	Date:	3#1	Date:
2-10-86	1820	12-11-86	1920	12-12-86	1910	12-15-86	1890	12-16-86	1850	12-17-86	1850	12-18-86	1840	
rs. 21		Hrs. 20 1/2		Hrs. 17		Hrs. 17		Hrs. 20		Hrs. 21		Hrs. 20		Hrs.
Drums 12	3#3	# Drums 12	3#7	# Drums 9	3#11	# Drums 9	3#14	# Drums 9	3#17	# Drums 12	3#20	# Drums 12	3#2	# Drum
es. Creo-	1890	Pres. Creo-	1790	Pres. Creo-	1900	Pres. Creo-	1810	Pres. Creo-	1850	Pres. Creo-	1900	Pres. Creo-	1850	Pres.
c. Houston	3#4	Loc. Houston	3#8	Loc. Houston		Loc. Houston	3#15	Loc. Houston	3#18	Loc. Houston	3#21	Loc. Houston	3#3	Loc.
7[illegible]	1840		1850				1860		1840		1880		1890	
	3#5		3#9								3#22		3#13	
	1890		1850							END LOAD HOUSTON 12-5-86	1910		1845	
OTAL	7440		7410		3810		5560		5540		7540		7425	

END GALESBURG

BEGIN HOUSTON 10-23-86

te:		Date:		Date: 11-1-86	1 #19	Date: 11-3-86	2 #19	Date: 11-4-86	2 #22	Date: 11-5-86	3 #26	Date: 11-5-86	3 #1	Date:
rs.		Hrs.		Hrs. 23¼	610	Hrs. 15	1220	Hrs. 13	1240	Hrs. 5	1800	Hrs. 14	1840	Hrs.
Drums		# Drums		# Drums 1		# Drums 9	3 #20	# Drums 11	3 #23	# Drums 3		# Drums 12	3 #2	# Drums
es.		Pres.		Pres. Culo		Pres. Culo.	1860	Pres. Culo-	1830	Pres. Culo.		Pres. Culo.	1850	Pres.
c.		Loc.		Loc. GALESBURG		Loc. GALESBURG	3 #21	Loc. GALESBURG	3 #24	Loc. GALESBURG		Loc. HOUSTON	3 #3	Loc.
							1870		1810				1800	
							1 #22		3 #25				3 #4	
							620		1860				1800	
TOTAL:					1 10		5 5 7 0		1 5 1 0		1 8 0 0		7 3 3 0	

End Houston 10/23

| | | |

Began
Gainsville
11-10-86

e:		Date: 11-14-86	3 Drum 1410	Date: 11-17-86	3#1 1490	Date: 11-18-86	3#4 1520	Date: 11-19-86	3#9 1560	Date: 11-20-86	3#13 1570	Date: 11-21-86	3#16 1500	Date:
s.		Hrs. 16		Hrs. 13		Hrs. 20		Hrs. 17		Hrs. 12		Hrs. 14		Hrs.
Drums		# Drums 12	3 Drum 1520	# Drums 9	3#2 1530	# Drums 15	3#5 1480	# Drums 12	3#10 1490	# Drums 9	3#14 1490	# Drums 7	3#17 1610	# Drum
es.		Pres. Creo		Pres. Penta		Pres. Penta		Pres. Penta		Pres. Penta		Pres. Penta		Pres.
c.		Loc. Grenada	3 Drum 1380	Loc. Gain.	3#3 1570	Loc. Gains	3#6 1540	Loc. Gains	3#11 1510	Loc. Gains.	3#15 1490	Loc. Gains.	1#18 560	Loc.
			3 Drums 1400				3#7 1600		3#12 1550					
							3#8 1510							

					END GAINESVILLE 11-10-86	BEGIN HOUSTON 11-25-86								
te:		Date: 11-24-86	2#18	Date: 11-25-86	3#22	Date: 11-26-86	3#1	Date:		Date:		Date:		Date:
			1120		1530		1900							
rs.		Hrs. 16		Hrs. 20		Hrs. 22		Hrs.		Hrs.		Hrs.		Hrs.
Drums		# Drums 17	3#19	# Drums 15	3#23	# Drums 14	3#2	# Drums		# Drums		# Drums		# Drum
es.		Pres. Penta	1550	Pres. PENTA	1600	Pres. Eco.	1950	Pres.		Pres.		Pres.		Pres.
c.		Loc. GAINESVILLE	3#20	Loc. GAINESVILLE	3#24	Loc. HOUSTON	3#3	Loc.		Loc.		Loc.		Loc.
			1520		1590		1890							
			3#21		3#25		3#4							
			1600		1510		1800							
					3#26		2#5							
					1580		1220							
TOTAL			[illegible]		7910		8710							

Oct 1986

te:		Date:	3#1	Date:	3#5	Date:	3#8	Date:	3#11	Date:	6 Drum	Date:	3#12	Date:
		10/1/86	1950	10/2/86	1710	10/3/86	1800	10.6.86	1710	10-6-86	3240	10-7-86	1680	
rs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
		14		16 1/2		16		5		10		14 1/2		
Drums		# Drums	3#2	# Drums	3#6	# Drums	3#9	# Drums		#-Drums		# Drums	3#13	# Drum
		2	1850	9	1780	9	1750	3		6		10	1790	
es.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.
		Creo		Creo		Creo		Creo		Creo		Creo		
c.		Loc.	3#3	Loc.	3#7	Loc.	3#10	Loc.		Loc.		Loc.	3#14	Loc.
		Houston	1750	Houston	1820	Houston	1750	Houston		Grenada		Houston	1710	
			3#4										1#15	
			1810										520	

End Houston 9/25/86

te:		Date: 10-8-86	2#15	Date: 10-9-86	3#18	Date: 10-10-86	3#21	Date: 10-13-86	3#23	Date: 10-14-86	1#24	Date: 10-15-86	2#2	Date:
			1040		1690		1800		1880		620		1253	
rs.		Hrs. 11		Hrs. 14		Hrs. 11		Hrs. 6		Hrs. 10		Hrs. 10		Hrs.
Drums		# Drums 8	3#16	# Drums 9	3#19	# Drums 6	3#22	# Drums 3		#-Drums 5		# Drums 5	3#3	# Drum
es.		Pres. Creo	1810	Pres. Creo	1690	Pres. Creo	1710	Pres. Creo		Pres. Creo	3#1	Pres. Creo	1900	Pres.
c.		Loc. Houston	3#17	Loc. Houston	3#20	Loc. Houston		Loc. Houston		Loc. Houston	1820	Loc. Houston		Loc.
			1500		1820						1#2			
										Begin Houston 10-7-86	627			

te:		Date: 10-16-86		Date: 10-17-86	3#7 1820	Date: 10-20-86	3#9 1790	Date: 10-21-86	3#11 1900	Date: 10-22-86	3#15 1830	Date: 10-23-86	2#18 1260	Date:
rs.		Hrs. 13	3#4 1850	Hrs. 10	3#8 1890	Hrs. 9	3#10 1830	Hrs. 19	3#12 1820	Hrs. 16½	3#16 1800	Hrs. 17½	3#19 1850	Hrs.
Drums		# Drums 9		# Drums 6		# Drums 6		# Drums 13	3#13 1850	# Drums 10	3#17 1790	# Drums 11	3#20 1850	# Drums
es.		Pres. Creo	3#5 1880	Pres. Creo		Pres. Creo		Pres. Creo	3#14 1820	Pres. Creo	1#18 630	Pres. Creo	3#21 1800	Pres.
c.		Loc. Houston	3#6 1810	Loc. Houston		Loc. Houston		Loc. Houston		Loc. Houston		Loc. Houston		Loc.

End Houston 10-7-86

Began Galesburg

te:		Date:	3 #22	Date:	3 Drum	Date:	3 #1	Date:	2 #4	Date:	3 #8	Date:	8 #12	Date:
		10-24-86	1830	10.24.86	1730	10-27-86	1860	10-28-86	1240	10-29-86	1880	10-30-86	1810	
Irs.		Hrs. 11		Hrs. 8		Hrs. 15 HRS		Hrs. 14		Hrs. 19		Hrs. 14 1/2		Hrs.
Drums		# Drums 7	3 #23	# Drums 9		# Drums 10	3 #2	# Drums 11	3 #5	#-Drums 12	3 #9	# Drums 12	3 #13	# Drus
es.		Pres. Creo	1900	Pres. Creo		Pres. Creo	1850	Pres. Creo	1810	Pres. Creo	1810	Pres. Creo	1790	Pres.
c.		Loc. Houston		Loc. Grenada		Loc. Galesburg		Loc. Galesburg		Loc. Galesburg		Loc. GALESBURG		Loc.
			1 #24				3 #3		3 #6		3 #10		3 #14	
			610				1840		1870		1900		1870	
							1 #4		3 #7		3 #11		3 #15	
							620		1790		1860		1810	

:e:		Date: 10-31-86	3#16 1800	Date:		Date:		Date:		Date:		Date:		Date:		Date:	
rs.		Hrs. 1/1		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.	
Drums		# Drums 9	3#17 1750	# Drums		# Drums		# Drums		#-Drums		# Drums		# Drums		# Drum:	
es.		Pres. Creo		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.	
:		Loc. Galesburg	3#18 1820	Loc.		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.	

#1
Aug

Date: 8-1-86		Date: 8-2-86		Date: 8-4-86		Date: 8-5-86		Date: 8-6-86		Date: 8-7-86		Date: 8-8-86			
Hrs. 16		Hrs. 19		Hrs. 11		Hrs. 14		Hrs. 18½		Hrs. 15		Hrs. 5			Date
# Drums 15		# Drums 15		# Drums 12		# Drums 16		# Drums 20		# Drums 18		# Drums 4			Hrs.
Pres. 200-		Pres. Creo-		Pres. Creo-		Pres. Creo-		Pres. Creo-		Pres. Creo		Pres. Creo-			# Dr
Loc. HOUSTON		Loc. HOUSTON		Loc. HOUSTON		Loc. HOUSTON		Loc. HOUSTON		Loc. HOUSTON		Loc. HOUSTON			Pres
															Loc.
3#14		3#19		3#1		3#5		2#10		3#17		3#23			
2065		2015		2100		2045		1380		2060		2540			
3#15		3#20													
2040		2070		3#2		3#6		3#11		3#18		1#24			
3#16		3#21		2070		2105		2080		2035		870			
2070		1970													
3#17		3#22		3#3		3#7		3#12		3#19					
2010		2090		2075		2015		2065		2070					
3#18		3#23													
1820		2090		3#4		3#8		3#13		3#20					
				2115		2040		2040		2040					
						3#9		3#14		3#21					
						1910		2055		2080					
						1#10		3#15		3#22					
						690		2040		1700					
								3#16							
								2080							
TOTAL	10,005		10235		8360		10,805		13,540		11,985		3410		

#2
Orig

te: 7-8-86	4 Drums	Date: 8-11-86	8 Drums	Date: 8-12-86	12 Drums	Date: 8-13-86	3#1	Date: 8/14/86	3#9	Date: 8-15	3#27	Date: 8-16	3#18
rs. 5	2030	Hrs. 13	4350	Hrs. 13	5760	Hrs. 17½	1820	Hrs. 13½	1720	Hrs. 13	1710	Hrs. 19	Date:
Drums		# Drums 8		# Drums 12		# Drums 24	3#2	# Drums 13	3#10	#-Drums 15	3#17	# Drums 18	Hrs.
s. 210		Pres. Creo		Pres. Creo		Pres. CREO	1730	Pres. Creo	1810	Pres. Creo	1820	Pres. Creo	# Drums 20
c. FREMONT		Loc. Fremont		Loc. Fremont		Loc. NLR	3#3	Loc. NLR	3#15	Loc. NLR	3#16	Loc. NLR	Pres.
							1730		1830		1790		Loc.
							3#4		3#22		3#26		3#12
							1790		1840		1750		1760
							3#5		3#8		3#23		3#13
							1710		1750		1780		1790
							3#6						3#14
							1780						1720
							3#7						3#19
							1810						1790
							3#11						
							1730						
													10590

Aug 3

te:		Date: 8-18	3 Drums 1270	Date: 8-19	3#21 1840	Date: 8-20	2#21 1810	Date: 8-20	1 Drum 2150	Date: 8-21	15 Drums 6300	Date: 8-22	1#1 560	Date:
rs.		Hrs. 4		Hrs. 10	3#24 1790	Hrs. 3		Hrs. 16	1 Drum 1818	Hrs. 17		Hrs. 19		Hrs.
Drums		# Drums 3		# Drums 6		# Drums 3		# Drums 2 Drum		# Drums 15		# Drums 22	3#2 1710	# Drums
es.		Pres. Crew		Pres. Crew		Pres. Crew		Pres. Crew		Pres. Crew		Pres. Crew		Pres.
:.		Loc. Grenada		Loc. NLR		Loc. NLR		Loc. Grenada		Loc. Grenada		Loc. Mart. Ar.	3#3 1720	Loc.
													3#4 1720	
													3#5 1720	
													3#6 1690	
													3#7 1740	
													3#17 1730	
TAL			1270		3630									

#4
Aug.

	Date: 8-23-86	3#8	Date: 8-23-86	3#12	Date: 8-26-86	3#18	Date: 8-27-86	3#22	Date: 8-28-86	3-Drum	Date: 8-29-86	2 Drum	Date:
	Hrs. 11	1710	Hrs. 13	1750	Hrs. 14	1750	Hrs. 18	1740	Hrs. 18	1580	Hrs. 3	650	Hrs.
	# Drums 12	3#9	# Drums 13	3#13	# Drums 12	3#19	# Drums 9	3#23	# Drums 9	3 Drum	# Drums 2		# Drum
	Pres. Creo	1830	Pres. Creo	1720	Pres. Creo	1750	Pres. Creo	1750	Pres. Creo	1670	Pres. Creo		Pres.
	Loc. Mont. Pa	3#10	Loc. Mont. Pa	3#14	Loc. Mont Pa	3#20	Loc. Mont-Pa	3#24	Loc. Grenada	3 Drum	Loc. Grenada		Loc.
		1780		1710		1720		1750		1490			
		3#11		3#15		3#21							
		1750		1770		1760							
				3#16									
				1800									

Aug. #5

		Date: 8-29-86		3 #1		Date: 8-30-86		3 #4		Date:		Date:		Date:		Date:		Date:	
		Hrs. 7		1280		Hrs. 12		1690		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.	
		# Drums 7		3 #2		# Drums 9		3 #5		# Drums		# Drums		# Drums		# Drums		# Drums	
		Pres. Punta		1230		Pres. Punta		1720		Pres.		Pres.		Pres.		Pres.		Pres.	
		Loc. Oroville		1 #3		Loc. Oroville		3 #6		Loc.		Loc.		Loc.		Loc.		Loc.	
				510				1280											

#3
Sept.

ate:		Date: 9-30-86	3#18	Date:		Date:		Date:		Date:		Date:		Date:
Hrs.		Hrs. 15	1600	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
Drums		# Drums 11	3#19	# Drums		# Drums		# Drums		# Drums		# Drums		# Dru
res.		Pres. Cleo	1610	Pres.		Pres.		Pres.		Pres.		Pres.		Pres.
oc.		Loc. Houston	3#20	Loc.		Loc.		Loc.		Loc.		Loc.		Loc.
			1610											
			3#21											
			1140											
TOTAL			5920											

#4 Sept.

ate:		Date: 9-24-86	3#13	Date: 9-25-86	2#16	Date: 9-26	3#20	Date: 9-27 & 28		Date: 9-29-86	2#23	Date: 9-29-86	3#14	Date:
Hrs.		Hrs. 17	1840	Hrs. 18	1220	Hrs. 19	1840	Hrs. No operation		Hrs. 7	1287	Hrs. 5 1/2	1600	Hrs.
Drums		# Drums 10	3#14	# Drums 11	3#17	# Drums 10	3#21	# Drums		# Drums 4	2#24	# Drums 4	1#15	# Drum
res.		Pres. Creo	1810	Pres. Creo	1870	Pres. Creo	1790	Pres.		Pres. Creo	1360	Pres. Creo	510	Pres.
oc.		Loc. Guthrie	3#15	Loc. Guthrie	3#18	Loc. Guthrie	3#22	Loc.		Loc. Guthrie		Loc. Houston		Loc.
			1910		1900		1930							
			1#16		3#19		1#23							
			610		1790		643							
TOTAL			6170		6780		6203				2647		2110	

#3
Sept.

| | | |

Sept. 2

Sat.

e:		Date: 9-10-86	3#26	Date: 9-11-86	3#1	Date: 9-12	3#6	Date: 9-13	3#12	Date: 9-15	3#17	Date: 9-16	1#21	Date:
s.		Hrs. 22	1590	Hrs. 16	1490	Hrs. 17	1560	Hrs. 6½	1630	Hrs. 11	1120	Hrs. 13	570	Hrs.
Drums		# Drums 9	3#28	# Drums 15	3#2	# Drums 18	3#7	# Drums 6	3#13	# Drums 8	3#16	# Drums 8	3#22	# Drum
es.		Pres. Perla	1550	Pres. Creo	1550	Pres. Creo	1510	Pres. Creo	1560	Pres. CREO	1740	Pres.	1570	Pres.
.		Loc. Arrivals	3#29	Loc. Houston	3#3	Loc. Houston	3#8	Loc. Houston		Loc. HOUSTON	2#15	Loc. Houston	3#23	Loc.
			1630		1550		1550				1550		1610	
					3#4		3#9						1#24	
					1520		1540						560	
					3#5		3#10							
					1550		1490							
							3#11							
							1510							
TAL			4770		7660		9160		3190		[illegible]		[illegible]	

Sept.

te:		Date: 9-3-86	2 #3	Date: 9-3-86	3 #9	Date: 9-4-86	3 #12	Date: 9-5-86	3 #16	Date: 9-8	3 #20	Date: 9-9	3 #23	Date:
rs.		Hrs. 13	1020	Hrs. 15	1680	Hrs. 17	1170	Hrs. 21	1400	Hrs. [illegible]	1490	Hrs. 19	1610	Hrs.
Drums		# Drums 8	3 #7	# Drums [illegible]	3 #10	# Drums [illegible]	3 #13	# Drums [illegible]	3 #17	# Drums [illegible]	3 #21	# Drums 12	3 #24	# Drum
es.		Pres. Penta	1260	Pres. Penta	1590	Pres. Penta	1540	Pres. Penta	1350	Pres. Penta	1530	Pres. Penta	1530	Pres.
c.		Loc. Arvin	3 #8	Loc. Arvin	3 #11	Loc. Arvin	3 #14	Loc. Arvin	3 #18	Loc. Arvin	3 #22	Loc. Arvin	3 #25	Loc.
			1620		1610		1480		1490		1490		1550	
							3 #15		3 #19				3 #27	
							1490		1510				1430	
'81			3900		4280		5680		[illegible]		4510		6120	

| | | |

te:	6 DRUMS	Date:	4 DRUMS	Date:	4 DRUMS	Date:	5 DRUMS	Date:	5 DRUMS	Date:	4 DRUMS	Date:	3 DRUMS	Date:
7-11-86	2820	7-12-86	1680	7-13-86	1760	7-14-86	2010	7-15-86	2260	7-16-86	1750	7-17-86	1370	
Hrs. 17 1/2		Hrs. 17		Hrs. 10		Hrs. 14		Hrs. 14 1/2		Hrs. 18		Hrs. 18		Hrs.
Drums 6		# Drums 4		# Drums 4		# Drums 5		# Drums 5		#--Drums 4		# Drums 3		# Dru
es. REO-		Pres. CREO-		Pres. CREO-		Pres. CREO-		Pres. CREO-		Pres. CREO-		Pres. CREO-		Pres.
oc. RENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc.
TOTAL	2820		1680		1760		2010		2260		1750		1370	

ate:	4 DRUMS	Date:	5 DRUMS	Date:	3#11	Date:	1#2	Date:	3#15	Date:	3#10	Date:	3#7	Date:
7-18-86	1860	7-19-86	1830	7-21-86	1750	7-22-86	617	7-23-86	1750	7-24-86	1800	7-25-86	1850	
Hrs. 13		Hrs. 14		Hrs. 14 1/2		Hrs. 16 1/2	3#18	Hrs. 15 1/2	3#20	Hrs. 18	3#13	Hrs. 17	3#8	Hrs.
# Drums 4		# Drums 5		# Drums 6	3#12	# Drums 19	1600	# Drums 9	2300	# Drums 15	1950	# Drums 16	1250	# Dru
Pres. CREO-		Pres. CREO-		Pres. CREO	1750	Pres. CREO-	3#19	Pres. CREO-	3#21	Pres. CREO-	3#16	Pres. CREO	3#9	Pres.
Loc. GRENADA		Loc. GRENADA		Loc. SUPERIOR		Loc. SUPERIOR	1600	Loc. SUPERIOR	1750	Loc. SUPERIOR	1900	Loc. SUPERIOR	1600	Loc.
							3#24				3#14		3#6	
							1900				1850		1250	
							3#23				3#17		3#5	
							1600				2250		1950	
							3#22						1#4	
							2150						583	
							3#25							
							1700							
TOTAL	1860		1830		3500		11,167		5800		9750		9483	

Date: 7-26-86	2#4	Date: 7-28-86	2#2	Date: 7-29-86	3#3	Date: 7-30-86	3#2	Date: 7-31-86	3#8	Date:		Date:		Date
Hrs. 9	1167	Hrs. 10½	1233	Hrs. 16	2020	Hrs. 17	2050	Hrs. 17	1980	Hrs.		Hrs.		Hrs.
# Drums 5	3#1	# Drums 5	3#3	# Drums 7	3#4	# Drums 15	3#1	# Drums 18	3#9	#-Drums		# Drums		# Dr
Pres. CREO-	1850	Pres. CREO-	1750	Pres. CREO-	2070	Pres. CREO-	2040	Pres. CREO	2070	Pres.		Pres.		Pres
Loc. SUPERIOR		Loc. SUPERIOR		Loc. HOUSTON	1#24	Loc. HOUSTON	3#5	Loc. HOUSTON	3#10	Loc.		Loc.		Loc.
					680		2010		2010					
							3#6		3#11					
							2090		2040					
							3#7		3#12					
							2090		2030					
									3#13					
									2080					
TOTAL	3017		2983		4770		10,280		12,210					

...te: ...-2-86	1 DRUM	Date: 6-3-86	1 Dump	Date: 6-4-86	3 #13	Date: 6-5-86	1 #10	Date: 6-6-86	1 Dump	Date: 6-7-86	6 Drums	Date: 6-9-86	2 Drums	Date:
Hrs. 2	300	Hrs. 14	2200	Hrs. 8	1400	Hrs. 19	500	Hrs. 18 1/2	1850	Hrs. 9	1920	Hrs. 2	500	Hrs.
# Drums 1		# Drums 1 Dump		# Drums 6	2 #9	# Drums 8	1 #9	# Drums 2 Dump	1 Dump	# Drums 6		# Drums 2		# Dru
...es. ...eo-		Pres. Creo-		Pres. CREO	933	Pres. Creo-	467	Pres. Creo-	2150	Pres. Creo-		Pres. Creo-		Pres.
...oc. ...RENADA		Loc. GRENA		Loc. SUPERIOR	1 #10	Loc. SUPERIOR	3 #12	Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc.
					500		1400							
							3 #7							
							1400							

te:	2 DRUMS	Date:	2 DRUMS	Date:	6 DRUMS	Date:	6 DRUMS	Date:	3 DRUMS	Date:	0	Date:	0	Date:
-10-86	690	6-11-86	750	6-12-86	2800	6-13-86	2700	6-16-86	1680	6-17-86		6-18-86		
Hrs. 5		Hrs. 3		Hrs. 9		Hrs. 10		Hrs. 6		Hrs. 1		Hrs.		Hrs.
Drums 2		# Drums 2		# Drums 6		# Drums 6		# Drums 3		# Drums		# Drums		# Drums
es. REO.		Pres. CREO		Pres. CREO-		Pres. CREO.		Pres. CREO-		Pres.		Pres.		Pres.
c. RENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc.		Loc.		Loc.

ate: -19-86	1 DRUM	Date: 6-20-86	3 DRUMS	Date: 6-21-86	2 DRUMS	Date: 6-22-86	6 DRUMS	Date: 6-23-86	1 #10	Date: 6-24-86	3 #6	Date: 6-25-86	3 #1	Date:
Hrs. 3	210	Hrs. 6	1160	Hrs. 3	590	Hrs. 7	2280	Hrs. 6	500	Hrs. 6	1500	Hrs. 15	1400	Hrs.
Drums 1		# Drums 3		# Drums 2		# Drums 6		# Drums 4	3 #8	#-Drums 4	1 #4	# Drums 8	3 #2	# Dru
res. REO-		Pres. CREO.		Pres. CREO.		Pres. CREO.		Pres. CREO.	1300	Pres. CREO-	533	Pres. CREO-	1550	Pres.
oc. RENADA		Loc. GRENADA		Loc. GRENADA		Loc. GRENADA		Loc. SUPERIOR		Loc. SUPERIOR		Loc. SUPERIOR	2 #4	Loc.
													1066	

te:	3#5	Date:	2 Dumps	Date:	3 Drums	Date:	1 Drum	Date:	0	Date:		Date:		Date:
-26-86	1500	6-27-86	2700	6-28-86	1450	6-29-86	320	6-30-86		Hrs.		Hrs.		Hrs.
rs. 14		Hrs. 15		Hrs. 18		Hrs. 2		Hrs. 0		#-Drums		# Drums		# Drum
Drums 6	3#3	# Drums 2 Dump		# Drums 12	3 Drums 1410	# Drums 1		# Drums		Pres.		Pres.		Pres.
es.	1400	Pres. Creo-		Pres. CREO-		Pres. Creo-		Pres.		Loc.		Loc.		Loc.
CREO,		Loc. GRENADA		Loc. GRENADA	3 Drums 800	Loc. GRENADA		Loc.						
c.					3 Drums 1500									
PERIOR														

te: 5-1-86		Date: 5-2	1050	Date: 5-3		Date: 5-4		Date: 5-5		Date: 5-6-86	3#29	Date: 5-7-81	3#26	Date:
rs. 0		Hrs. 3		Hrs. 0		Hrs. 0		Hrs. 0		Hrs. 7	2050	Hrs. 15	1950	Hrs.
Drums		# Drums 2		# Drums		# Drums		# Drums		# Drums 8	3#28	# Drums 16	3#24	# Drum
es.		Pres. Cleo-		Pres.		Pres.		Pres.		Pres. Cleo-	1900	Pres. Cleo-	2080	Pres.
c.		Loc. GRENADA		Loc.		Loc.		Loc.		Loc. ORRVille CALIF	2#27 1254	Loc. ORRVille CALIF	3#25 1760	Loc.
													1#27 696	
													3#21 2000	
													3#23 1800	
TOTAL	0		1050		0		0		0		5204		10,286	

| | | |

te: 5-15-86	3#8	Date: 5-16	3 DRUMS	Date: 5-17	3 DRUMS	Date: 5-18	0	Date: 5-19	0	Date: 5-20	0	Date: 5-21	0	Date:
rs. 2½	1700	Hrs. 15	1565	Hrs. 13	1475	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
Drums 8	3#1	# Drums 8	3 DRUMS	# Drums 7	3 DRUMS	# Drums		# Drums		# Drums		# Drums		# Drum
es. reo-	1700	Pres. Creo-	1615	Pres. Creo-	1560	Pres.		Pres.		Pres.		Pres.		Pres.
c. RRISVILLE A	2#4	Loc. GRENADA MS-	2 DRUMS 1060	Loc. GRENADA MS-	1 DRUM 570	Loc.		Loc.		Loc.		Loc.		Loc.
	966													
TAL	4366		4240		3605		0		0		0		0	

te: -22-86	3#26	Date: 5-23	3#23	Date: 5-24	3#19	Date: 5-25	0	Date: 5-26	0	Date: 5-27	3#17	Date: 5-28	3#15	Date:
Hrs. 9	1800	Hrs. 11	1600	Hrs. 6	1400	Hrs.		Hrs.		Hrs. 9 1/2	1600	Hrs. 12	1400	Hrs.
Drums 8	2#27	# Drums 12	3#22	# Drums 6	3#18	# Drums		# Drums		#-Drums 6	3#16	# Drums 12	3#14	# Drums
res. heo	1300	Pres. Cleo-	1400	Pres. Cleo-	1600	Pres.		Pres.		Pres. Cleo-	1500	Pres. Cleo-	1550	Pres.
oc. SUPERIOR	3#24	Loc. SUPERIOR	3#21	Loc. SUPERIOR		Loc.		Loc.		Loc. SUPERIOR		Loc. SUPERIOR	3#11	Loc.
WI	1400	WI	1400	WI						WI		WI	1400	
			3#20										3#25	
			1600										1400	
TOTAL	4500		6000		3000		0		0		3100		5750	

ate:	1 Dump	Date:	1 Dump	Date:	2 DRUMS	Date:		Date:		Date:		Date:		Date:
-2886	4100	5-30	3700	5-31	900									
Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.
19		12½		3										
Drums	1 Dump	# Drums		# Drums		# Drums		# Drums		# Drums		# Drums		# Drum
Dump	3600	1 Dump		2										
ses.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.		Pres.
eo-		Creo-		Creo-										
oc.		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.		Loc.
RENADA		GRENADA		GRENADA										
MS		MS-		MS-										
OTAL	7700		3700		900									

Date: 3-3-86		Date: 3-4-86		Date: 3-5-86		Date: 3-6-86		Date: 3-7-86		Date: 3-10-86		Date: 3-11-86		Date
Hrs. 9	3#25	Hrs. 15	2#24	Hrs. 13	1#20	Hrs. 17	3#16	Hrs. 13	3#7	Hrs. 8	3#4	Hrs. 14	2#20	Hrs
# Drums 9	1300	# Drums 15	933	# Drums 16	533	# Drums 10	1700	# Drums 17	1650	# Drums 7	1700	# Drums 4	1066	# Dr
Pres. Creo-	3#26	Pres. Creo-	2#23	Pres. Creo.	1#21	Pres. Creo-	3#13	Pres. Creo.	2#9	Pres. Creo.	3#6	Pres. Creo.	1#21	Pres
Loc. SESQ-PA	1400	Loc. SESQ, PA.	933	Loc. Sesq. PA.	467	Loc. SESQ, PA.	1600	Loc. SESQ, PA.	1167	Loc. SESQ, PA.	1550	Loc. SESQ, PA.	667	Loc
	1#24		1#21		2#17		3#8		3#2		1#17		1#22	
	467		467		1134		1800		1900		567		500	
	1#23		1#22		3#16		1#9		3#5					
	467		500		1400		583		1900					
	1#22		3#15		3#12				3#1					
	500		1400		1400				1600					
			3#19		3#14				3#3					
			1400		1450				1850					
			3#18		3#11									
			1400		1700									
TOTAL	4134		7033		9084		5683		10,067		3817		2233	

Date: 3-13-86	2 DR. 960	Date: 3-14-86	2 DR. 1280	Date: 3-17-86	3 #9 1550	Date: 3-18-86	3 #22 1350	Date: 3-19-86	3 #12 1450	Date: 3-20-86	3 DR. 1450	Date: 3-21-86	3 DR. 1510	Dat
Hrs. 6		Hrs. 11		Hrs. 13		Hrs. 18	3 #25 1400	Hrs. 21	3 #21 1350	Hrs. 13	3 DR. 1620	Hrs. 13	3 DR. 1630	Hrs
# Drums 8	3 DR. 1640	# Drums 7	2 DR. 1020	# Drums 6	3 #11 1300	# Drums 7	1 #23 483	# Drums 8	2 #26 1050	# Drums 12	3 DR. 1410	# Drums 9	3 DR. 1600	# D
Pres. Creo-		Pres. Creo-		Pres. Creo-		Pres. Creo-		Pres. Creo-		Pres. Creo-	3 DR. 1650	Pres. Creo-		Pre
Loc. GRENADA MS-	3 DR. 1520	Loc. GRENADA MS-	3 DR. 1700	Loc. GAINS-FLA.		Loc. GAINS-FLA.		Loc. GAINS-FLA-		Loc. GRENADA MS-		Loc. GRENADA MS.		Loc
TOTAL	4120		4000		2850		3233		3850		6130		4740	

Date: 3-24-86	3#20	Date: 3-25-86	2 #23	Date: 3-26-86	3#24	Date: 3-27-86	3#15	Date:		Date:		Date:		Dat
Hrs. 8 1/2	1450	Hrs. 21	966	Hrs. 17	1550	Hrs. 14	1370	Hrs.		Hrs.		Hrs.		Hrs
# Drums 3		# Drums 8	3#18	# Drums 6	2#19	# Drums 5	2#14	# Drums		# Drums		# Drums		# D
Pres. Cleo-		Pres. Cleo-	1530	Pres. Cleo-	1000	Pres. Cleo-	1033	Pres.		Pres.		Pres.		Pre
Loc. GAINS. FLA.		Loc. GAINS. FLA.	1#19	Loc. GAINS. FLA.	1#13	Loc. GAINS. FLA.		Loc.		Loc.		Loc.		Loc
			500		510									
			1#14											
			517											
			1#3											
			516											
TOTAL	1450		4029		3060		2403							

Date: 2/3/86		Date: 2/4/86		Date: 2/5/86		Date: 2/6/86		Date: 2/7/86		Date: 2/10/86		Date: 2/11/86		Dat
Hrs. 8		Hrs. 16		Hrs. 17½		Hrs. 16½		Hrs. 15½		Hrs. 9½		Hrs. 18½		Hrs
# Drums 9		# Drums 21		# Drums 9		# Drums 9		# Drums 9		# Drums 6		# Drums 13		# D
Pres. Creo-Penta		Pres. Creo-Penta		Pres. CREO.		Pres. CREO.		Pres. CREO.		Pres. CREO.		Pres. CREO.		Pre
Loc. DENVER		Loc. DENVER		Loc. SUPERIOR		Loc. SUPERIOR		Loc. SUPERIOR		Loc. SUPERIOR		Loc. SUPERIOR		Loc
3 #12		3 #11		3 #12		3#15		3 #7		3 #1		3 #8		
1570		1470		1700		1900		1820		2040		1750		
		3 #8		3 #13		3#9		3 #5		3 #2		3 #11		
3 #13		1300		1750		1750		1920		1870		1600		
1570		3 #9		3 #14		3#10		3 #6				1 #16		
3 #10		1370		2200		1650		1700				550		
1670		3 #5										3 #17		
		1400										1990		
		3 #7										3 #		
		1400										1790		
		3 #4												
		1340												
		3 #6												
		1450												
TOTAL	4810		9730		5650		5300		5440		3910		7680	

SAME DATE

Date: 2/12/86	3 #3	Date: 2/12/86	3#1	Date: 2/13/86		Date: 4/14/86		Date: 2/17/86	3 #6	Date: 2/18/86	3#4	Date: 2/19/86	3 #1	Dat
Hrs. 15	1600	Hrs.	1500	Hrs. 5	1700	Hrs. 13	3600	Hrs. 5	1750	Hrs. 14	1650	Hrs. 9	1750	Hr
# Drums 3		# Drums 9	3#2	# Drums 3		# Drums 6		# Drums 6	3#5	# Drums 18	3#3	# Drums 12	3#10	#
Pres. CREO.		Pres. CREO-PENTA	1550	Pres. CREO.		Pres. CREO.		Pres. CREO.	1700	Pres. CREO.	1750	Pres. CREO.	1650	Pre
Loc. SUPERIOR		Loc. DENVER	3#3	Loc. GRENADA		Loc. GRENADA		Loc. FLORENCE		Loc. FLORENCE	3#2	Loc. FLORENCE	3#17	Loc
			1600								1800		1650	
											3#8		3#14	
											1700		1550	
											3#9			
											1650			
											3#7			
											1600			
TOTAL	1600		4650		1700		3600		3450		10150		4600	

Date: 2/20/86	3 #15	Date: 2/21/86	2 #24	Date: 2/24/86	3 #22	Date: 2/25/86	3 #20	Date: 2/26/86	3 #18	Date: 2/27/86	3 #13	Date: 2/28/86	1650	Dat
Hrs. 10	1600	Hrs. 10	1050	Hrs. 13	1650	Hrs. 10	1650	Hrs. 5	1600	Hrs. 16 1/2	1600	Hrs. 7		Hrs
# Drums 6	3 #16	# Drums 5	3 #23	# Drums 6	3 #21	# Drums 6	3 #19	# Drums 3		# Drums 9	3 #11	# Drums 3		# D
Pres. CREO.	1600	Pres. CREO.	1650	Pres. CREO.	2050	Pres. CREO.	1800	Pres. CREO.		Pres. CREO.	1600	Pres. CREO.		Pre
Loc. FLORENCE		Loc. FLORENCE		Loc. FLORENCE		Loc. FLORENCE		Loc. FLORENCE		Loc. FLORENCE	3 #12	Loc. GRENADA		Loc
											1400			
TOTAL	3200		2700		3700		3450							

SLUDGE FEEDER CHART MISSING.

Date: 1-7-86	3#1	Date: 1-8-86	3#2	Date: 1-9-86	3#24	Date: 1-10-86	3#22	Date: 1-14-86	3#10	Date: 1-15-86	3#18	Date: 1-16-86	3#13	Date
Hrs. 5	1450	Hrs. 5	1550	Hrs. 12	1750	Hrs. 19	2050	Hrs. 5	1850	Hrs. 8	1650	Hrs. 19	2150	Hrs.
# Drums 3		# Drums 3		# Drums 8	3#23	# Drums 12	3#21	# Drums 3		# Drums 11	3#17	# Drums 15	3#14	# Dr
Pres. Creo		Pres. Creo		Pres. Creo-	1700	Pres. Creo-	1550	Pres. Creo-		Pres. Creo	1650	Pres. Creo-	1700	Pres
Loc. NLR		Loc. NLR		Loc. NLR	2#25	Loc. NLR	3#20	Loc. NLR		Loc. NLR	3#16	Loc. NLR	3#15	Loc.
					1200		1550				1600		1650	
							3#12				2#7		3#9	
							1750				1166		2100	
													3#19	
													2250	
TOTAL	1450		1550		4650		6900		1850		6066		9850	

Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:	
1-17-86	3#3	1-20-86	2#6	1-21-86	1#6												
Hrs. 12	1750	Hrs. 4	1300	Hrs. 11	650	Hrs.		Hrs.		Hrs.		Hrs.		Hrs.		Hrs.	
# Drums 10	3#11	# Drums 2		# Drums 7	3#5	# Drums		# Drums		# Drums		# Drums		# Drums		# Drums	
Pres. 110	1650	Pres. Cleo		Pres. Cleo	1350	Pres.		Pres.		Pres.		Pres.		Pres.		Pres.	
Loc. NLR	3#8	Loc. NLR		Loc. NLR	3#4	Loc.		Loc.		Loc.		Loc.		Loc.		Loc.	
	1850				1700												
	1#7																
	584																
TOTAL	5834		1300		3700												

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

FILE WITH APPL.

SITE INSPECTION
PROPOSED AIR EMISSIONS SOURCE

I. ADMINISTRATIVE INFORMATION

A. Facility Name: Koppers, Inc.

Address: Tie Plant, Mississippi
P.O. Box 160

Phone No.: 226-4584

B. Proposed Source Location: _____

C. Key Data: 1310 019610 01010112

D. Engineer: _____

Address: _____

Phone No.: _____

E. Person to Contact: Dam Fay

Address: P.O. Box 160
Tie Plant, Mississippi

Phone No.: 226-4584

II. TECHNICAL INFORMATION

A. Type Project: _____

B. Type Emissions: _____

C. Type Control: _____

III. SITE REPORT

A. Site is:

✓ Urban
____ Suburban
____ Rural

What city? Tic Plant
suburbs of Grenada

B. Distances and directions to all homes, businesses, roadways, etc., from center of site:

There is a residential section along the north, northeast, and northwest property lines. The North property line is .5 mile from the proposed boiler site. The Post Office and main entrance road is ~.2 mile and Hwy 51 is .6 mile. McQuay Company is located along the south west boundary ~.6 mile from the proposed boiler site.

Distances were: ____ Estimated
X Measured How? truck odometer

C. Describe location of any hospitals, nursing homes, schools, day care centers, etc., in area:

school lies .3 mile from north property line of plant.

D. Describe other surrounding area not in (B) above:

The south and southeast surrounding area is wooded and open fields. The Koppers, Inc. owns ~150 acres

E. Site Terrain:

1. Site Elevation is:
   - ____ Higher than surroundings
   - ____ Lower than surroundings
   - X Same as surroundings

2. Lay of the land in and around site is:
   - X Flat
   - ____ Sloping one direction
     - ____ Steeply
     - ____ Gently
     - ____ Direction of slope is down to _____
   - ____ Rolling (small hills)
   - ____ Hilly (steep hills)

3. Comments on terrain: _____

F. Site Access:

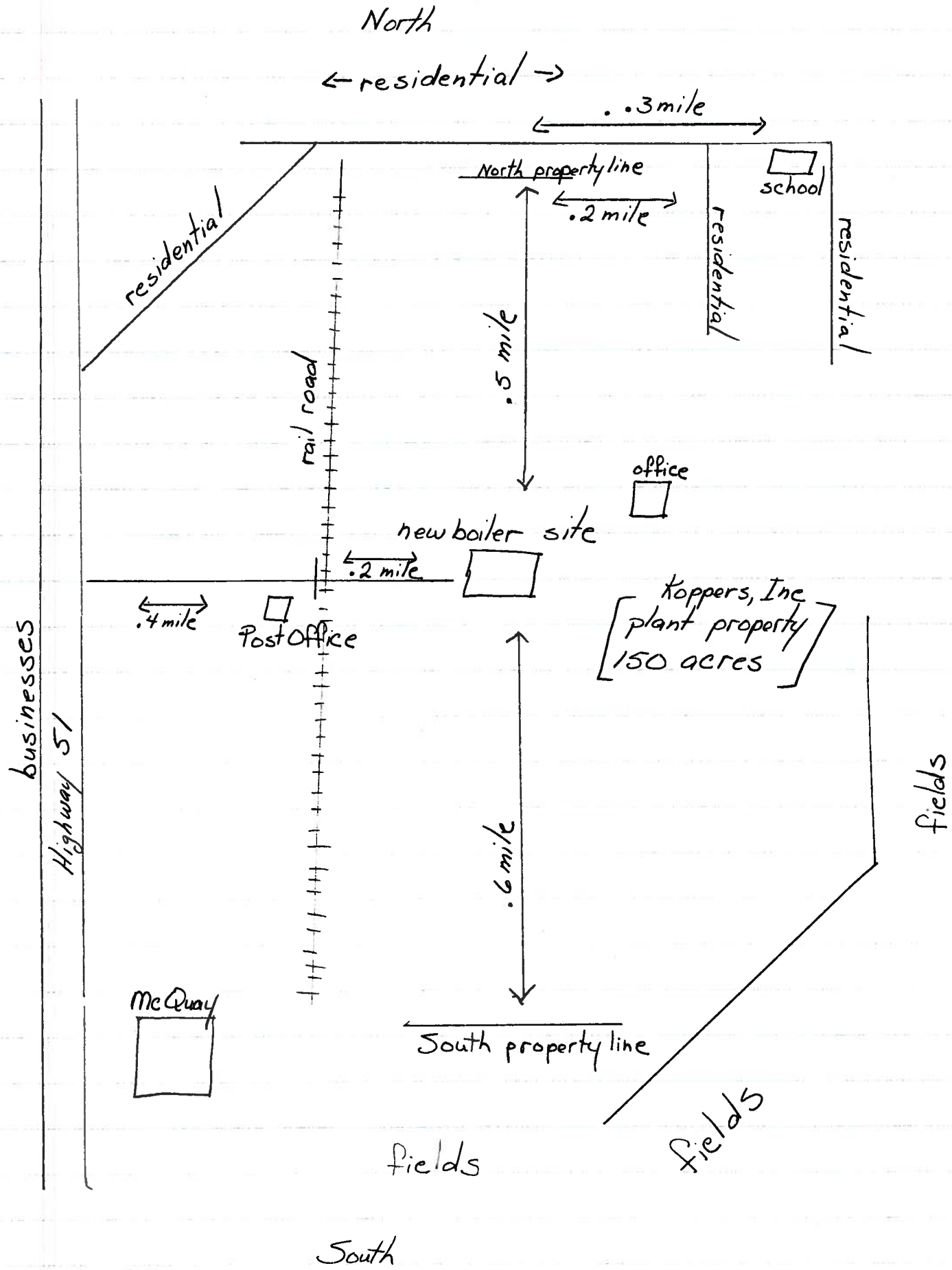
1. Describe intersection and route of existing and/or proposed access roads to site: The Tie Plant road off highway 51 is ¼ & mile before plant entrance. All roads on the plant property are gravel.

2. Type (construction) of roads:
   - X Unpaved
     - X Gravel
     - X Native soil
   - ____ Paved
     - ____ Asphalt
     - ____ Concrete

G. Attach a detailed, scaled sketch (plan review) of the site and surroundings using the following criteria:

1. Urban and Suburban Sites - Show surroundings for at least one block on all sides.
2. Rural Sites - Show surroundings out to at least a 1/2 mile radius.
3. Identify any buildings, hills, and/or vegetation which is likely to be taller than the point(s) of emission and which intervene between the site and other identified surroundings.
4. Identify hospitals, etc., described in III. C.
5. Identify terrain features described in III. E.

Tie Plant, Mississippi
Koppers, Inc.



IV. Remarks: The proposed boiler site is slightly north of the old boiler. This appears to be centrally located and a satisfactory site.

The new boiler will not be completed until November, 1978.

Requested by: Wayne Andersen

Date: Nov. 8, 1977

Performed by: Jason C. Henley /KH

Date: November 9, 1977

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 3896
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
DEC 16 1985
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

December 12, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39205

RE: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for November, 1985:

1. Weights of each individual container of waste with the sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. Clayton

JDC/djm

cc: File

Enclosures

November 27, 1985

DATA CODED

Mr. J. D. Clayton, Acting Plant Manager
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Mississippi 38950

Dear Mr. Clayton:

Re: Operating Permit No. 0960-00012
Tie Plant, Mississippi

Enclosed please find Operating Permit No. 0960-00012 issued for the operation of the air emissions equipment at the above referenced facility. This permit should be displayed prominently at the facility. Operation of the air emissions equipment at the facility shall be in accordance with the conditions of the permit.

Any significant modification to this process or facility which will alter the rate or composition of air pollutant emissions will cause this permit to become invalid. Should you wish to make such a modification, it will be necessary to submit a new application for a construction permit.

This permit expires on December 1, 1988. A new permit application must be submitted one hundred and eighty (180) days prior to this date in order to renew this permit.

If you desire that a Permit Board hearing be held regarding this permit, you should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations in the permit shall become final.

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

Very truly yours,

Dan N. McLeod
North Emissions Section

DNM:cl
Enclosure

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

Nevada

KOPPERS

Architectural and
Construction Materials

RECEIVED
NOV 12 1985
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

November 8, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39205

RE: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for October, 1985:

1. Weights of each individual container of waste with the sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. Clayton

JDC/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

Grenada

KOPPERS
Architectural and
Construction Materials

RECEIVED
OCT 15 1985
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

October 11, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for September, 1985.

1. Weights of each individual container of waste with the sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. Clayton

JDC/djm

cc: File

Enclosures

October 9, 1985

Mr. John T. Kane, Jr.
Koppers Company, Inc.
Environmental Resources
440 College Park Drive
Monroeville, Pennsylvania 15146

Dear Mr. Kane:

Re: Koppers Company, Inc.
Grenada Plant
Source No. 0960-00012
Grenada, Mississippi

Excuse my delay in responding to you on the issue of burning cross ties butts at the Grenada Plant. We have reviewed your request and feel the permit could be modified to allow the burning of these cross ties, during which time stack emission testing shall be performed at agreed parameters and conditions.

The staff request you schedule a meeting with us or submit a letter detailing what parameters and elements you recommend the boiler be tested for. Also submit the dates this experimental operating time will begin and end.

If you have any questions, feel free to call.

Sincerely,

Dan M. McLeod
North Air Emissions Section

DNM:vgr

FILE COPY

October 9, 1985

Mr. John T. Kane, Jr.
Koppers Company, Inc.
Environmental Resources
440 College Park Drive
Monroeville, Pennsylvania 15146

Dear Mr. Kane:

Re: Koppers Company, Inc.
Grenada Plant
Source No. 0960-00012
Grenada, Mississippi

Excuse my delay in responding to you on the issue of burning cross ties butts at the Grenada Plant. We have reviewed your request and feel the permit could be modified to allow the burning of these cross ties, during which time stack emission testing shall be performed at agreed parameters and conditions.

The staff request you schedule a meeting with us or submit a letter detailing what parameters and elements you recommend the boiler be tested for. Also submit the dates this experimental operating time will begin and end.

If you have any questions, feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:vgr

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

RECEIVED
SEP 16 1985
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

KOPPERS
Architectural and
Construction Materials

September 12, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for August, 1985.

1. Weights of each individual container of waste with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. Clayton

JDC/djm

cc: File

Enclosures

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

KOPPERS

August 29, 1985

Mr. Daniel N. McLeod
Bureau of Pollution Control
P.O. Box 10385
Jackson Mississippi 39209

RE: Koppers Company, Inc.
Grenada Plant
Permit #0960-00012

Dear Mr. McLeod:

As you know, Koppers currently operates a steam production facility under the above listed permit. This production facility utilizes wood waste as the primary fuel. Koppers is interested in obtaining permission to burn a substitute primary fuel for the period of one month. The substitute fuel is wood derived and is in chip form.

The source of the substitute material is what is commonly known as tie butts. Tie butts are railroad cross ties which have outlived their usefulness. The ties are cut in three pieces and pulled from the road bed. The tie butts are not hazardous wastes and are currently land filled.

Koppers is examining technologies which would reuse these wasted materials. The process which would be involved in the proposed Grenada program would shread these tie butts and feed the resulting material to the boiler via the existing fuel system. It is desired to operate the shreader for a period of one month to allow evaluations of the shreader equipment. We propose that during this time, all shreaded material be used as fuel. Attached is an analysis of the proposed substitute fuel.

Koppers anticipates the availability of the shreading equipment to be about the middle of October. The equipment would then be operated until the middle of November.

We look forward to a discussion with you on this subject, and hope you view this project favorably. Please contact us at your earliest convenience.

Very truly yours,

John T. Kane, Jr.

JTK/djr
attachment
cc: R. Clayton

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

KOPPERS

August 29, 1985

Abandoned
11/5

Mr. Daniel N. McLeod
Bureau of Pollution Control
P.O. Box 10385
Jackson Mississippi 39209

RE: Koppers Company, Inc.
Grenada Plant
Permit #0960-00012

Dear Mr. McLeod:

As you know, Koppers currently operates a steam production facility under the above listed permit. This production facility utilizes wood waste as the primary fuel. Koppers is interested in obtaining permission to burn a substitute primary fuel for the period of one month. The substitute fuel is wood derived and is in chip form.

The source of the substitute material is what is commonly known as tie butts. Tie butts are railroad cross ties which have outlived their usefulness. The ties are cut in three pieces and pulled from the road bed. The tie butts are not hazardous wastes and are currently land filled.

Koppers is examining technologies which would reuse these wasted materials. The process which would be involved in the proposed Grenada program would shread these tie butts and feed the resulting material to the boiler via the existing fuel system. It is desired to operate the shreader for a period of one month to allow evaluations of the shreader equipment. We propose that during this time, all shreaded material be used as fuel. Attached is an analysis of the proposed substitute fuel.

Koppers anticipates the availability of the shreading equipment to be about the middle of October. The equipment would then be operated until the middle of November.

We look forward to a discussion with you on this subject, and hope you view this project favorably. Please contact us at your earliest convenience.

Very truly yours,

John T. Kane, Jr.

JTK/djr
attachment
cc: R. Clayton

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS

Architectural and
Construction Materials

August 14, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. MeLeod:

As required by our operating permit, the following are enclosed for July, 1985.

1. Weights of each individual container of waste with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. Clayton

JDC/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

CERTIFIED MAIL

August 2, 1985

Mr. Dan McLeod
State of Mississippi
Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Company, Inc.
Tie Plant, Ms.
Source No. 0960-00012

Dear Mr. McLeod:

The completed forms for renewal of our operating permit are attached for your review.

If you have any questions, please call me at (601) 226-4584.

Sincerely,

J. D. Clayton
Acting Plant Manager

JDC/dm

cc: T. A. Marr
John Kane

MEMORANDUM

TO: Bill Barnett and Jack McMillan

FROM: Dan N. McLeod

SUBJECT: Burning of Cross Ties
Koppers Company, Inc.
Grenada, Mississippi

DATE: September 25, 1985

FILE COPY

Attached please find a letter from Koppers requesting permission to burn Cross Tie butts in their existing boiler at the Grenada Facility.

Let me know by October 4, 1985 any comments you have on this matter.

DNM:cm
Attachment

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

July 10, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for June, 1985:

1. Weights of each individual container of waste with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

4. Boiler operating capacity charts.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

J. D. (Rock) Clayton

JDC/djm

cc: File

Enclosures

7-10-85

DAN

WE had A MECHANICAL MALFUNCTION ON THE SMOKE STACK CHART WEEK OF 6-10-85 WE FOUND IT + CORRECTED IT ON 6-17-85 YOU CAN LOOK AT TAPE + TELL IT WASN'T MOVING IT MADE A HOLE ACCROSS THE TAPE. IF IT IS ANY QUESTION CALL ME COLLECT 1-226-4584.

J. D. Clayton
Rock

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

June 17, 1985

Mr. Daniel N. McLeod
North Air Emissions Section
Mississippi Department of National Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Ms. 39209

Dear Dan:

With this letter Koppers is applying for renewel of Permit No. 0960-00012. Item 9 of Part I of the present permit requires this be done 180 days prior to the expiration date. The section also requires current emissions data. Stack tests were performed in August of 1984 and data submitted to you December 13, 1984. The intent of the data was to fulfill both the renewel requirement as well as questions from your department.

Received renewal forms today, will fill out and mail to you in next few days.

If you have any questions, please contact me at (601)226-4584 or John Kane at (412)327-3000.

Very truly yours,

J. D. Clayton

JDC/rt

cc: J.T. Kane, Jr.
D.L. King
T.A. Marr

FILE COPY
Grenada

June 13, 1985

Mr. Ray C. Bartlow
Koppers Company, Inc.
P.O. Box 160
Grenada, Mississippi 38960

Dear Mr. Bartlow:

Re: Operating Permit No. 0960-00012
Tie Plant, Mississippi

This letter is for the purpose of alerting you to the fact that the referenced permit expires on December 1, 1985. If you wish the permit to be considered for renewal, you will need to file a new application. Application forms are enclosed.

If you have any questions, please advise.

Very truly yours,

Buddy Wolverton
North Air Emissions Section

BW:ps
Enclosures

P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

June 5, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for May, 1985.

1. Daily operating log with sludge feeder rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

Grenada

May 16, 1985

Mr. Ray C. Bartlow
Koppers Company, Inc.
P.O. Box 160
Grenada, Mississippi 38960

Dear Mr. Bartlow:

Re: Permit to Operate No. 0960-00012
Tie Plant, MS

This letter is to inform you that the above referenced permit has been modified. This modification consists of a change in the requirements on page 5.

Enclosed please find a copy of the modified permit.

If you should have objections to this permit modification and desire that a Permit Board hearing be held, you should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations of the modified permit shall become final.

Very truly yours,

Dan N. McLeod
North Air Emissions Section

DNM:ps
Enclosure

Telephone 601-226-4564

Grenada

KOPPERS

Architectural and
Construction Materials

May 9, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for April, 1985.

1. Daily operating log with sludge feeder rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

FILE COPY

MEMORANDUM

TO: Jerry Banks

FROM: Dan McLeod

SUBJECT: Koppers Company
Tie Plant, Mississippi
Source No: 0960-00012
Grenada County
Major/North
For May 14, 1985, Permit Board

Operating Permit/Modification

DATE: May 6, 1985

Koppers performed several stack emission test in August, 1984, and the results have been reviewed. The permit has been modified to show these results and I request the Permit Board's approval of these modifications.

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

Sunada

RECEIVED
1985 APR 22 AM 9:02

KOPPERS
Architectural and
Construction Materials

April 19, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for March, 1985.

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/djm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

March 27, 1985

FILE COPY Grenada

Mr. Ray C. Bartlow
Koppers Company, Inc.
P.O. Box 160
Grenada, Mississippi 38960

Dear Mr. Bartlow:

Re: Operating Permit No. 0960-00012
Grenada, MS

Pursuant to our meeting on March 22, 1985, I have enclosed a copy of the modified draft Operating Permit. Review the copy and if you have any comments submit them by April 8, 1985.

If there are any questions, feel free to call.

Sincerely,

Dan H. McLeod
North Air Emissions Section

DHM:ps
cc: Mr. John Kane, Air Quality Engineer
Mr. Charles P. Brush, P.E.

Telephone 601-226-4584

Grenada

KOPPERS

Architectural and
Construction Materials

March 13, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for February, 1985:

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/djm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

FILE COPY

February 25, 1985

Mr. Ray C. Bartlow, Plant Manager
Koppers Company, Inc.
P. O. Box 160
Grenada, Mississippi 38960

Dear Mr. Bartlow:

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

The staff has completed its review of the stack emissions test report submitted December 20, 1984. We have drafted a modified version of the facility's Operating Permit and have enclosed a copy for your comments.

It is suggested that a meeting be scheduled to discuss these modifications at the Bureau's Jackson, Mississippi, office. Prior to scheduling the meeting, I will wait for a response from you on a convenient time and date.

If there are any questions, feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:hdb
Enclosure
cc: Mr. John T. Kane, Jr., Koppers Company, Inc.

Telephone 601-226-4584

KOPPERS

Architectural and
Construction Materials

February 14, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for January, 1985.

1. Daily operating log with sludge feeder rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Ray C. Bartlow
Plant Manager

RCB, djm

cc: File

Enclosures

P.O. Box [illegible] Tie Plant, MS 38960
Telephone 601-226-4584

Grenada

KOPPERS

Architectural and
Construction Materials

RECEIVED

January 8, 1985

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for December, 1984.

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

December 20, 1984

Mr. Ray C. Bartlow, Plant Manager
Koppers Company, Inc.
P. O. Box 160
Grenada, Mississippi 38960

FILE COPY

Dear Mr. Bartlow:

Re: Stack Emission Testing
Source No. 0960-00012
Tie Plant, Mississippi

On August 15, 1984 and August 16, 1984, you had several stack emission test performed to verify that the temperatures in the boiler were lower than initially stated in the stack test report of May 1982. The results of this test have yet to be submitted, and the Bureau feels substantial time has been allowed for the analysis. Therefore, please submit the report by January 5, 1985.

If there are any questions, please feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:cm

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

RECEIVED
1984 DEC 27 11 8:30

KOPPERS

December 20, 1984

Mr. D. N. McLeod
Bureau of Pollution Control
Department of Natural Resources
P.O. Box 10395
Jackson, Mississippi 39209

Dear Mr. McLeod:
Attached are two copies of the report dealing with the test burn program conducted at Koppers Grenada Mississippi plant. These tests were conducted the week of August 15, 1984.

The gathering materials and calculations of results for this report involve thousands of data points. If there is anything that has been overlooked or if you have any comments, please contact me.

Very truly yours,

John T. Kane, Jr.

JTK/djr

attachment

cc: R. C. Bartlow
D. King
T. A. Marr

P.O. Box [illegible], Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

December 13, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for November, 1984:

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/djm

Ray C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED

November 14, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Company, Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for October, 1984:

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Ray C. Bartlow

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
1984 OCT 15 AM 9:59

October 10, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for September, 1984:

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray C. Bartlow

RCB/djm

cc: File

Enclosure

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 389[illegible]
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

September 25, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

Re: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for August, 1984:

1. Daily operating log with sludge feeder rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please do not hesitate to call if you need any further information.

Sincerely,

Ray Bartlow/dm

Raymond C. Bartlow
Plant Manager

RCB/djm

Enclosures

cc: File

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

MEMORANDUM

TO: File - Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-00012
Grenada County

FROM: Dan N. McLeod

SUBJECT: Stack Emission Test

DATE: September 17, 1984

During the week of August 14, 1984 through August 17, 1984, Koppers Company performed several stack emission tests at different operating conditions. Due to some differences in the interpretation of Koppers monthly submitted strip charts, specifically the temperature strip chart, Koppers Company decided to proceed with the compliance testing required in Operating Permit No. 0960-00012 Requirement 3. The testing was performed by the following Koppers personnel, Mr. John Kane, Mr. Mark Grunebach, Mr. Robert Jupin, Mr. George Rusnak, and Mr. Andy Lorince. Also present were Mr. Ray Bartlow, Plant Manager and Mr. Fred Stoops, a representative of Wellons, the boiler manufacturer.

The stack emission tests were conducted according to the following schedule:

Date	Conditions Tested At	Number of Stack Test Penta POHC	Creosote POHC
8/15/84	Background Boiler operating without generator, woodwaste only.	1	1
8/15/84	Boiler operating without generator. Burning woodwaste and a mixture of 95% creosote sludge and 5% penta-chlorophenol sludge at a rate of 400 lb/hr.	1	1
8/16/84	Boiler operating with generator. Burning woodwaste and 95% to 5% sludge at a rate of 400 lb/hr.	1	1
8/16/84	Boiler with generator. Burning woodwaste and 95% to 5% of sludge at a rate of 800 lb/hr.	1	1

There were 12 points tested (6 points on each traverse) at 5 minutes per point or 60 minutes per run. A copy of the methodology utilized to perform the tests can be found in the file.

The only problems incurred during the stack emission test was failure to leak check at a rate of less than 0.02 cfm on some runs. These leak rates were in the range of 0.021 cfm to 0.03 cfm. Those tests will need to be corrected for volume as allowed in Method 5.

The sludge that was added to the primary fuel woodwaste was a mixture of 95% creosote sludge and 5% pentachlorophenol sludge. This mixture as accomplished by weighing each drum of creosote sludge then weighing the pentachlorophenol sludge out in a 5 gallon bucket increments. Then based on the feeder's chain speed and the time it took to use all the sludge, the feed rate was determined. This method of measuring feed rate was not as accurate as it should be. Also the sludge, specifically the creosote sludge contained a large amount of foreign material such as metal bands, wire, insulation, rocks, mud, oil absorbent, and etc. I will recommend adding a requirement in the Operating Permit that will require the facility to preweigh the sludge and only burn woodwaste combined with creosote and pentachlorophenol sludge.

Visible Emission Evaluations (VEE) were performed during the testing with following results:

Date of VEE	Time of VEE	Results of VEE	Conditions
8/15/84	3:40 p.m. to 3:58 p.m.	Set 1 3.96% Set 2 4.17% Set 3 4.58% Average Opacity 4.24%	The boiler was burning 400 lb/hr of sludge (95% creosote and 5% pentachlorophenol). The opacity monitor read 10% during VEE.
8/15/84	5:15 p.m. to 5:33 p.m.	Set 1 8.25% Set 2 9.17% Set 3 10.83% Average Opacity 9.42%	The boiler was burning 400 lb/hr of sludge (95% creosote and 5% pentachlorophenol). The opacity monitor read 10%-15% during VEE.
8/16/84	1:50 p.m. to 2:08 p.m.	Set 1 43.83% Set 2 10.42% Set 3 6.04% Average Opacity 19.93%	The boiler was burning 400 lb/hr of sludge (95% creosote and 5% pentachlorophenol). The opacity monitor read 20% to 100% during VEE. Soot blowing occurred during Set 1 of the VEE.

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

KOPPERS

RECEIVED
1984 AUG 31 AM 11:02

August 28, 1984

Mr. Dan N. McLeod
Bureau of Pollution Control
Department of Natural Resources
P. O. Box 10385
Jackson, MS 39209

Dear Dan:

Attached are copies of the five field data sheets which were unavailable the last day of the test program. We are presently processing the samples from all the test work and hope to have a completed report to you by the end of October, 1984.

Very truly yours,

John T. Kane, Jr.

JTK:ss

Attachment

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville 15146
Telephone 412-327-3000

RECEIVED
1984 AUG -7 AM 9:28

KOPPERS

August 6, 1984

Mr. D. N. McLeod
Bureau of Pollution Control
Department of Natural Resources
P. O. Box 10385
Jackson, Mississippi 39209

Dear Mr. McLeod:

This letter represents an addendum to my July 31, 1984 letter addressing the agenda for the test burn to be conducted the week of August 13, 1984. The schedule, as discussed in our meeting August 2, 1984, will include test burn studies conducted on a blended sludge made up of 95 percent by weight creosote material and 5 percent penta materials. This blend will be added at a rate of 400 lb/hr.

The variable to be analyzed by the study will be the various steam plant temperature monitors located throughout the facility. We would like to estabish the lowest temperatures for the installed instrument which would also achieve 99.99 percent destruction and removal efficiency (DRE) of the principal organic hazardous constituents (POHC). Furthermore, we will also establish the relation between the installed monitor readings and the test monitor as used in the May, 1982 tests. As we discussed, the location of the installed thermocouples is different in length than the probe used by the test team.

A brief outline of other analyses to be accomplished during and after the test burn reads as follows:

- Samples of the wood will be taken twice a day for ultimate and BTU analysis.
- Samples of sludge will be taken to establish POHC content, ultimate, and BTU analysis.
- Fixed gas determination will be done on site using both fyrite and GC analysis.
- Samples of the boiler ash and the fly ash will be taken for chloride and chlorine analysis. Also, EP toxicity tests will be performed on these samples.

- Sludge addition rate will be established by a usage schedule where the amount of sludge delivered from a preweighed drum will be documented. Also, the installed recording ammeter which records the feeder on time will be in use.

- Names of personnel in our test team, excluding myself, are Mark Grunebach, Robert Jupin, and George Rusnak.

- The schedule of operation of the boiler will be 40 percent of capacity (12,000 lb/hr steam) on August 14, 30 percent or 9,000 lb/hr steam of August 15, and 6,000 lb/hr steam on August 16, 1984. These numbers represent the rate at which we will shoot for. However, it should be realized that a realistic number would probably be plus or minus 10 percent.

The testing sequence will allow for determination by three test averages of background generation rates of POHC for the boiler operation rates of the given test day. These tests will be followed by parallel stack tests performed while the by-product material is co-fired with the wood waste. Again, a three test average will be incorporated to calculate the DRE.

Two test trains will be incorporated for the test work. The physical setup of these trains will be the same. However, the hydrocarbon extraction will differ in the solvent used to recover the POHC. Therefore, since we will need to run three individual stack tests for each background or test burn, we will run two sampling trains in the stack at the same time. One will be used for the determination of penta POHC, while the second will be used for the creosote POHC determinations. All tests will incorporate the AQE-1A method included in my July 31, 1984, letter.

On August 17, we will conduct a test burn of an elevated by-product material feed rate. This test will also include three stack test averages for penta and creosote POHC for a feed rate of 800 lb/hr.

The attached table is a summary of the stack testing schedule we would like to keep.

Very truly yours,

John T. Kane, Jr.

JTK:ss
Attachment
cc: R. Bartlow
T. A. Marr
J. Banks

MEMORANDUM

TO: Jack McMillan
John Herrmann

FROM: Dan N. McLeod

SUBJECT: Koppers Company, Inc.
Tie Plant, Ms.
Source No: 0960-00012
Grenada County

DATE: August 6, 1984

During the week of August 14, 1984, through August 17, 1984, Koppers Company will be performing a series of air emission tests at their wood preserving plant in Tie Plant, Mississippi.

The testing on the woodwaste boiler will be performed while burning various quantities and mixtures of wood preserving sludge (creosote and pentachlorophenol) with their primary fuel, woodwaste. If there are any questions regarding this matter, please contact me.

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS

Architectural and
Construction Materials

RECEIVED
1984 AUG -6 AM 9:45
MISSISSIPPI DEPARTMENT
OF NATURAL RESOURCES
BUREAU OF POLLUTION
CONTROL

August 3, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for July, 1984:

1. Daily operating log with sludge feeder rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please don't hesitate to call if you need any further information.

Sincerely,

Raymond C. Bartlow

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

KOPPERS

July 31, 1984

Mr. Dan N. McLeod
Bureau of Pollution Control
Department of Natural Resources
P.O. Box 10385
Jackson, Mississippi 39209

Dear Dan:

The attached is our tentative schedule and techniques for testing the co-firing process for the boiler at Koppers Grenada plant during the week of August 13, 1984. The purpose of the testing will be to establish the lower limit of boiler temperature at which the principal hazardous organic constituents (POHC) will be destroyed at a rate of 99.99 percent or better. We have selected three days to test three different boiler steam generation rates. Temperatures will be monitored during the program in the same fashion as during the original May, 1982 test burn, and compared to the output of the installed control system.

An additional test will be run on the fourth day, which will involve doubling of the sludge feed rate. Destruction and removal will be determined at this 800 lb/hr rate using the same testing program.

If you have any questions on these procedures, please contact me or Ray Bartlow.

Very truly yours,

John T. Kane, Jr.

JTK:ss
Attachment
cc: R. Bartlow (w/o attachment)
T. A. Marr (w/o attachment)
M. G. Morris (w/o attachment)

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

RECEIVED
1984 JUL -2 AM 9:40
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES BUREAU OF POLLUTION CONTROL

TO: Dan McLeod

FROM: Stanley Watkins, NRO

KEY DATA:

AGENCY (Region)			COUNTY CODE				SOURCE NUMBER					EM. PT.			CARD	ACT. CODE	
1	3	0	0	9	6	0	0	0	0	1	2	0	0	0	7	0	8
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	52	53

INSPECTION DATE: June 26th, 1984 (Col. 54 thru 59)

SUBJECT: Koppers Company
Tie Plant, MS
Grenada County

PERSON CONTACTED: R. C. Bartlow

FACILITY MANAGER:

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

DWW

TO: Dan McLeod
FROM: Stanley Watkins, NRO
DATE: June 26th, 1984

SUBJECT: Koppers Company
Tie Plant, MS
Grenada County

On June 26th, 1984, I made a requested inspection of the woodwaste boiler at this facility. I contacted Mr. R. C. Bartlow.

I performed a VEE of the boiler and got an average opacity of 1.3%. At the beginning of my reading their opacity monitor showed an opacity reading of 20%. During the reading they cleaned the electronic eye lens and at the end of the VEE it was reading 8%. I do not know why the opacity monitor was reading that high because most of the time there was no VE from the stack and only occassionally a slight haze of smoke.

They were burning approximately two hundred pounds per hour of creosote sludge during the VEE which amounted to about 3% of the total fuel intake.

If I can be of any further assistance, please let me know.

SW:c

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

RECEIVED
1984 JUN 20
BUREAU OF POLLUTION

960-12

TO: Dan McLeod
FROM: Kenny Hill
DATE: June 18th, 1984

SUBJECT: Kopper's Company
Tie Plant, MS
Grenada County

On June 15th, 1984, I went to this facility to do the requested VEE. Mr. R. C. Bartlow informed me that they were not burning sludge today and probably would not be burning sludge until sometime late next week. He stated that one of their fuel sources had been damaged in a train accident and he was running low on fuel. This was the reason they would not be burning sludge. Mr. Bartlow, informed me that he would call our office, as soon as they started burning sludge again.

If I can be of any further assistance, please advise.

KH:c

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
1984 MAY 28 AM 9:05
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL

May 25, 1984

Mississippi Dept. of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
North Air Emissions Section
Jackson, Ms. 39209

ATTN: Mr. Dan McLeod

RE: Koppers Co., Inc.
Source No. 0960-00012
Tie Plant, Mississippi

Dear Mr. McLeod:

Enclosed I am returning the April charts with some notes of explanation on them. Also, copies of selected steam pressure/flow charts are included for reference.

Some conditions cause high readings on the opacity chart: dust on the light source or sensor lens, misalignment due to vibration and soot blower operation (a spike of short duration). Actual smoking is caused by a boiler upset. If pressure falls due to a mechanical problem or wide variation in flow, some smoking occurs until pressure stabilizes at normal operating level. A reasonable flow change does not normally cause a problem but temporarily wet fuel greatly affects the boiler's ability to react to normal flow changes without some smoke.

The chart for 4-17 shows an interesting event. During this day under wet fuel conditions the only time the boiler responded normally was during a two hour period in which sludge was added. Apparently enough BTU's were added to the fuel stream to cancel the effect of the higher moisture content.

I have been in contact with my Pittsburgh office and we were not aware that an internal temperature equal to the test conditions was necessary for adding sludge. By June 8, 1984 you will be supplied

(Cont'd)

with additional test results on an identical installation that supports our contention that lower temperatures will achieve the required D.R.E. percentages. After your review of the results, we should discuss the necessity of further testing at the Tie Plant facility.

I will comply with your request for a monthly letter if no sludge was added to the fuel stream.

If you have any questions on the charts, please feel free to call.

Sincerely,

R. C. Bartlow
Plant Manager

RCB/djm

cc: T. A. Marr
File

Enclosures

FILE COPY

May 21, 1984

Mr. R. C. Bartlow, Plant Manager
Koppers Company Inc., Forest Products Group
P.O. Box 160
Tie Plant, MS 38960

Dear Mr. Bartlow:

Re: Koppers Co., Inc.
Source No. 0960-00012
Tie Plant, Mississippi

Pursuant to our phone conversation I am returning the strip charts and operating logs submitted to the Bureau for the month of April. Additionally, you stated it would be difficult to submit a letter giving the requested information by the date stated in my letter of May 11, 1984. Therefore, the staff will extend this deadline to May 30, 1984.

Also, you stated the boiler was not at normal operating conditions during the stack emission test of May 17, 1982, and that the temperatures in the boiler could actually be lower and comply with the 99.99% destruction removal efficiency. Any information that you have substantiating this fact should be submitted to the Bureau as further proof that the boiler is in compliance. The staff has discussed this issue and based on requirement 3 of Operating Permit No. 0960-00012, we suggest you proceed with performing stack emission tests on the boiler under normal operating conditions, for permit renewal in December 1985.

If there are any questions feel free to call.

Very truly yours,

Dan N. McLeod
North Air Emissions Section

DNM:tb
Enclosure

FILE COPY

May 11, 1984

Mr. R. C. Bartlow
Plant Manager
Koppers Company, Inc.
Forest Products Group
P. O. Box 160
Tie Plant, Mississippi 38960

Dear Mr. Bartlow:

Re: Monthly Reports
Koppers Company, Inc.
Source No. 0960-00012
Tie Plant, Mississippi

In reviewing the monthly report for the month of April, I have noticed that your stack opacity strip chart reveals that for every day that the monitor was operating there were violations with the 40% opacity standard as stated in your operating permit and the Mississippi Air Quality Regulations.

Also in reviewing the temperature strip chart for various areas of the boiler my interpretation of the chart reveals that temperatures in these areas are going below the temperatures recorded in the stack emission test report of May 17, 1982. The Bureau feels when these temperatures are lower than temperatures during the stack test that complete combustion is not being achieved and emissions from the stack are increased. The Bureau requests that by May 21, 1984, you submit a letter stating the reasons for the excessive opacities recorded by your monitor and the low temperatures in the boiler.

Furthermore, in the future the company shall submit a letter every month stating whether or not the facility burned creosote sludge or pentachlorophenol sludge in the boiler.

If there are any questions, feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:els

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
1984 MAY -9 PM 9:20
MISSISSIPPI DEPARTMENT
OF NATURAL RESOURCES
BUREAU OF POLLUTION
CONTROL

May 8, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for April, 1984:

1. Daily operating log with sludge feed rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

Sincerely,

R. C. Bartlow/djm

R. C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

February 9, 1984

Mr. Dick Eriksson
Department of Health Services
Hazardous Waste Management Branch
714 P. Street
Sacramento, California 95814

FILE COPY

Dear Mr. Eriksson:

Please find enclosed the stack emission test results from the burning of wood preservative sludge in the woodwaste boiler at Koppers Company's facility near Grenada, Mississippi. Should you have any questions, feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:cm
Enclosure

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

TO: Dan McLeod

FROM: Stanley Watkins, NRO

KEY DATA:

AGENCY (Region)			COUNTY CODE				SOURCE NUMBER					EM. PT.			CARD	ACT. CODE	
1	3	0	0	9	6	0	0	0	0	1	2	0	0	0	7	0	8
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	52	53

INSPECTION DATE: January 12th, 1984 (Col. 54 thru 59)

SUBJECT: Koppers Inc.
Tie Plant, MS
Grenada County

PERSON CONTACTED: Mr. Bartlow

FACILITY MANAGER: " "

DATA CODED

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

TO: Dan McLeod
FROM: Stanley Watkins, NRO
DATE: January 13th, 1984

SUBJECT: Koppers Inc.
Tie Plant, MS
Grenada County

On January 12th, 1984, I performed a requested VEE of the woodwaste boiler at this facility. They were burning a mixture of sawdust and creosote sludge at the time. I got an average opacity of 4.4% from three sets of readings.

Mr. Bartlow, the Plant Manager, said that a bulb in their opacity monitor was blown, so they could not get a reading from the monitor.

If I can be of any further assistance, please let me know.

SW:c

DATA CODED

TO: Dan McLeod
FROM: Stanley Watkins, NRO
DATE: January 13th, 1984

SUBJECT: Koppers Inc.
Tie Plant, MS
Grenada County

On January 12th, 1984, I performed a requested VEE of the woodwaste boiler at this facility. They were burning a mixture of sawdust and creosote sludge at the time. I got an average opacity of 4.4% from three sets of readings.

Mr. Bartlow, the Plant Manager, said that a bulb in their opacity monitor was blown, so they could not get a reading from the monitor.

If I can be of any further assistance, please let me know.

SW:c

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

January 11, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. MeLeod:

As required by our operating permit, the following are enclosed for November and December, 1983:

1. Daily operating log with sludge feed rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

Sincerely,

R. C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

November 4, 1983

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed:

1. Daily operating log with sludge feed rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors. A boiler plan is included showing thermocouple locations and chart color legend.

Sincerely,

R. C. Bartlow/djm

R. C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
OCT 13 REC'D
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

October 11, 1983

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed:

1. Daily operating log with sludge feed rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors. A boiler plan in included showing thermocouple locations and chart color legend.

Sincerely,

R. C. Bartlow/djm

R. C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

SEP 14 REC'D
MISS. STATE DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL

September 8, 1983

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed:

1. Daily operating log with sludge feed rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors. A boiler plan is included showing thermocouple locations and chart color legend.

Sincerely,

R. C. Bartlow
Plant Manager

RCB/djm

cc: R. S. Ohlis
T. A. Marr

Enclosures

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 389[illegible]
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

August 3, 1983

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed:

1. Daily operating log with sludge feed rate.

2. In stack opacity strip chart.

3. Strip chart of the six boiler temperature sensors. A boiler plan is included showing thermocouple locations and chart color legend.

Sincerely,

R. C. Bartlow
Plant Manager

RCB/djm

cc: R. S. Ohlis
T. A. Marr

Enclosures

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, Telephone 4[redacted]457

Grenada

RECEIVED
1983 FEB 14 AM 8 42
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

CERTIFIED MAIL

William J. Baldwin
Manager, Regulatory Affairs

KOPPERS
Architectural and
Construction Materials

February 10, 1983

Mr. Dan N. McLeod
North Air Emissions Section
Mississippi Department of
Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

RE: Operating Permit
No. 0960-00012
Tie Plant, Mississippi

William J. Baldwin
Manager, Regulatory Affairs

Dear Mr. McLeod:

Confirming our conversation of this date, we wish to inform the Bureau that no sludge burning activity has been performed at the above referenced facility since issuance of the operating permit in December, 1982. We are experiencing unanticipated delays in equipment delivery, and assure you that such activity will only be initiated after installation of the required equipment. At that time, we will also institute the record keeping and submission requirements as detailed in Part III, Section (2)(d) of the permit.

Sincerely,

William J. Baldwin

WJB:cg
cc: R. C. Bartlow - Grenada

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, Telephone 412-227-2457

William J. Baldwin
Product Environmental Coordinator

KOPPERS
Architectural and
Construction Materials

RECEIVED
OCT 20 1981
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

October 16, 1981

Mr. G. Banks
Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209

Re: Permit No. 0960-00012
Koppers Co., Inc.
Tie Plant, Mississippi

Dear Mr. Banks:

Per our discussion of September 25, Koppers Company requests a modification of the above-referenced permit. Specifically we wish to blend several of our waste streams, at a rate of 1-6%, to the wood chips currently utilized as boiler fuel. Based on the attached data, we feel confident that such a practice will not violate the current stack emissions for said boiler. Moreover, I'm sure you'll agree after reviewing the data that such disposal is environmentally preferable to landfilling of these materials.

Although the attached reports are self-explanatory, I wish to call the following to your attention:

- The conclusions of Mr. John Kane from our Air Quality Engineering Department that the emissions generated by burning the sludges have little effect on both the amount of emission from the stack and the ambient conditions generated by the emission.

- These emission levels are far below the Federal and State regulations for in-stack measurements and ambient air quality standards.

- Worst case ambient concentrations resulting under these conditions are less than the published guidelines found in the Multi Media Environmental Goals for Environmental Assessment.

- The burning of these sludges will not create a disposal problem for the bottom ash and/or fly ash.

In addition I would like to point out that although this data was collected at Koppers' Montgomery, Alabama plant, the boiler (a Wellons two-cell combustion chamber) is essentially identical to the one at Tie Plant, Mississippi. These Wellons wood-fired boilers utilize a patented "cyclo-blast" combustion system which provides a 2000°F combustion temperature combined with approximately a two second retention time. Such conditions, as evidenced by our data, are ideal for effective combustion of organic materials.

Finally, due to the proprietary business information discussed in the attached, we request that the Bureau handle this data as Confidential. If you have any questions, please do not hesitate to call.

Sincerely,

William J. Baldwin

WJB:m

Attachment

cc: R. C. Bartlow - ltr. only

Grenada
130

December 14, 1979

Mr. Ray Ohlis
Koppers Company, Inc.
Box 160
Grenada, Mississippi 38960

Dear Mr. Ohlis:

Re: Operating Permit No. 0960-00012

Enclosed please find Operating Permit No. 0960-00012 issued for the operation of the air emissions equipment at the above referenced facility. This permit should be displayed prominently at the facility. Operation of the air emissions equipment at the facility shall be in accordance with the conditions of the permit.

Any significant modification to this process or facility which will alter the rate or composition of air pollutant emissions will cause this permit to become invalid. Should you wish to make such a modification, it will be necessary to submit a new application for a construction permit.

This permit expires on December 1, 1982. A new permit application must be submitted one hundred and eighty (180) days prior to this date in order to renew this permit.

If you desire that a Permit Board hearing be held regarding this permit, you should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations in the permit shall become final.

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

Very truly yours,

Don Watts
Industrial Air Emissions Section

DW:SR:ls
Enclosure

Rick
Grenada CC
0960-000

DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 827
Jackson, MS 39205
(601) 354-2550

out to WBA

MEMORANDUM

TO: File

FROM: Lonnie D. Bailey LDB

SUBJECT: Koppers, Inc. - Tie Plant, Mississippi

DATE October 4, 1979

On October 3, 1979, Don Watts and I observed source sampling of a woodwaste boiler at Koppers, Inc., in Tie Plant. The test was performed by Environmental Protection Systems of Jackson. Present for the test were Don Barth of Koppers, Inc., and Martin Nye, representative for Wellons, Inc., the boiler manufacturer.

The test was performed according to EPA Method 5 procedures. No testing problems were encountered. Sample recover procedures were adequate.

The boiler operated between 19,000 and 26,000 lbs. of steam per hour throughout the test. It was fired with a mixture of sawdust, planer shavings and bark. This consisted of both pine and hardwoods. Steam chart will be included in the test report.

Visible emissions from this boiler were evaluated by Don Watts. There were approximately 10% throughout the test. An evaluation done by Don Watts is attached. It appears that this test was valid and it should accurately represent emissions from this boiler.

LDB:jm

DATA CODED

ENVIRONMENTAL
PROTECTION SYSTEMS, INC.

E. Corbin McGriff, Ph.D., P.E.
Director of Engineering and Research

Telephone 601/922-8242
106 Upton Drive P. O. Box 20382
Jackson, Mississippi 39209

Grenada

September 12, 1979

RECEIVED
SEP 14 1979
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Mr. Lonnie Bailey
Mississippi Bureau of Pollution Control
Department of Natural Resources
Post Office Box 827
Jackson, Mississippi 39205

Dear Mr. Bailey:

Please accept this correspondence as notification of our intent to conduct a Performance Evaluation Test at Koppers, Inc., Grenada, Mississippi on October 3, 1979. If you should have any questions, please contact me.

With kindest regards, I am

Cordially,

ENVIRONMENTAL PROTECTION SYSTEMS, INC.

Brent C. Blunt
Air Services Manager

BCB/tal

cc: Mr. Don Barth

Koppers Co
Grenada Co

renewal

FACILITY A P LI
IS IN CIRCULATION.

DATE 12-7-7

BY D S

Air &

COMMISSIONERS

J. E. HOBGOOD, CHAIRMAN
JAMES W. CARRAWAY, VICE CHAIR
JOE D. BROWN
CLYDE R. DAVIS
CHARLES W. ELSE
LOUIS FANCHER, JR.
DENNY KING
RICHARD L. LEARD
JACK PEPPER
JOE STONE
RAY TRIBBLE

January 6, 1978

Koppers Company, Inc.
Box 160
Grenada, Mississippi 38960

Gentlemen:

Re: New Woodwaste Boiler and Associated
Woodwaste Handling Equipment
Construction Permit No. 0960-00012-000

We have completed our review of the plans and specifications for the above referenced facility and approval is hereby indicated for air pollution control purposes only. Enclosed please find Construction Permit No. 0960-00012-000 for the construction of the air emissions equipment and air pollution control equipment associated with the referenced facility. This permit should be displayed prominently at the facility.

This permit expires on January 3, 1979. Should additional time be needed, it will be necessary to provide a written request to the Mississippi Air and Water Pollution Control Permit Board prior to the expiration of the permit.

Prior to startup of the air emissions equipment at this facility, a performance evaluation permit must be obtained from the Permit Board. In order to obtain the performance evaluation permit, it will be necessary to submit certification by a professional engineer registered in the State of Mississippi that construction was completed in accordance with the approved plans and specifications and a written request for the permit.

If Koppers Company, Inc., desires that a Permit Board hearing be held regarding this permit, it should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations in the permit shall become final.

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

Very truly yours,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:ln
Enclosure

FILE COPY

November 23, 1977

The Daily Sentinel - Star
Grenada,
Mississippi 38901

Gentlemen:

Enclosed herewith is a legal notice to be published in your newspaper on November 30, 1977.

Please furnish this office with statement and proof of publication in duplicate.

Yours very truly,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:pa
Enclosure
cc: Mr. John Files

FILE COPY

November 23, 1977

Postmaster
Tie Plant,
Mississippi 38960

Dear Sir:

Please post the attached public notice at your office on or before November 30, 1977.

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

Very truly yours,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:pa
Attachment

FILE COPY

November 23, 1977

Postmaster
Grenada,
Mississippi 38901

Dear Sir:

Please post the attached public notice at your office on or before November 30, 1977.

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

Very truly yours,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:pa
Attachment

Grenada

FILE COPY

November 15, 1977

Mr. Ray Ohlis, Plant Manager
Koppers Company, Inc.
Grenada Plant
P. O. Box 160
Grenada, Mississippi 38960

Dear Mr. Ohlis:

Re: Application for Approval to Construct Woodwaste Boiler System and Associated Wood Handling Equipment

We have completed review of the application and find that there appears to be no difficulty in attaining the state emission requirements and that there will be no significant impact on ambient air quality.

Our calculations have also shown that the allowable emissions for this source will be in excess of 100 tons/year of particulate matter. On this basis, we must place this application through an official New Source Review as required by the Environmental Protection Agency. This means that, in addition to the review work already performed, we must now provide a public notice period of thirty (30) days for receipt of comments.

We, therefore, propose to present this permit for public notice on November 17 at the next Permit Board meeting. If approved by the Board, the public notice will be sent to the postmaster and to the newspaper in your area allowing thirty (30) days for public comment on the proposed construction of this source.

Upon completion of the public comment period, if there is no significant comment affecting the issuance of the permit, the permit will be issued. This will occur on or about December 26. If there is significant comment, it may be necessary to schedule a public hearing.

You will also receive a copy of all documentation which is sent to the newspapers and which is made available to the public for their review. This will be done upon issuance of the public notice itself.

If you have any questions, please advise.

Very truly yours,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:pa

cc: Mr. Anthony Foster, P. E.

Forest Products Division, Koppers Company, Inc.
Pittsburgh, Pa. 15219, Telephone 412-391-3300

KOPPERS
Architectural and
Construction Materials

RECEIVED
OCT 31 1977
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

October 28, 1977

Mr. Wayne B. Anderson, P.E.
Coordinator - Industrial Air
Emissions Section
Air & Water Pollution Control Commission
State of Mississippi
P.O. Box 827 - Robert E. Lee Building
Jackson, Mississippi 39205

Dear Mr. Anderson:

Relative to your letter to Mr. Ohlis, October 24, 1977, I would like to offer for your review the following answers to your questions. Relative to the grain loading, this is intended to be a grain loading per dry standard cubic ft of air. The enclosed calculation shows how it was arrived at. Relative to the questions you asked in paragraph three of your letter, the value of 21,840 ton per year total fuel use was arrived at, as is also shown on enclosed calculations. This was interpreted by us to reflect an average value and therefore utilized our estimates of average annual usage, average heating value, and average boiler capacity factors.

I hope this satisfactorily answers your questions.

Very truly yours,

Tony Foster

Anthony Foster, P.E.
Assistant Manager
Engineering Department

AF/pc

Enclosure

cc: R. S. Ohlis
T. A. Marr

Grenada

FILE COPY

October 24, 1977

Mr. Ray Ohlis, Plant Manager
Koppers Company
Box 160
Grenada, Mississippi 38960

Dear Mr. Ohlis:

Following our meeting, I briefly reviewed your application and found that some additional information and clarification is needed.

The grain loading given is in grains/standard cubic foot. Since the emission standard is in dry standard cubic feet, we need either a clarification as to whether your data were supposed to be at dry conditions, or an estimate (and the basis for it) of the expected average and maximum flue gas moisture content.

The application shows an operating schedule of 6000 hours/year normal and the peak of continuous operation at 8736 hours/year. However, when the total fuel use of 21,840 tons/year is used to calculate operating time and design firing rates, an operating schedule of only 5200 hours/year results. In order to determine your annual emissions so that we may discuss this matter with EPA, we need a clarification of the boiler operating schedule, including hours/year at maximum fuel rate, hours/year at design rate, hours/year down time, and any other clarifying information you might have available.

If you have any questions, please advise.

Very truly yours,

Wayne B. Anderson, P. E., Coordinator
Industrial Air Emissions Section

WBA:pa

REPORT OF CONVERSATION

Date 10-20-77 Telephone _____ Visit X

Subject Resubmittal of const. appl.

Facility Koppers Co.

Location Grenada County

Facility Representative Ray Ohlis, Tom Marr, Anthony Foster

Telephone No. —

MAWPCC Representative WAYNE ANDERSON, DWIGHT WYLIE

DETAILS OF CONVERSATION

A meeting was held with Koppers to discuss their proposed woodwaste fired boiler at Grenada. The appl. as originally submitted in Sept. was incomplete. They resubmitted with additional info today.

We explained the potential for EPA involvement under PSD and agreed to keep them posted on any additional info recd by us or EPA.

They explained that the existing oil-gas boiler would be taken out of service and kept as backup.

FILE COPY

October 19, 1982

The Daily Star
P. O. Box 907
Grenada, Mississippi 38901

Gentlemen:

Enclosed herewith is a legal notice to be published in your newspaper on October 29, 1982.

Please furnish this office with statement and proof of publication in duplicate.

Very truly yours,

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

DKW:DNM:els
Enclosure

cc: Cynthia Lyles
Susan Royals

Dan

KOPPERS

Interoffice Correspondence

To R. C. Bartlow

Location Grenada

Subject Air Permit

From W. A. Sudekum

Location Pittsburgh

Date October 6, 1982

The application for the new air permit is attached. If you agree with the items, please sign and send it to Dan McLeod, via certified.

We kept a copy so all I need is a note that it has been sent.

W. A. Sudekum

WAS:cg
Enclosure

RECEIVED
OCT 12 REC'D
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, 412-227-2000

CERTIFIED MAIL

KOPPERS
Architectural and
Construction Materials

October 6, 1982

Mr. McLeod
State of Mississippi
Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

RE: Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-00012

Dear Mr. McLeod:

The completed forms for renewal of our Operating Permit are attached for your review. We have used the Source No. 0960-00012 instead of the one listed on the forms sent. This Source No. is the one on the existing permit and was referenced in your letter of September 22, 1982.

If there are any questions, please call me at (412) 227-2377.

Sincerely,

Wilfred A Sudekum

Wilfred A. Sudekum
Project Engineer
Environmental Engineering

WAS:cg
Enclosure
cc: T. A. Marr
R. C. Bartlow

Writer's Direct Dial Number _____

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 354-2550

September 22, 1982

Mr. William J. Baldwin
Coordinator of Regulatory Affairs
Forrest Products Group
Koppers Company, Inc.
Pittsburgh, Pennsylvania 15219

Dear Mr. Baldwin:

Re: Koppers Co., Inc.
Tie Plant, Mississippi
Source No. 0960-00012

Please, find enclosed applications to be completed and returned for renewal of your Operating Permit, which expires December 1,1982. Please include information on the recent testing in the application.

If there are any questions, please feel free to call.

Sincerely,

Dan N McLeod

Dan N. McLeod
North Air Emissions Section

DNM:wk
enclosures

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, Telephone [illegible]7-2457

KOPPERS

Architectural and
Construction Materials

William J. Baldwin
Manager, Regulatory Affairs

CERTIFIED MAIL

September 13, 1982

Mr. Dan N. McLeod
North Air Emissions Section
Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209

RE: Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-00012

Dear Mr. McLeod:

We have reviewed the stack test report previously submitted with my August 23, 1982 correspondence for confidential information in accordance with your letter of August 30, 1982. In view of the Bureau's classification of stack data as public information, please be advised that we do not consider any of the information in the above referenced report as confidential, and I am returning same unmarked. We would appreciate, however, being apprised of all requests (other than Department personnel) for information in the report.

Sincerely,

William J. Baldwin

WJB/cf
Encl.

Grenada

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

FILE COPY

August 30, 1982

Mr. William J. Baldwin, Manager
Regulatory Affairs
Koppers Company, Inc.
Forrest Products Group
Pittsburgh, Pennsylvania 15219

Dear Mr. Baldwin:

Re: Confidential
Stack Test Report
Source No. 0960-00012

Pertinent to our recent phone conversation I am returning a copy of the stack test report submitted for you to stamp what you feel should be considered confidential. After you have returned the report, we will review it and let you know our opinion of what can be held confidential.

If there are any questions please feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:wk
enclosure

FILE COPY

October 19, 1982

Clarion-Ledger
P. O. Box 40
Jackson, Mississippi 39205

Gentlemen:

Enclosed herewith is a legal notice to be published in your newspaper on October 29, 1982.

Please furnish this office with statement and proof of publication in duplicate.

Very truly yours,

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

DKW:DNM:els
Enclosure

cc: Cynthia Lyles
Susan Royals

FILE COPY

October 19, 1982

Postmaster
Grenada,
Mississippi 38901

Dear Sir:

Please post the attached public notice in your post office on or before October 29, 1982.

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

Very truly yours,

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

DKW:DNM:els
Attachment

cc: Susan Royals

FILE COPY

October 19, 1982

Postmaster
Tie Plant,
Mississippi 38960

Dear Sir:

Please post the attached public notice in your post office on or before October 29, 1982.

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

Very truly yours,

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

DKW:DNM:els
Attachment

cc: Susan Royals

FILE COPY

November 12, 1982

Mr. William J. Baldwin
Manager Regulatory Affair
Koppers Company, Inc.
Forrest Projects Group
Pittsburgh, Pennsylvania 15219

Dear Mr. Baldwin:

Re: Koppers Company
Source No. 0960-00012
Grenada, Mississippi

Please find enclosed a draft of your Operating Permit to be issued in December. Please look over it and return any comments by November 30, 1982. If there are any questions, please feel free to call.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:hls
Enclosure

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

December 8, 1982

RECEIVED
JUN 16 REC'D
DEPT. OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

Mr. R. C. Bartlow
Koppers Company, Inc.
P.O. Box 160
Grenada, Mississippi 38960

Dear Mr. Bartlow:

Re: Operating Permit No. 0960-00012
Tie Plant, Mississippi

Enclosed please find Operating Permit No. 0960-00012 issued for the operation of the air emissions equipment at the above referenced facility. This permit should be displayed prominently at the facility. Operation of the air emissions equipment at the facility shall be in accordance with the conditions of the permit.

Any significant modification to this process or facility which will alter the rate or composition of air pollutant emissions will cause this permit to become invalid. Should you wish to make such a modification, it will be necessary to submit a new application for a construction permit.

This permit expires on December 1, 1985. A new permit application must be submitted one hundred and eighty (180) days prior to this date in order to renew this permit.

If you desire that a Permit Board hearing be held regarding this permit, you should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations in the permit shall become final.

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

Very truly yours,

Dan N McLeod

Dan N. McLeod
North Air Emissions Section

DNM:sr
Enclosure

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, Telephone 4[illegible]7-2457

CERTIFIED MAIL

William J. Baldwin
Manager, Regulatory Affairs

KOPPERS
Architectural and
Construction Materials

RECEIVED
DEC - 6 REC'D
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

December 1, 1982

Mr. Daniel N. McLeod
North Air Emissions Section
Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

RE: Koppers Company, Inc.
Grenada, Mississippi
Source No. 0960-00012

Dear Mr. McLeod:

We have reviewed the draft Operating Permit attached to your November 12 correspondence and offer the following comments to Part III OTHER REQUIREMENTS which are found on page 5.

Item (2)(d)

Draft language requires that temperatures be recorded at positions 'A', 'C', 'E', and 'G'. Position 'A' is too close to the fuel pile and will create flame impingement and thus burn out the thermocouple. Position 'C' is satisfactory. As an alternative to position 'E' and in order to provide "duplicate" indication for 'C' we suggest position 'D' as stated on page 9 of the stack emission test report of August 4, 1982. We do not feel that position 'G' will provide useful data and so we request that position 'H' be considered. This will provide temperature data on the flue gas leaving the boiler. We also suggest adding position 'I' (located on the attached drawing). This will monitor the flue gas due point for corrosion control.

In summary, therefore, we propose the following revision to Item (2)(d).

> The permittee shall retain daily operating logs containing in-stack opacity stripcharts, sludge feed rate, and also record temperatures at position 'C' and 'D' (in each boiler furnace cell), and 'H' as stated on page 9 of the stack emission test report, August 4, 1982, and at a position downstream of the air preheater, and submit this monthly to the Department of Natural Resources, Bureau of Pollution Control.

We also suggest that Item (2)(e) be added to Part III which reads as follows:

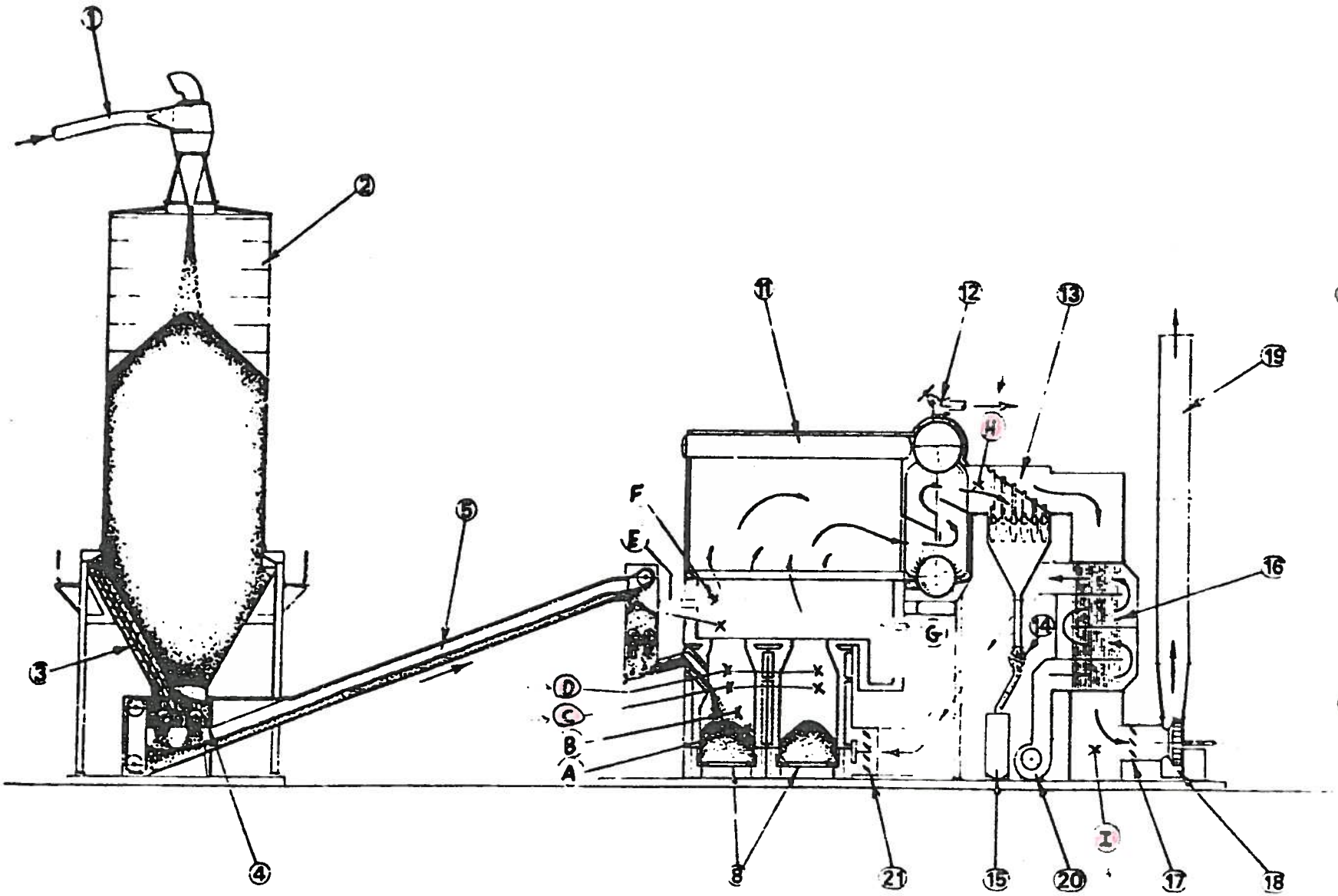
> The permittee shall install an automatic sludge feeding interlock system whereby sludge is only added to the main fuel feed conveyor when steam production exceeds 25% of the boilers' rated generating capacity.

If any questions arise, please give me a call.

Sincerely,

William J. Baldwin

WJB:cg



WELLONS
3-6-4756

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, 412-227-2000

CERTIFIED MAIL

KOPPERS
Architectural and
Construction Materials

RECEIVED
AUG 26 REC'D
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

August 23, 1982

Mr. Dan McLeod
Mississippi Department of Natural
Resources
Bureau of Pollution Control
North Air Emissions Section
P. O. Box 10385
Jackson, MS 39209

RE: Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-0012

Dear Mr. McLeod:

I have attached two copies of a report which detail the results of the test burn conducted at above referenced plant during the week of May 17, 1982. As you will recall, wood-treating process wastes, i.e., penta-in-oil and creosote, were blended with the primary boiler fuel, which is wood chips, and burned. Destruction and removal efficiency (DRE) were determined by stack gas measurement of primary organic hazardous constituents found in each process waste when added at rates of 100, 250, and 400 lbs/hr.

The data found in this report, coupled with the information collected from the wood-fired boiler at our Montgomery, Alabama plant (see W. J. Baldwin to G. Banks, 10-16-81), clearly demonstrates that environmentally this is a viable technique. In fact, as shown in Tables 1 and 2 of the attached, the DRE's for both process wastes were above 99.99% at the 400 lb/hr. addition with only one minor exception, i.e., OCDD which was 99.85%.

We request, therefore, that the Bureau consider utilizing 400 lb/hr. as the upper limit of sludge addition in the permit modification. And as discussed at our March 24, 1982 meeting, the Grenada plant will retain operating logs, i.e., in-stack opacity monitor charts and sludge feed rate data for review upon request by the Bureau.

Writer's Direct Dial Number (412) 227-2457

Due to the proprietary business information that can be gained from the attached, we request that the Bureau handle this report as confidential. If you have any questions, please do not hesitate to contact Mr. John Kane or myself.

Very truly yours,

William J. Baldwin
Manager, Regulatory Affairs

WJB:cg
Enclosure
cc: R. C. Bartlow
J. T. Kane

FILE COPY

Koppers Company, Inc.
Source No. 0960-00012
Tie Plant, Mississippi
Grenada County
Minor/North
Prepared by Dan N. McLeod

Permit Modification

Koppers Company, Inc., Tie Plant, Mississippi (near Grenada, Mississippi) has requested a modification to their Operating Permit to allow them for six months to test burn creosote sludge and penta-in-oil sludge with their primary fuel (woodwaste) in their boiler. This operation will be performed in accordance with the requirements set forth by the Bureau. Also at anytime the Bureau as held the right to terminate the test burning for any justifiable reason.

At the end of this six month period if everything has gone accordingly, the Bureau will go to 30-day public notice prior to issuance of an Operating Permit.

DNM:cm

May 14, 1982

Mr. Ray Ohlis
Koppers Company, Inc.
P. O. Box 160
Grenada, Mississippi 38960

Dear Mr. Ohlis:

Re: Modification
Operating Permit No. 0960-00012
Tie Plant, Mississippi

This letter is to inform you that the above referenced operating permit has been modified. This modification consists of permitting you for six months to test burn waste materials (creosote sludge and pesta-in-oil sludge) with the primary fuel. During this time stack emission tests will be performed by the requirements presented in the request for a modification.

Enclosed please find a copy of the modified permit.

If you should have objections to this permit modification and desire that a Permit Board hearing be held, you should make written application to the Permit Board within thirty (30) days after receipt of this notice; otherwise, the terms, conditions and limitations of the modified permit shall become final.

Very truly yours,

Dan H. McLeod
North Air Emissions Section

DHMiels
Enclosure
cc: Mr. William J. Baldwin
Mr. John T. Kane, Jr.

Koppers Company, Inc., Environmental Resources
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

KOPPERS

RECEIVED
APR 21 REC'D
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

April 19, 1982

Mr. Don N. McLeod
Mississippi Department of Natural Resources
Bureau of Pollution Control
North Air Emissions Section
P. O. Box 10385
Jackson, Mississippi 39209

Re: Modification to Grenada
Tie Plant Boiler Permit

Dear Mr. McLeod:

This letter and attached documents represent the Koppers Company request for a modification to the boiler stack permit at the tie plant in Grenada, Mississippi. The requested duration of this modification is six months. The modification is requested to allow test burning of waste materials mixed with the primary fuel. These materials are creosote sludge and penta-in-oil sludge. The quantity of sludge burned, which would be environmentally safe, will be determined during the time granted under the modification. Under terms of this modification, the Grenada plant will retain operating logs for DNR review. This information, in-stack opacity monitor strip charts and sludge feed rate data, will be kept at the plant and available upon request by DNR.

In the meeting held March 24, 1982, in Jackson, Mississippi, it was recommended that a sampling program outline be submitted to the Mississippi Department of Natural Resources (DNR) prior to testing the effects of sludge burning on air emissions. Attached are the individual test procedures which will be used to determine specific parameters which are of interest to the DNR. Also included is a table showing the approximate makeup of creosote. This table is taken from an article entitled "Analyzing Creosote by Gas Chromatography: Relationship to Creosote Specifications," by L. F. Lorenz and L. R. Gjovik, published by American Wood Preservers' Association; and is presented to allow DNR to choose a primary organic hydrocarbon (POHC) for creosote.

Not included in the attachments are methods for particulate (TSP) determination, stack gas moisture concentration, velocity and fixed gas concentration, and sampling point locations. These determinations will follow EPA Methods 1 through 5.

The purpose of the testing will be to establish a sludge feed rate at which the boiler can operate without violating permit conditions outlined by DNR. The program will incorporate approximately three burn conditions for each sludge. Baseline data will be produced by performing

tests with burning only chips. Sludge will be added in increments of 100, 250, and 400 lb/hr. This program will be used separately for both creosote and penta-in-oil sludges. Tests performed at each increment will include TSP and POHC determinations. Also, chloride and chlorine determinations will be made on the stack gas when penta sludges are burned. A third set of tests will be run using a mixture of the two sludges to determine the effect of combined feed. These tests will be performed only if it is desired or necessary to burn both sludges at the same time.

DNR has already chosen pentachlorophenol and dioxins as the POHC's for the thermal destruction of penta-in-oil sludge. The determination of these POHC's in the stack gas will involve the use of AQE Method 1 for hydrocarbon with some modifications. An XAD-2 resin-packed impinger will be inserted between the third impinger (dry) and the fourth impinger (desiccant). The resin is a porous polymer which will adsorb hydrocarbon on its surface. Any penta or dioxin which would escape the impingement process will be adsorbed on the resin. Cleanup of the sampling train will involve rinsing probe and glassware with benzene. Impinger catches will be slowly drained over the XAD bed to remove condensed penta and dioxins. The XAD will then be extracted with benzene in a soxhlet extraction apparatus for 24 hours. The extract will be concentrated and analyzed using gas chromatography.

In a document entitled "Pentachlorophenol Possible Sources of Human Exposure" levels of dioxin contamination in penta are listed. The paper lists octachlorodibenzodioxin (575-2510 ppm) and hexachlorodibenzodioxin (9-27 ppm) as the two dioxins found in technical grade pentachlorophenol. These will be analyzed for as POHC's, in addition to penta for the penta combustion tests. The document referred to is found in "Forest Products Journal," Volume 27, No. 6, as written by R. S. Detrick.

Attached are the two analytical procedures which will be used for determination of chloride (ion chromatography) and chlorine (Stabilized Neutral Orthotulidine Method), as well as the methods for POHC (AQE 1) and chloride/chlorine (AQE 8) determinations in stack gas.

If you have any questions, please contact me. We have tentatively scheduled the tests to be conducted the week of May 17, 1982.

Very truly yours,

John T. Kane, Jr.

JTK:ss
Attachments
cc: W. Baldwin
R. C. Bartlow (w/o attach.)

Koppers Company, Inc., Forest Products Group
Pittsburgh, PA 15219, Telephone 412-227-2457

William J. Baldwin
Coordinator of Regulatory Affairs

KOPPERS
Architectural and
Construction Materials

RECEIVED
MAR 19 REC'D
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

March 15, 1982

Mr. Dan N. McLeod
Mississippi Department of Natural Resources
Bureau of Pollution Control
North Air Emissions Section
P. O. Box 10385
Jackson, Mississippi 39209

Re: Modification
Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-00012

Dear Mr. McLeod:

Confirming our telephone conversation of this date, Mr. John Kane and myself will meet with you and Mr. Banks at the Department's headquarters in Jackson on Wednesday, March 24, 1982 at 2:00 P.M. to discuss the above referenced request.

Sincerely,

William J. Baldwin

WJB/cf

cc: Mr. J. Kane

Grenada

FILE COPY

February 22, 1982

Mr. William J. Baldwin, Product
Environmental Coordinator
Koppers Company, Inc.
Koppers Building
Pittsburgh, Pennsylvania 15219

Dear Mr. Baldwin:

Re: Modification
Koppers Company, Inc.
Tie Plant, Mississippi
Source No. 0960-00012

We have reviewed your request to blend your wood preserving waste stream with wood chips to fuel your boiler. We have questions that are unanswered and we are concerned about public reaction to such a project in the Tie Plant area. We have already received a complaint even though the project has yet to start.

We are requesting a meeting with you and your staff to discuss with you our plans to handle this matter. We propose to request the Permit Board to modify your present permit to allow you to add your waste stream to the wood chips for six (6) months. During this period, intensive stack emission tests will be required. We will retain the right during this period to terminate the operation at any time. At the end of this period, if no problems have occurred, we will then go to Public Notice for the public's response and proceed to issue a permit for the modification to burn the wood preserving waste in your boiler. At your convenience, please notify us of a convenient date at which you can meet with us. We hope at this time to get our questions answered and decide on what pollutants we will test for.

If you have any questions, please advise.

Sincerely,

Dan N. McLeod
North Air Emissions Section

DNM:hdb

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

TO: Danny Jackson
FROM: Stanley Watkins
DATE: January 8th, 1982

SUBJECT: Koppers
Tie Plant, MS
Grenada County

On January 7th, 1982, Earl Richard and I went by this facility to see if they were burning treated woodwaste in their woodwaste boiler. We could find no indications that this was being done.

Their cross ties are cut to dimension before being treated and the cross ties are finished after the treatment. There is no treated woodwaste left. We made a surprise visit and the boiler was operating at less than 5% opacity.

We checked the woodwaste being conveyed into the boiler and there was no treated wood in the conveyor. Their woodwaste is bought from other mills in the area.

If I can be of any further assistance, please let me know.

SW:c

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

TO: Danny Jackson

FROM: Stanley Watkins

KEY DATA:

AGENCY (Region)			COUNTY CODE				SOURCE NUMBER					EM. PT.			CARD	ACT. CODE	
												0	0	0	7	0	8
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	52	53

INSPECTION DATE: January 7th, 1982 (Col. 54 thru 59)

SUBJECT: Koppers
Tie Plant, MS
Grenada County

PERSON CONTACTED:

FACILITY MANAGER:

Pittsburgh, Pa. 15219, Telephone 412-391-3300

cc: J. A. Kennedy
A. Foster
R. S. Ohlis
J. L. Campbell
R. K. Wagner

KOPPERS
Architectural and Construction Materials

CERTIFIED MAIL

RECEIVED
SEP 9 1977
AIR & WATER POLLUTION CONTROL COMMISSION
STATE OF MISSISSIPPI

September 7, 1977

Mr. Wayne Anderson
State of Mississippi
Air & Water Pollution Control Commission
Air Division
P. O. Box 827
Jackson, MS 39205

returned due to lack of detail resubmitted Oct. 20, 1977

RE: Application for Permit

Dear Mr. Anderson:

Inclosed is the completed Application for Permit covering the installation of a new wood burning boiler at the Koppers Company, Inc., Forest Products Division plant, Grenada, Mississippi.

I am also enclosing for your further information a description of the Wood Burning Boiler System, a description of the Boiler Firing System, a list of existing system installations, and a list of compiled particulate test results from existing installations. Included as well are two blue prints depicting the system layout and operation.

Note that this installation will include environmental controls which will maintain the systems operation well within Mississippi State regulations. Also note that this system will be operating well below the one hundred tons of particulate emission per year and, therefore, under present State regulations, should not require computer modeling or public notice.

The enclosed permit and information is in accordance with Mississippi State requirements and I believe is sufficient to properly process this application. We would appreciate your processing this application at your earliest convenience. Please feel free to contact me in Pittsburgh at A/C 412-391-3300, ext. 2117 if there are any questions.

Sincerely,

Thomas A. Marr
Thomas A. Marr
Supervisor
Environmental I
Forest Product:

Anthony Foster, P.E.
Assistant Manager
Engineering Department

KOPPERS

Forest Products Division
Koppers Company, Inc.
Pittsburgh, PA 15219, 412-391-3300

Thomas A. Marr
Supervisor
Environmental Engineering

KOPPERS

Forest Products Division
Koppers Company, Inc.
Pittsburgh, PA 15219, 412-391-3300

March 7, 1977

Koppers Company, Inc.
P. O. Box 160
Tie Plant, Mississippi 38960

Gentlemen:

Re: Operating Permit
Permit No. 0960 00012 000
Wood Preserving Plant
Expires: March 8, 1980

The permit number indicated above has been assigned to your installation at the above address for the specific process indicated. This permit is valid for a period of three years and should be displayed prominently at the facility itself.

Please note that under State Regulations this permit becomes invalid if this process or facility is modified in any significant fashion which will alter the rate or composition of Air Pollution Emissions to the atmosphere. If such action is contemplated, a new construction permit application must be submitted to this agency.

A new permit application must be submitted ninety days prior to the end of the three year period covered by this permit.

Very truly yours,

Mike Kennedy
Plan Review Engineer
Air Quality Control

MK:lb
Enclosure

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS
RAY TRIBBLE, CHAIRMAN
JAMES W. CARRAWAY, VICE CHAIRMAN
JOE D. BROWN
CHARLES W. ELSE
BARRY O. FREEMAN
CLYDE R. DAVIS
A. L. GERRARD
J. E. HOBGOOD
CHARLES H. LYLES
JACK PEPPER
JOE STONE

GLEN WOOD, JR., EXECUTIVE DIRECTOR
P. O. BOX 827 - ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205
(601) 354-2550

JAN 26 1977

SR

TO: Mike Kennedy
FROM: Lonnie D. Bailey
DATE: January 14, 1977

SUBJECT: Koppers Inc.
Grenada, Mississippi

FEB 2 1977

On January 13, 1977, I inspected Koppers Inc. at Tie Plant, south of Grenada. They have an old boiler that has a Cleaver Brooks, model 200X-BR1 burner, rated at 20 MBTU/hr for natural gas and 235 gallons/hour for #2 fuel oil. They are operating on oil for the first three months of this year but normally operate all but 20 days of the year on gas. During my visit to this source there was no visible emissions from this boiler. The steam generated by this boiler is used in five pressure treatment cylinders that are closed systems and have no emission points.

They have a large diameter cyclone that collects sawdust from the boring mill and lets it drop to the ground where it is put in a truck and hauled to the county landfill. There is a large diameter cyclone that controls the shavings from the planer mill. These shavings are blown to a van and sold to U. S. Plywood in Oxford. There were no visible emissions from either cyclone.

It appears that this source remains in compliance and the Permit to Operate which expires February 21, 1977, should be renewed.

If I can be of further assistance, let me know.

Respectfully,

Lonnie D. Bailey

LDB:br

Grenada

Air & Water Pollution Control Commission

COMMISSIONERS

JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD

OIL & GAS BOARD
QUINCY R. HODGES

BOARD OF HEALTH
JOE D. BROWN

MARINE CONSERVATION COMMISSION
W. J. DEMORAN

W. E. GUPTON
JACKSON

HERMIT A. JONES
CANTON

RAY TRIBBLE
MONEY

STATE OF MISSISSIPPI

Glen Wood, Jr.
EXECUTIVE DIRECTOR

POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

COMMISSIONERS

GAME & FISH COMMISSION
AVERY WOOD

BOARD OF WATER COMMISSIONERS
JACK PEPPER

CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS

STATE PARK SYSTEM
DR. JOHN M. KING

A & I BOARD
PAUL BURT

GEOLOGICAL SURVEY
W. H. MOORE

KIPPERS CO INC
P O BOX 160
GRENADA MS 38960

12/10/76

CONTACT R S OHLIS JR

SUBJECT PERMIT APPLICATION RECIEVED

DATE 03/08/77

COUNTY NO. 0960

SOURCE NO. 00012
POINT NO. 000

GENTLEMEN

WE HAVE RECEIVED YOUR APPLICATION CONCERNING AN AIR POLLUTION EMISSION SOURCE. OUR STAFF IS IN THE PROCESS OF REVIEWING YOUR APPLICATION AND YOU WILL HEAR FROM US WITHIN NINETY DAYS.

IF YOU SHOULD HAVE ANY QUESTIONS CONCERNING THE STATUS OF YOUR APPLICATION PLEASE CONTACT THIS OFFICE.

VERY TRULY YOURS,

MIKE KENNEDY
DIV. OF AIR POLLUTION CONTROL

Pittsburgh, Pa. 15219, Telephone 412-391-3300

KOPPERS

Architectural and
Construction Materials

December 3, 1976

RECEIVED
DEC - 6 1976
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Mr. Mike Kennedy
Air and Water Pollution Control Commission
State of Mississippi
P. O. Box 827
Sixth Floor - Robert E. Lee Building
Jackson, Mississippi 39205

Re: Koppers Company, Inc.
Forest Products Division
Tie Plant
Grenada, Mississippi

Dear Mr. Kennedy:

We are enclosing our Application for Renewal of the Permit to Operate for the Koppers Company, Inc., Forest Products Division plant in Grenada (Tie Plant), Mississippi. There have been no significant changes at this plant affecting values shown in this application.

If there are any questions, please contact Mr. Thomas A. Marr of our Pittsburgh office (412) 391-3300 extension 654, or myself at (601) 226-4584.

Very truly yours,

R. S. Ohlis, Jr.
Plant Manager

RSO/rg

cc: T. A. Marr - Pittsburgh

Forest Products Division, Koppers Co., Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

file 10-11-76

KOPPERS
Architectural and
Construction Materials

October 7, 1976

Air & Water Pollution Control Commission
State of Mississippi
P. O. Box 827
Sixth Floor Robert E. Lee Building
Jackson, Mississippi 39205

Dear Sir:

Please send us the necessary forms to file an application for renewal of our operating permit.

Yours truly,

R. S. Ohlis

R. S. Ohlis, Jr.
Plant Manager

RSO/nb

1976
CONTROL COMMISSION
STATE OF MISSISSIPPI

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS

JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD

OIL & GAS BOARD
QUINCY R. HODGES

BOARD OF HEALTH
JOE D. BROWN

MARINE CONSERVATION COMMISSION
W. J. DEMORAN

W. E. GUPTON
JACKSON

HERMIT A. JONES
CANTON

RAY TRIBBLE
MONEY

COMMISSIONERS

GAME & FISH COMMISSION
AVERY WOOD

BOARD OF WATER COMMISSIONERS
JACK PEPPER

CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS

STATE PARK SYSTEM
DR. JOHN M. KING

A & I BOARD
PAUL BURT

GEOLOGICAL SURVEY
W. H. MOORE

Glen Wood, Jr.
EXECUTIVE DIRECTOR

POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

09/20/76

KIPPERS CO INC
PO BOX 160
GRENADA MS 38901

CONTACT R S PHLIS JR
SUBJECT OPERATING PERMIT EXPIRES
DATE 02/21/77

COUNTY NO. 0960
SOURCE NO. 00012
POINT NO. 000

GENTLEMEN

A REVIEW OF OUR FILES INDICATES THAT YOUR PERMIT TO OPERATE EXPIRES SOON.

PLEASE NOTE THAT COMMISSION REGULATIONS REQUIRE THAT YOU FILE AN APPLICATION FOR RENEWAL OF YOUR PERMIT TO OPERATE AT LEAST NINETY (90) DAYS PRIOR TO THE EXPIRATION DATE. APPLICATION FORMS MAY BE OBTAINED BY WRITTEN REQUEST TO THE ADDRESS SHOWN ABOVE.

IF YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO CONTACT US.

VERY TRULY YOURS,

MIKE KENNEDY
DIV. OF AIR POLLUTION CONTROL

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS

RAY TRIBBLE
CHAIRMAN
MONEY

JAMES W. CARRAWAY
VICE CHAIRMAN
BASSFIELD

BOARD OF HEALTH
JOE D. BROWN

KENNETH COBB
LAMBERT

CHARLES W. ELSE
YAZOO CITY

GAME & FISH COMMISSION
BARRY O. FREEMAN

OIL & GAS BOARD
QUINCY R. HODGES

HERMIT A. JONES
CANTON

GLEN WOOD, JR., EXECUTIVE DIRECTOR
P. O. BOX 827 - ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

TELEPHONES:
ADMINISTRATIVE OFFICES 601-354-7513
AIR DIVISION 601-354-6783
WATER DIVISION 601-354-7661

COMMISSIONERS

MARINE CONSERVATION COMMISSION
CHARLES H. LYLES

BOARD OF WATER COMMISSIONERS
JACK PEPPER

JOE STONE
HATTIESBURG

ASSOCIATE MEMBERS

STATE PARK SYSTEM
WILLIAM M. BARNETT

A & I BOARD
HAROLD A. CROSS

GEOLOGICAL SURVEY
W. H. MOORE

TO: Mike Kennedy
FROM: Jann Carpenter
DATE: July 31, 1975

SUBJECT: Koppers Company, Inc.
P. O. Box 160
Grenada, Mississippi

An inspection was made of the above facility July 31, 1975. There is a Babcock and Wilcox boiler with a Clever Brooks burner. The burner model number is WT293X-BR1 and the serial number is BL-1080. The maximum input is 31,000 MBTU/hr. It is natural gas-fired with #2 fuel oil as standby.

From the planer mill there is one small cyclone that collects the dust from the saws and blows it into one low efficiency cyclone. The dust is blown from this cyclone into trailers and is shipped to U.S. Plywood in Oxford.

There is one large low efficiency cyclone and one small low efficiency cyclone that collect the dust from the cutoff saws. This dust is dropped directly to the ground but there is only a very small amount.

All of these cyclones appear to be working effectively. This facility appears to be in compliance with the regulations of the Commission. If I can be of further assistance, let me know.

Respectfully,

Jann Carpenter

Jann Carpenter

JC:br

RECEIVED
AUG 6 1975
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS

Ray Tribble
Chairman
Money

James W. Carraway
Vice Chairman
Bassfield

Board of Health
Joe D. Brown

Marine Conservation Commission
W. J. Demoran

Charles W. Else
Yazoo City

Game & Fish Commission
Barry O. Freeman

W. E. Gupton
Jackson

Glen Wood, Jr., Executive Director
P. O. Box 827 - Robert E. Lee Building
Jackson, Mississippi 39205

Telephones:
Administrative Offices 601-354-7513
Air Division 601-354-6783
Water Division 601-354-7661

COMMISSIONERS

Oil & Gas Board
Quincy R. Hodges
Hermit A. Jones
Canton

Board of Water Commissioners
Jack Pepper

ASSOCIATE MEMBERS

State Park System
Dr. John M. King

A & I Board
Paul Burt

Geological Survey
W. H. Moore

February 22, 1974

Koppers, Inc.
Hwy. 51 South
Grenada, Mississippi

SUBJECT: Operating Permit
Wood Treating Plant

Permit No: 0960-00012-000
Expiration Date: 2/21/77

Gentlemen:

The permit number indicated above has been assigned to your installation at the above address for the specific process indicated. This permit is valid for a period of three years and should be displayed prominently at the facility itself.

Please note that under State Regulations this permit becomes invalid if this process or facility is modified in any significant fashion which will alter the rate or composition of Air Pollution Emissions to the atmosphere. If such action is contemplated, a new construction permit application must be submitted to this agency.

A new permit application must be submitted ninety days prior to the end of the three year period covered by this permit.

Very truly yours,

Carey Stark

Carey Stark
Senior Plan Review Engineer
Division of Air Pollution Control

CS:sb

Forest Products Division, Koppers Company, Inc.
Pittsburgh, Pa. 15219, Telephone 412-391-3300

Grenada

KOPPERS
Architectural and
Construction Materials

December 19, 1973

Mr. Carey Stark
Division of Air Pollution Control
State of Mississippi
P.O. Box 827
Jackson, Mississippi 39205

SUBJECT: KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI
SOURCE NO. 00012

Dear Mr. Stark:

This will confirm our telephone conversation of several days ago with reference to the compliance schedule at the Grenada, Mississippi plant of Koppers Company, Inc. It is my understanding that in order to clear up some of the debate over when and if we will or are in compliance, that you have scheduled an inspection trip to the plant sometime in the next 30 days. Awaiting the results of that inspection trip, we will consider that we are in compliance at the Grenada installation.

Very truly yours,

M. D. Miller

Marvin D. Miller, P.E.
Project Engineer

MDM/pc

cc: R. S. Ohlis
J. L. Campbell

RECEIVED
DEC 26 1973
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Forest Products Division, Koppers Company, Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
JAN 31 1974
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

January 30, 1974

Mr. Carey Stark
Division of Air Pollution Control
State of Mississippi
P. O. Box 827
Jackson, Mississippi 39205

SUBJECT: KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI
SOURCE NO. 00012

Grenada

Dear Mr. Stark:

Reference is to your letter dated 1/21/74 on compliance. We were inspected by Jerry B. Banks on January 25, 1974. We would appreciate the results of this inspection.

Very truly yours,

R. S. Ohlis, Jr.
Plant Manager

RSO/wm

cc: Marvin Miller
J. L. Campbell

Grenada

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS

JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD

OIL & GAS BOARD
QUINCY R. HODGES

BOARD OF HEALTH
JOE D. BROWN

MARINE CONSERVATION COMMISSION
W. J. DEMORAN

W. E. GUPTON
JACKSON

HERMIT A. JONES
CANTON

RAY TRIBBLE
MONEY

COMMISSIONERS

GAME & FISH COMMISSION
AVERY WOOD

BOARD OF WATER COMMISSIONERS
JACK PEPPER

CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS

STATE PARK SYSTEM
DR. JOHN M. KING

A & I BOARD
PAUL BURT

GEOLOGICAL SURVEY
W. H. MOORE

Glen Wood, Jr.
EXECUTIVE DIRECTOR

POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

01/21/74

KOPPERS CO INC
PO BOX 160
GRENADA MS 38901

CONTACT R S OHLIS JR

COUNTY NO. 0960

SUBJECT COMPLIANCE SCHEDULE STEP COMPLETE CONSTRUCT.-

SOURCE NO. 00012
POINT NO. 000

DATE 02/17/74

GENTLEMEN

A REVIEW OF OUR FILES INDICATES THAT THE ABOVE MENTIONED REQUIREMENT OF YOUR COMPLIANCE SCHEDULE IS TO BE FULFILLED BY THE DATE STATED.

PLEASE REMEMBER THAT THE ABOVE DATE IS LEGALLY ENFORCEABLE AND THAT RESPONSE MUST BE MADE TO THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL COMMISSION EVIDENCING FULFILLMENT OF COMPLIANCE SCHEDULE REQUIREMENTS.

ALSO, PLEASE REMEMBER THAT FAILURE TO FULFILL ANY COMPLIANCE SCHEDULE REQUIREMENT BY THE STATED DATE IS CONSIDERED A VIOLATION OF THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL PERMIT REGULATIONS AND CAN RESULT IN A $5,000.00 FINE PER DAY OF VIOLATION.

SHOULD YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO CONTACT US.

VERY TRULY YOURS,

CAREY STARK
DIV. OF AIR POLLUTION CONTROL

Grenada

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS

JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD

OIL & GAS BOARD
QUINCY R. HODGES

BOARD OF HEALTH
JOE D. BROWN

MARINE CONSERVATION COMMISSION
W. J. DEMORAN

W. E. GUPTON
JACKSON

HERMIT A. JONES
CANTON

RAY TRIBBLE
MONEY

Glen Wood, Jr.
EXECUTIVE DIRECTOR
POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

COMMISSIONERS

GAME & FISH COMMISSION
AVERY WOOD

BOARD OF WATER COMMISSIONERS
JACK PEPPER

CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS

STATE PARK SYSTEM
DR. JOHN M. KING

A & I BOARD
PAUL BURT

GEOLOGICAL SURVEY
W. H. MOORE

11/25/73

KOPPERS CO INC
PO BOX 160
GRENADA MS 38901

CONTACT R S OHLIS JR
COUNTY NO. 0960

SUBJECT COMPLIANCE SCHEDULE STEP BEGIN CONSTRUCTION-
SOURCE NO. 00012
POINT NO. 000

DATE 12/17/73

GENTLEMEN:

A REVIEW OF OUR FILES INDICATES THAT THE ABOVE MENTIONED REQUIREMENT OF YOUR COMPLIANCE SCHEDULE IS TO BE FULFILLED BY THE DATE STATED.

PLEASE REMEMBER THAT THE ABOVE DATE IS LEGALLY ENFORCEABLE AND THAT RESPONSE MUST BE MADE TO THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL COMMISSION EVIDENCING FULFILLMENT OF COMPLIANCE SCHEDULE REQUIREMENTS.

ALSO, PLEASE REMEMBER THAT FAILURE TO FULFILL ANY COMPLIANCE SCHEDULE REQUIREMENT BY THE STATED DATE IS CONSIDERED A VIOLATION OF THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL PERMIT REGULATIONS AND CAN RESULT IN A $5,000.00 FINE PER DAY OF VIOLATION.

SHOULD YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO CONTACT US.

VERY TRULY YOURS,

CAREY STARK
DIV. OF AIR POLLUTION CONTROL

Forest Products Division, Koppers Company, Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

Grenada,

KOPPERS
Architectural and
Construction Materials

November 15, 1973

Mr. Carey Stark
Air & Pollution Control Commission
P. O. Box 827
Jackson, Mississippi

Dear Mr. Stark:

This is to confirm our conversation of this date with Mr. Pruett.

We are in compliance and have been. Attached is copy of letter to Mr. Dennis J. Hogan dated January 24, 1973.

If you need additional information, please advise.

Sincerely yours,

R. S. Ohlis, Jr
Plant Manager

RSO:ew

cc: M. D. Miller 1800 Koppers Bldg
Pittsburgh, Pa. 15219

RECEIVED
1973
AIR & WATER POLLUTION
CONTROL COMMISSION

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS
JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD
OIL & GAS BOARD
QUINCY R. HODGES
BOARD OF HEALTH
JOE D. BROWN
MARINE CONSERVATION COMMISSION
W. J. DEMORAN
W. E. GUPTON
JACKSON
HERMIT A. JONES
CANTON
RAY TRIBBLE
MONEY

COMMISSIONERS
GAME & FISH COMMISSION
AVERY WOOD
BOARD OF WATER COMMISSIONERS
JACK PEPPER
CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS
STATE PARK SYSTEM
DR. JOHN M. KING
A & I BOARD
PAUL BURT
GEOLOGICAL SURVEY
W. H. MOORE

Glen Wood, Jr.
EXECUTIVE DIRECTOR
POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

11/09/73

KOPPERS CO INC
PO BOX 160
GRENADA MS 38901

CONTACT R S OHLIS JR
COUNTY NO. 0960

SUBJECT OVERDUE COMPLIANCE SCHED. STEP ORDER EQUIPMENT-
SOURCE NO. 00012
POINT NO. 000

DATE 06/01/73

GENTLEMEN:

A REVIEW OF OUR FILES INDICATES THAT THE ABOVE REFERENCED REQUIREMENT OF YOUR COMPLIANCE SCHEDULE HAS NOT BEEN FULFILLED.

PLEASE REMEMBER THAT THIS REQUIREMENT IS LEGALLY ENFORCEABLE AND THAT WRITTEN RESPONSE MUST BE MADE TO THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL COMMISSION EVIDENCING FULFILLMENT OF COMPLIANCE SCHEDULE REQUIREMENTS.

IF YOU HAVE RECENTLY FULFILLED THIS REQUIREMENT, PLEASE DISREGARD THIS LETTER.

VERY TRULY YOURS,

CAREY STARK
DIV. OF AIR POLLUTION CONTROL

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS
JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD
OIL & GAS BOARD
QUINCY R. HODGES
BOARD OF HEALTH
JOE D. BROWN
MARINE CONSERVATION COMMISSION
W. J. DEMORAN
W. E. GUPTON
JACKSON
HERMIT A. JONES
CANTON
RAY TRIBBLE
MONEY

COMMISSIONERS
GAME & FISH COMMISSION
AVERY WOOD
BOARD OF WATER COMMISSIONERS
JACK PEPPER
CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS
STATE PARK SYSTEM
DR. JOHN M. KING
A & I BOARD
PAUL BURT
GEOLOGICAL SURVEY
W. H. MOORE

Glen Wood, Jr.
EXECUTIVE DIRECTOR
POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

11/09/73

KOPPERS CO INC
PO BOX 160
GRENADA MS 38901

CONTACT R S OHLIS JR
COUNTY NO. 0960

SUBJECT OVERDUE COMPLIANCE SCHED. STEP SUBMIT CONTROL PLAN-
SOURCE NO. 00012
POINT NO. 000

DATE 04/01/73

GENTLEMEN:

A REVIEW OF OUR FILES INDICATES THAT THE ABOVE REFERENCED REQUIREMENT OF YOUR COMPLIANCE SCHEDULE HAS NOT BEEN FULFILLED.

PLEASE REMEMBER THAT THIS REQUIREMENT IS LEGALLY ENFORCEABLE AND THAT WRITTEN RESPONSE MUST BE MADE TO THE MISSISSIPPI AIR AND WATER POLLUTION CONTROL COMMISSION EVIDENCING FULFILLMENT OF COMPLIANCE SCHEDULE REQUIREMENTS.

IF YOU HAVE RECENTLY FULFILLED THIS REQUIREMENT, PLEASE DISREGARD THIS LETTER.

VERY TRULY YOURS,

CAREY STARK
DIV. OF AIR POLLUTION CONTROL

Forest Products Division, Koppers Company, Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

February 28, 1973

Mr. Dennis J. Hogan-Chemical Engr.
Division of Air Pollution
State of Mississippi
P. O. Box 827
Jackson, Mississippi 39205

Dear Mr. Hogan:

We have stored in our tanks at Grenada creosote and pentachlorophenol in fuel oil.

Sincerely yours,

R. S. Ohlis, Jr.

RSO:ew

RECEIVED
MAR 1 1973
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Forest Products Division, Koppers Company
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

January 29, 1973

Mr. Dennis J. Hogan, Chemical Engineer
Division of Air Pollution
State of Mississippi
P. O. Box 827
Jackson, Mississippi 39205

Dear Mr. Hogan:

We wish to advise that we are in compliance with the air quality regulations of the Mississippi Air and Water Pollution Control Act and therefore, request a hearing at your convenience, if necessary, to present information to show that we are now in compliance.

If you find us in compliance, we trust that you will change our tolerance permit to an operating permit.

Sincerely yours,

R. S. Ohlis

R. S. Ohlis, Jr.
Plant Manager

RSO:ew

January 29, 1973

Mr. Dennis J. Hogan, Chemical Engineer
Division of Air Pollution
State of Mississippi
P. O. Box 827
Jackson, Mississippi 39205

Dear Mr. Hogan:

We wish to advise that we are in compliance with the air quality regulations of the Mississippi Air and Water Pollution Control Act and therefor, request a hearing at your convenience, if necessary, to present information to show that we are now in compliance.

If you find us in compliance, we trust that you will change our tolerance permit to an operating permit.

Sincerely yours,

R. S. Ohlis, Jr.
Plant Manager

RSO:ew

November 2, 1972

Koppers Company, Incorporated
Tie Plant, Mississippi

Gentlemen:

The deadline for submission of an application for Permit to Operate an Existing Facility was July 17, 1972. By failing to comply with this deadline you are hereby considered in violation of the rules and regulations of the Mississippi Air and Water Pollution Control Commission for the continued operation of your facility.

You will be required to appear before the Mississippi Air and Water Pollution Control Commission to answer to the charges of operating your facility without proper permit from the Air Division of the Mississippi Air and Water Pollution Control Commission. You will be notified as to the date and time of your hearing.

Your failure to submit an application for Permit to Operate by the specified deadline has caused this agency to place your facility under a Tolerance Permit. Included with the enclosed Tolerance Permit is your compliance schedule, as issued by the Mississippi Air and Water Pollution Control Commission. Failure to meet the requirements of the Compliance Schedule will again result in your being in violation of the rules and regulations of the Mississippi Air and Water Pollution Control Commission.

Very truly yours,

Dennis J. Hogan
Chemical Engineer
Division of Air Pollution

DJH/rs

Forest Products Division, Koppers Company, Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

RECEIVED
AUG 24 1972
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

August 21, 1972

Mr. Glen Wood, Jr.
Executive Director
Air and Water Pollution Control Comm.
P. O. Box 827
Jackson, Mississippi 39205

Dear Mr. Wood:

Attached is a completed "Application for Permit to Operate Existing Facility". We appreciate your extra time in completing the permit application.

Sincerely,

R. S. Ohlis, Jr.

R. S. Ohlis, Jr.
Plant Manager

RSO:jm
Att.

Forest Products Division, Koppers Company, Inc.
P.O. Box 160, Grenada, Miss. 38901
Telephone 601-226-4584

KOPPERS
Architectural and
Construction Materials

July 17, 1972

MR. William H. Taylor, Jr.
Acting Permit Coordinator
Division of Air Pollution
P. O. Box 827
Jackson, Mississippi 39205

Dear Mr. Taylor:

Attached is copy of questionnaire on air. Since the questionnaire, we have converted our boiler completely to natural gas with #2 oil as a standby fuel. We will foward completed application as soon as we have complete data.

Sincerely,

R. S. Ohlis, Jr.

R. S. Ohlis, Jr.
Plant Manager

RSO/whh

Attach

RECEIVED
JUL 18 1972
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Forest Products Division, Koppers Company, Inc.
Pittsburgh, Pa. 15219, Telephone 412-391-3300

KOPPERS
Architectural and
Construction Materials

April 13, 1971

Mississippi Air & Water Pollution
Control Commission
P.O. Box 827
Jackson, Mississippi 39205

Gentlemen:

We are returning herewith the questionnaire as requested in your letter. I apologize for the delay.

Very truly yours,

Marvin D. Miller
Project Engineer

MDM/pc

Enclosure

cc: R. S. Ohlis

RECEIVED
APR 16 1971
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

State of Mississippi
Air Pollution Control
PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Koppers Company, Inc.
Tie Plant,
Mississippi

has been granted permission to operate air emissions equipment in accordance with 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 December, 19 82

MISSISSIPPI POLLUTION CONTROL PERMIT BOARD

DIRECTOR, BUREAU OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES

Expires 1st day of December, 19 85.

Permit No. 0960-00012

Permit Modified: May 14, 1985

DATA CODED

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilities is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Department of Natural Resources Bureau of Pollution Control shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Department of Natural Resources declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Department of Natural Resources Bureau of Pollution Control and the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board and/or their authorized representatives, upon the 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 emission.

8. 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 required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and 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 Natural Resources Bureau of Pollution Control.

11. 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.

12. 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.

13. This permit is non-transferable.

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

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning December 8, 1982, and lasting until December 1, 1985, the permittee is authorized to operate air emissions equipment and emit air contaminants from wood preserving facility with a 37.5 MMBTU woodwaste boiler, and two standby fossil fueled boilers.

Emission Limitations for the Boiler utilizing the following fuels:

EMISSION CHARACTERISTIC	EMISSION LIMITATIONS		
	lb/hr	lbs/day	Other Units (Specify)
Woodwaste Only			
Particulate Matter			.3 gr/dscf
Opacity			40%
or Woodwaste plus Creosote Waste			
Particulate Matter			.3 gr/dscf
Opacity			40%
Acenaphthene			99.98% DRE*
Pyrene			99.98% DRE*
or Woodwaste plus Pentachorophenol Waste			
Particulate Matter			.3 gr/dscf
Opacity			40%
Octachlorodibenzo-p-dioxin (OCDD)			99.62% DRE*
HCl			.2 lb/hr

* DRE - Destruction & Removal Efficiencies

PART III
OTHER REQUIREMENTS

(1) The operator of the equipment covered by this permit shall operate and maintain this equipment to assure that the emission rates will not, at any time, exceed the rates allowed by the Mississippi Air Quality Regulations.

(2) The permittee shall be allowed to burn penta-in-oil waste or creosote waste with the primary fuel (woodwaste) pursuant to the following conditions.

(a) At such time the Bureau receives justifiable odor complaints, the burning of the creosote waste or penta-in-oil waste with the primary fuel, the Bureau shall require that the burning of waste cease until the Bureau determines that the waste is being burned in compliance with applicable regulations.

(b) Steam production must exceed 35% of the boilers rated capacity to burn penta-in-oil waste. The rate of waste feed to the boiler shall not exceed 400 lb/hour.

(c) Steam production must exceed 75% of the boilers rated capacity to burn a mixture of 95% creosote waste and 5% pentachlorophenol waste. The rate of feed of this mixture to the boiler shall not exceed 800 lb/hr.

(d) Steam production must exceed 35% of the boilers rated capacity to burn creosote waste at a rate of 400 lb/hr. Further steam production must exceed 75% of the boilers rated capacity to burn creosote waste at a rate of 800 lb/hr.

(e) The permittee shall not exceed the emission rates established in the stack emission test performed August 15, 1984.

(f) The permittee shall retain daily operating logs containing the following:

(1) In-Stack Opacity Strip Charts
(2) Waste Feed Rate
(3) Temperature at Position '5' as per Page 9 of 12/13/84 test report
(4) Temperature at Position '6' as per Page 9 of 12/13/84 test report
(5) Temperature downstream of preheater
(6) Boiler operating capacity (as percent of rated capacity)
(7) The weights of each individual container of waste to be plaed in the waste feeder.

This data shall be submitted to the Bureau monthly.

(g) The permittee shall burn only waste with a BTU value greater than 5000 BTU/lb and cease all burning of waste containing excessive mud, metal bands, plastic, and other foreign materials.

(h) The permittee shall maintain waste profile sheets for each lot or truckload of waste material. These records shall be kept at the plant whereby they may be readily accessible for Bureau review.

State of Mississippi
Air Pollution Control
PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Koppers Company, Inc.
Tie Plant,
Mississippi

has been granted permission to operate air emissions equipment in accordance with 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 26th day of November, 19 85

MISSISSIPPI NATURAL RESOURCES PERMIT BOARD

_____

DIRECTOR, BUREAU OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES

Expires 1st day of December, 19 88.

Permit No. 0960-00012

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilities is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Department of Natural Resources Bureau of Pollution Control shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Department of Natural Resources declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Department of Natural Resources Bureau of Pollution Control and the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board and/or their authorized representatives, upon the 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 emission.

8. 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 required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and 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 Natural Resources Bureau of Pollution Control.

11. 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.

12. 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.

13. This permit is non-transferable.

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

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning November 26, 1985, and lasting until December 1, 1988, the permittee is authorized to operate air emissions equipment and emit air contaminants from wood preserving facility with a 37.5 MMBTU woodwaste boiler, and two standby fossil fueled boilers.

Emission Limitations for the Boiler utilizing the following fuels:

EMISSION CHARACTERISTIC	EMISSION LIMITATIONS		
	lb/hr	lbs/day	Other Units (Specify)
Woodwaste Only			
Particulate Matter			.3 gr/dscf
Opacity			40%
or Woodwaste plus Creosote Waste			
Particulate Matter			.3 gr/dscf
Opacity			40%
Acenaphthene			99.98% DRE*
Pyrene			99.98% DRE*
or Woodwaste plus Pentachorophenol Waste			
Particulate Matter			.3 gr/dscf
Opacity			40%
Octachlorodibenzo-p-dioxin (OCDD)			99.62% DRE*
HCl			.2 lb/hr

* DRE - Destruction & Removal Efficiencies

PART III
OTHER REQUIREMENTS

(1) The operator of the equipment covered by this permit shall operate and maintain this equipment to assure that the emission rates will not, at any time, exceed the rates allowed by the Mississippi Air Quality Regulations.

(2) The permittee shall be allowed to burn penta-in-oil waste or creosote waste with the primary fuel (woodwaste) pursuant to the following conditions.

(a) At such time the Bureau receives justifiable odor complaints, the burning of the creosote waste or penta-in-oil waste with the primary fuel, the Bureau shall require that the burning of waste cease until the Bureau determines that the waste is being burned in compliance with applicable regulations.

(b) Steam production must exceed 35% of the boilers rated capacity to burn penta-in-oil waste. The rate of waste feed to the boiler shall not exceed 400 lb/hour.

(c) Steam production must exceed 75% of the boilers rated capacity to burn a mixture of 95% creosote waste and 5% pentachlorophenol waste. The rate of feed of this mixture to the boiler shall not exceed 800 lb/hr.

(d) Steam production must exceed 35% of the boilers rated capacity to burn creosote waste at a rate of 400 lb/hr. Further steam production must exceed 75% of the boilers rated capacity to burn creosote waste at a rate of 800 lb/hr.

(e) The permittee shall not exceed the emission rates established in the stack emission test performed August 15, 1984.

(f) The permittee shall retain daily operating logs containing the following:

(1) In-Stack Opacity Strip Charts
(2) Waste Feed Rate
(3) Temperature at Position '5' as per Page 9 of 12/13/84 test report
(4) Temperature at Position '6' as per Page 9 of 12/13/84 test report
(5) Temperature downstream of preheater
(6) Boiler operating capacity (as percent of rated capacity)
(7) The weights of each individual container of waste to be placed in the waste feeder.

This data shall be submitted to the Bureau monthly.

(g) The permittee shall burn only waste with a BTU value greater than 5000 BTU/lb and cease all burning of waste containing excessive mud, metal bands, plastic, and other foreign materials.

(h) The permittee shall maintain waste profile sheets for each lot or truckload of waste material. These records shall be kept at the plant whereby they may be readily accessible for Bureau review.

(3) The permittee shall conduct an emission compliance test on the boiler stack and the results of said test therefrom shall be submitted to the Bureau prior to July 1, 1988. Such tests and the analysis thereof shall be performed and conducted in accordance with approved methods and procedures.

NAME: Koppers Company ADDRESS: Tie Plant, Ms

EMS NO. 1136-0196-0000112 PLANT TYPE: Wood Preserving

MAJOR ( ) MINOR (Y)

		Source/ Reference
Emission Point Description	Woodwaste Boiler (Wellons)	Nebraska Model WTS-2
Emission Point No.	000	Rated @ 37.5 x10^6 BTU/hr
Emission Data:		
Stack Height:	41 feet	
Exit Gas Temperature:	350°F	
Exit Diameter:	3 feet	
Exit Velocity:	55 ft/sec	
Volumetric Flowrate:	16,697 dscfm	

Emission Rates:		lb/hr	tons/yr	Date
Current Allowable	PM	42.94	187.54	
	SO_2	180.00	786.24	
	NO_x			
	CO			
	HC			
	OTHER			
Current Actual	PM	11.29	49.31	STACK TEST 1984
	SO_2			For Further Info See Test Data 1984
	NO_x			
	CO			
	HC			
	OTHER			

Applicable Baseline Emission Rate		Act.	All.	Act.	All.
	PM				
	SO_2				
	NO_x				
	CO				
	HC				
	OTHER				

UTM ZONE: AQCR:

UTM NORTH: 3738 LATITUDE :

UTM EAST: 798 LONGITUDE:

OPERATING SCHEDULE: 24 Hours/Day 7 Days/Week 52 Weeks/Year 8736 Hours/Year

PSD Review Subject: NSPS: NESHAPS:

SCC CODE: SIC CODE: 2491

COMMENTS: * This Boiler by Permit is Allowed to burn Creosote Sludge AND Penta-chlorophenol sludge with woodwaste.

KOPPERS COMPANY, INC.

SUBSTITUTE FUEL ANALYSIS

Ultimate Analysis (wt%)	Tie Butts	Wood Waste
Volatiles @ 105°C	3.9	77.9
Ash [1]	0.6	4.5
Carbon [1]	48.5	55.7
Hydrogen [1]	6.1	3.9
Nitrogen [1]	0.11	0.29
Sulfur	0.2	-
Hydrocarbons (wt%)		
Naphthalene	0.165	-
Acenaphthylene	0.0064	-
Acenaphthene	0.0662	-
Fluorene	0.0652	-
Phenanthrene	0.27	-
Anthracene	0.0616	-
Fluoranthene	0.2	-
Pyrene	0.144	-
Benz(a)anthracene	0.061	-
Chrysene	0.033	-
Benzo(b)fluoranthene	0.035	-
Benzo(k)fluoranthene	0.019	-
Benzo(a)pyrene	0.039	-
Dibenz(a,h)anthracene	0.0033	-
Benzo(g,h,i)perylene	0.014	-
Indeno(1,2,3-c,d)pyrene	0.017	-

[1] Determined on dried sample

KOPPERS COMPANY, INC.

SUBSTITUTE FUEL ANALYSIS

Ultimate Analysis (wt%)	Tie Butts	Wood Waste
Volatiles @ 105°C	3.9	77.9
Ash [1]	0.6	4.5
Carbon [1]	48.5	55.7
Hydrogen [1]	6.1	3.9
Nitrogen [1]	0.11	0.29
Sulfur	0.2	-
Hydrocarbons (wt%)		
Naphthalene	0.165	-
Acenaphthylene	0.0064	-
Acenaphthene	0.0662	-
Fluorene	0.0652	-
Phenanthrene	0.27	-
Anthracene	0.0616	-
Fluoranthene	0.2	-
Pyrene	0.144	-
Benz(a)anthracene	0.061	-
Chrysene	0.033	-
Benzo(b)fluoranthene	0.035	-
Benzo(k)fluoranthene	0.019	-
Benzo(a)pyrene	0.039	-
Dibenz(a,h)anthracene	0.0033	-
Benzo(g,h,i)perylene	0.014	-
Indeno(1,2,3-c,d)pyrene	0.017	-

[1] Determined on dried sample

Cu[illegible]soti #1

6/3	6/4	6/5	6/6
549	561	540	568
563	533	543	552
574	547	559	567
532	541	541	570
541	537	547	554
536	532	554	531
553	557	531	549
547	550	537	557
549	4358	546	528
536		531	553
5480		559	558
		5988	547
			532
			7166

Penta

6/7	6/10
302	290
298	298
276	307
266	310
295	298
293	287
297	271
312	288
300	269
2639	2618

Creosote

6/11	6/12
512	510
510	520
490	521
505	502
515	520
508	585
504	515
510	505
500	490
495	512
521	528
515	500
525	490
518	495
7128	7093

6/13 Creosote
525
531
526
1582

Cruz Punta

6/13	6/14
546	553
542	540
524	537
528	538
536	556
556	551
550	537
523	542
560	539
554	545
555	545
520	561
538	558
561	525
535	516
8128	547
	533
	552
	560
	537
	10892

Crescent

6/15	6/17	6/18
528	528	560
500	516	545
510	523	528
521	521	536
538	520	542
516	530	561
525	525	568
530	500	525
4168	515	4359
	532	
	522	
	545	
	517	
	518	
	531	
	508	
	8351	

Renta

6/19
520
535
540
518
522
515
3150

Penta

6/20	6/21	6/24	6/25
538	530	545	530
521	542	538	528
520	525	518	540
548	532	529	538
2127	542	536	522
	535	525	538
	528	531	534
	541	518	576
	526	4240	520
	518		548
	5319		532
			560
			515
			6922

540
582
563
1685

8607

Penta

6/26	6/27	6/28
568	565	262
561	595	588
551	512	591
574	552	583
553	569	575
548	582	562
562	563	525
548	573	580
530	569	546
541	580	541
548	5698	577
558		532
525		548
7231		527
		552
		8420

Ceuta

6/29	6/30
548	556
551	541
530	572
545	568
538	531
538	557
560	560
558	572
532	553
4900	538
	541
	6109

12

STATE OF MISSISSIPPI
DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL
P.O. BOX 10385
JACKSON, MISSISSIPPI 39209

For Agency Use
FACILITY NUMBER
0960-00012
Date Received
8 - 5 - 85
Month Day Year

APPLICATION FOR PERMIT TO CONSTRUCT AND/OR
OPERATE AIR EMISSIONS EQUIPMENT - GENERAL FORM

APPLICATION FOR: _____ CONSTRUCTION __X__ PERMIT RENEWAL - PLEASE CHECK APPROPRIATE BOX

1. Name, Address, Location, and Telephone Number
   A. Name Koppers Co., Inc. Grenada, Plant
   B. Mailing Address of Applicant
      1. Street Address or P.O. Box P. O. Box 160
      2. City Tie Plant 3. State MS
      4. Zip Code 38960 5. Telephone No. 601-226-4584
   C. Location of Facility
      1. Street NA
      2. City Tie Plant 3. State MS
      4. Zip Code 38960 5. Telephone No. 601-226-4584
   D. If the facility is located outside the City limits, please provide a sketch or description showing the approximate location and attach to this application.
2. SIC Code 2491
3. Number of Employees 61
4. Principal Product Railroad Ties & Lumber
5. Principal Raw Materials Wood Products (Railroad Ties, Lumber, Poles, Creo & Pen
6. Principal Process Wood Preserving Plant
7. Maximum amount of principal product produced or raw material consumed per day Principal Product - 24 tons/hr.
8. (A) Check here if operation which generates air pollutant emissions occurs all year x, or specify the months the operation occurs: Not Applicable
   (B) Specify how many days per week the operation occurs: Normal 5 Peak 7
   (C) Specify how many hours per day the operation occurs: Normal 24 Peak 24
9. If this application is for existing facility permit renewal only, has the facility been modified in any way (including production rate, fuel, and/or raw material changes) during period covered by the Operating Permit ____ Yes x No or since 1972? ____ Yes ____ No
   If Yes, give year(s) in which modification(s) occurred. _____
10. ALL APPLICATIONS MUST BE SIGNED BY THE APPLICANT.

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete, and accurate, and that I am the owner or chief corporate officer, or his designated representative, responsible for complying with air pollution control laws and regulations.

J. D. Clayton
Printed Name of Person Signing

Acting Plant Manager
Title

8-2-1985
Date Application Signed

J. D. Clayton
Signature of Applicant

PLEASE COMPLETE FOLLOWING PAGES WHERE APPLICABLE

FOR ALL APPLICANTS, WHETHER NEW CONSTRUCTION, EXISTING FACILITY, OR RENEWAL

CONTROL EQUIPMENT COVERED UNDER THIS APPLICATION - PLEASE CHECK ALL APPLICABLE AND INDICATE NUMBER OF UNITS.

PARTICULATE EMISSIONS CONTROL EQUIPMENT

1. Cyclone(s) Multicone
2. Water Scrubber _____
3. Baghouse _____
4. Electrostatic Precipitator _____
5. Venturi Scrubber _____
6. Cyclonic Baghouse _____
7. Cyclonic Scrubber _____
8. Other _____

GASEOUS EMISSIONS CONTROL EQUIPMENT

1. Water Scrubber _____
2. Activated Carbon Bed _____
3. Other _____

WASTE DISPOSAL SYSTEMS

1. Solid Waste Incinerator _____
2. Liquid Waste Incinerator _____
3. Wood or Other Waste Fuel Recovery Boiler X
4. Gaseous Waste Flare _____
5. Liquid Waste Flare _____
6. Other _____

Pneumatic Conveying System NOT APPLICABLE

Other (please describe)
NOT APPLICABLE

FOR ALL APPLICANTS

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

This form has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment. Reasons should be given explaining any data not filled in.

PAGE 1

1. Fill in company name and address, plus year for which data is given (if existing facility) at top of page. Use data for most recent calendar year available.
2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc., and use the same reference number on each of the three pages to identify information for the same unit.
3. Manufacturer and Model Number. Nameplate data for boiler, furnace, kiln, etc. Waste gas flares and stationary internal combustion engines should also be included on this form.
4. Rated Capacity in Millions of BTU per hour.
5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.
6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.
7. Heat Usage. Percent of heat used for process and percent for space heating.

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 FACILITY NAME	Address	for Agency use Only
KOPPERS CO, INC GRENADA PLANT	TIE PLANT MISSISSIPPI	

FACILITY NUMBER	Information for Calender Year	Date
0960-00012	1985	8/2/85

2 Reference Number	3 Manufacturer and Model Number	4 Rated Capacity 10^6BTU/hr	5 Type of Burner Unit (use code 1*)	6 Usage (use code 2*)	7 Most Usage % Process	7 Most Usage % Space heat
WFB 01	WELLONS / NEBRASKA	37.5	1	1	100	0
02	MURRAY BOILER MODEL # MG4C	28.5	7	1	100 (STAND BY)	0
	SIZE 13/5	28.5	8	1	100 (STAND BY)	0
	MODEL # WTS-2-45-SH					

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FUEL BURNING EQUIPMENT

(FOR AGENCY USE ONLY)

Reference Number	Stack Parameters				Fuel Type	Fuel Data				
	Stack Height Feet	Inside Exit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature Degree F.		Maximum Amount Per Hour (Specify Units)	Amount Per Year (Specify Units)	Heat Content BTU/Gal, etc. (Specify Units)	Percent Sulfur	Percent Ash
WFB 01	41	3	55	350	HOGGED WOOD WASTE FUEL	5.95 TON/HR	21,840 TON/YR	5000 BTU/lb	0	4.5
02	36	2.5	32	570	NATURAL GAS	28,000 CFH	-	1000 BTU/cu ft	0	0
02	36	2.5	32	570	#2 FUEL OIL	3.4 gpm	10,000 gal/YR	18000 BTU/lb	0	0

FUEL SUPPLIERS:

Fuel Type	Supplier
NATURAL GAS	NONE
#2 FUEL OIL	GRIFFS ~~SOUTHLAND~~ OIL GRENADA
HOGGED WOOD	FISACKERLY - WINONA
"	HANKINS LUMBER - ELLIOT
"	CARTER - HOUSTON
"	DYER - HOUSTON
"	KOPPERS - GRENADA

(FOR AGENCY USE ONLY)

FUEL BURNING EQUIPMENT

11	12				13			
Reference Number	Air Pollution Control Equipment				Emissions (Tons/Year)			Basis of Estimate
	Manufacturer and Model Number	Type* (Use Table 1)	Efficiency		Particulate	So_2	Other (specify)	
			Design	Actual				
WFB 01	WELLONS, INC MULTICONE COLLECTOR	32 + 31	90%	90%	36.8	–	–	7/84 TESTS
02	NO AIR POLLUTION CONTROL EQUIPMENT REQUIRED							GAS
								#2 OIL

*For Wet Scrubber give Gallons per minute Water Flow and Water Pressure if known.

MANUFACTURING PROCESS OPERATIONS

Company Name	Address	FOR AGENCY USE
Koppers Company, Inc. Forest Products Group Grenada, Mississippi Plant	P. O. Box 160 Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calendar Year	Date
0960-00012	19 ~~82~~ 85	8/2/85 ~~9-30-82~~

Reference Number	Process or Unit Operation Name	Rated Process Capacity Tons/Hour	Feed Input		Number of Emission Points To Air	Product Output*	
			Quantity Per Hour	Quantity Per Year		Quantity Per Hour	Quantity Per Year
1	Wood Preserving	24		4 million C.F. of wood products 4 million gals. of preservative	Storage Tank		4 million C.F. of wood products

*Specify Units of Measure Used

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

Reference Number	Stack Data				Air Pollution Control Equipment			
	Height Feet	Inside Unit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature °F	Manufacturer and Model Number	Type* (use Table 1)	Collection Efficiency	
							Design	Actual
1	NONE							

*For Wet Scrubbers Give Gallons per minute Water Flow and Water Pressure if known.

MANUFACTURING PROCESS OPERATIONS

(FOR AGENCY USE ONLY)

11 12

Reference Number	Process Emissions*			Basis for Estimation	(Agency Comments Only)
	Particulates	Sulfur Oxides	Others (Specify by chemical composition)		
1	25.6 tons of ~~from storage~~ filling	fugitive emissions ~~tank breathing and~~		API storage ~~tank breathing~~ & filling losses	(AP-42)

*Please Express Emissions as Tons per Year and Pounds per Hour and Identify Units Being Used.

Company Name	Information for Year	(Agency Use Only)
Koppers Company, Inc. Forest Products Group	1982 5	
Address	**Date**	
P. O. Box 160 Tie Plant Mississippi 38960	~~9-30-82~~ 8/2/85	

B

Description of Waste Materials

C D E

Type (Describe)	Maximum Amount Per Day (Pounds)	Amount Per Year (Tons)	1* Method of Disposal
Pine Sawdust & Bark	10,000	1,200	5
Creosote Process Sludges	9,600	1,752	5 *
Penta Process Sludges			
Treated wood from above			

If Waste Disposal is by Incineration, Specify the Following:

1. Type of Incinerator:

NOT APPLICABLE

- single chamber ☐
- multiple Chamber ☐
- Modified (describe) ☐
- Other (describe) ☐
- Rotary ☐
- Flue Fed ☐

*See test report May 17, 1982 and December for data on burning

2. Manufacturer's Name: _____
   Model Number _____
   Rated Capacity _____ Pounds / Hour _____ Type Waste
3. Quantity Burned: _____ Pounds / Day
   _____ Tons / Year
4. Operating Schedule _____ Hours / Day
   _____ Days / Year

*1 Disposal Method Codes

1. Open Burning
2. Landfill (No Burning)
3. Incinerator (Complete rest of Form)
4. Conical Burner (TeePee)
5. Burned in Boiler or Furnance
6. Other (Specify)

(AGENCY USE ONLY)

5. Auxiliary Fuel:

Type	NOT APPLICABLE
Amount/Year (Specify Units)	"
Heat Content	"
Percent Sulfur	"
Percent Ash	"
Supplier's Name	"

6. Pollution Control Equipment:

Manufacturer	"
Model Number	"
% Efficiency	"
Type	"
GPM Water Flow (If Wet Scrubber)	"

7. Stack Data:

Height	"	Feet
Inside Exit Diameter	"	Feet
Exit Gas Velocity	"	Feet/Sec.
Exit Gas Volume	"	SCFM
Exit Gas Temp.	"	^{o}F.

8. Estimated Emissions From Refuse Incineration:

Name: NOT APPLICABLE Basis of Estimates:

Particulates	"	Tons/Year	
Sulfur Oxides	"	"	

ADDITIONAL INFORMATION

1. Two copies of construction site plot plan.
2. Two copies of detailed equipment drawings.
3. Two copies of a detailed explanation of the process and control equipment.
4. Two copies of a flow diagram of the of the process or operation showing control devices.

SIGNATURES: If for construction, the application must be submitted in duplicate and both copies should also be signed and stamped by an engineer registered in the State of Mississippi. If application is for Existing Facility or Renewal of Permit to Operate, registered engineer's signature not required. All signatures and stamps must be originals on all copies, not photocopies.

NOT APPLICABLE

TYPED NAME & MISSISSIPPI REGISTRATION NUMBER

NOT APPLICABLE

SIGNATURE OF ENGINEER REGISTERED IN MISSISSIPPI

NOT APPLICABLE

Seal of Engineer
Registered in Mississippi

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED	SLUDGE BURNED	SLUDGE ADDED TO FEEDER
5-1-85	1182.1			
5-2-85	1184.1			6600# Per
5-3-85	1186.5			11400 "
5-4-85	1190.7			
5-7-85	1192.7			1200# Per
5-8-85	1195.5			1200 "
5-9-85	1197.7			
5-10-85	1198.3			
5-11-85	1198.3			

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED	SLUDGE BURNED	SLUDGE ADDED TO FEEDER
4-1-85	1123.1			
4-2-85	1126.5			
4-3-85	1133.6			
4-4-85	1142.5			
4-9-85	1150.0			
4-11.85	1156.3			
4-12-85	1162.6			3600" Pe
4-24-85	1164.2			5400 "
4-25-85	1168.3			6000 "
4-26-85	1172.9			3600 "
4-27-85	1177.2			8400
4-30-85	1179.3			
5-1-85	1182.1			

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED	SLUDGE BURNED	SLUDGE ADDED TO FEEDER
~~3-1-85~~	~~1080.4~~			
3-4-85	108.0			12000
3-5-85	1081.8			12000
3-6-85	1084.3			
3-7-85	1085.3			
3-8-85	1088.2			36000
3-9-85	1089.2			
3-12-85	1090.8			2400 6000
3-13-85	1093.6			
3-14-85	1095.3			
3-15-85	1104.6			3600
3-16-85	1105.3			3600
3-19-85	1105.3			
3-20-85	1106.2			2900
3-21-85	1112.8			5400
3-22-85	1115.4			
3-23-85	1115.8			
3-26-85	1117.0			
3-27-85	1117.1			
3-28-85	1123.1			
3-29-85	1123.1			
3-30	1123.1			

1043.7

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
~~2-5-85~~	~~1043.8~~				1200 cia
2-6-85	1043.7	.1	.3		
2-7-85	1043.8	1.3	4.0		1200#
2-8-85	1045.1	.3	1.2		1200 "
2-11-85	1045.4	4.0	12.0		
2-12-85	1049.4	3.8	11.0		~~1200~~ 720
2-13-85	1053.2	2.8	13.5		19,200#
2-14-85	1056.0	2.6	11.0		
2-15-85	1058.6	2.3	7.0		
2-19-85	1060.9	1.5	4.8		2280#
2-20-85	1062.4	6.8	17.0		
2-21-85	1069.2	.2	.4		1800#
2-22-85	1069.4	.7	3.0		
2-25-85	1070.1	1.3	3.3		
2-26-85	1071.4	.7	2.3		
2-27-85	1072.1	6.8	17.5		1200 cia
2-28-85	1078.9	2.2	6.0		1800 cia
3-1-85	1081.1				
		32.4	114.3		
					19800#

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
1-2-85	989.0	5.6	13.0		2400
1-3-85	994.6	6.3	15.0		2400
1-4-85	1000.9	7.1	19.6		6600
1-7-85	1008.0	.1	.5		
1-8-85	1008.1	5.8	13.8		2400
1-9-85	1013.9	2.1	6.5		1440
1-10-85	1016.0	7.1	15.0		
1-11-85	1023.1	.8	1.4		
1-12-85	1033.9	1.0	2.5		
1-15-85	1024.9	.9	4.0		1200
1-16-85	1025.8	.9	3.0		
1-17-85	1026.7	1.1	4.6		
1-18-85	1027.8	1.3	4.5		
1-19-85	1029.1	.6	1.8		
1-23-85	1029.7	0	0	FEEDING DRY SAWDUST TO WET FUEL. NO SLUDGE	
1-28-85	1031.4	0	0		
1-29-85	1034.8	1.3	4.5		1200 Clea
1-30-85	1036.1	2.7	12.6		2400 "
1-31-85	1038.8	4.9	20.0		1200 "
2-1-85	1043.7	~~1.4~~			
		50.9	142.3		21240

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
12-4-84	944.3	3.4	10.0		9000
12-5-84	947.7	4.9	15.5		4200
12-6-84	952.6	3.1	7.5		
12-7-84	955.7	1.8	6.2		
12-8-84	957.5	2.0	6.8		3000
12-11-84	959.5	2.6	6.1		
12-12-84	962.1	1.3	2.8		
12-13-84	963.4	.5	1.5		3000
12-14-84	963.9	0	0		
12-15-84	963.9	6.5	19.3		
12-19-84	970.4	8.5	19.2		2400
12-20-84	978.9	8.2	20.3		1200
12-21-84	987.1	1.9	6.0		
12-22-84	989.0				
		44.9	119.2		22800

Koppers Company, Inc., Forest Products Group
P.O. Box 160, Tie Plant, MS 38960
Telephone 601-226-4584

RECEIVED
1984 JUL 13 AM 9:09
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL

KOPPERS
Architectural and
Construction Materials

July 11, 1984

Mr. Dan McLeod
Ms. Dept. of Natural Resources
Bureau of Pollution Control
North Air Emission Section
P. O. Box 10385
Jackson, Ms. 39209

RE: Koppers Co., Inc.
Tie Plant, Ms. 38960
Source No. 0960-0012

Dear Mr. McLeod:

As required by our operating permit, the following are enclosed for June, 1984:

1. Daily operating log with sludge feeder rate.
2. In stack opacity strip chart.
3. Strip chart of the six boiler temperature sensors.

I have retained copies for my records. Please don't hesitate to call if you need any further information.

Sincerely,

R. C. Bartlow
Plant Manager

RCB/djm

cc: File

Enclosures

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDE TO FEEDER
6-1-84	455.6	3.1	6.4		1200# cre
6-4-84	458.7	1.0	3.6		
6-5-84	459.7	4.9	10.8		1800# cre
6-6-84	464.6	3.9	7.7		1200# cre
6-7-84	468.5	10.7	19.4		
6-8-84	479.2	5.8	12.8		1200# cre
6-11-84	485.0	3.3	4.0		1200# cre
6-12-84	488.3	4.0	6.5		2600# "
6-13-84	492.3	1.6	2.1		
6-14-84	493.9	1.0	1.9		
6-15-84	~~495.3~~ 494.9	0.4 ~~2.7~~	1.2		
6-18-84	495.3	7.5	14.5		
6-19-84	503.0	4.6	8.0		6000# cre
6-21-84	507.6	5.9	11.5		1800 "
6-22-84	513.5	4.6	9.0		
6-25-84	518.1	4.1	8.0		1200# cre
6-26-84	522.2	12.2	22.3		
6-27-84	534.4	4.8	5.8		
6-28-84	539.2	0.0	0		
6-29-84	539.2	2.2	6.0		
6-30-84	541.4				
		85.6	161.5		12800#

H Department
pers Company, Inc.

STACK SAMPLING DATA SHEET

NT: GRENADA | DATE: 8-17-84 | ΔH@: 1.82 (8-3-84) | HOT BOX NO.: 7

ATION: Boiler Stack | TEST NO.: GR-BS-41 | METER CORRECTION: 1.085 | COLD BOX NO.: 7

IVITY NO: Outlet | NOZZLE: 0.240 | PITOT CORRECTION: .84 | PROBE NO.: 5-5

TROL BOX OPERATOR RJ | STATIC PRESSURE Ps: 0.35 | CONTROL BOX NO.: 3 | FILTER NO.: 614

BE HANDLER MG | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.: 36"

AN UP | BAROMETRIC PRESSURE 29.4 | LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

.nt int	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
6	818	452.907	0.60	1.10	1.10	93	90	8.0	392		34	240	5 min/pt
.3			0.65	1.19	1.19	112	91	7.0	385		35	245	
.7			0.65	1.19	1.19	118	92	6.5	383		35	245	
5.3			0.70	1.28	1.28	122	94	7.5	381		37	250	
.08			0.70	1.28	1.28	124	94	7.5	379		40	250	
4.4	848	471.423	0.65	1.19	1.19	126	95	7.5	375		40	260	
.5													
6	852	471.423	0.55	1.01	1.01	114	100	6.5	380		38	260	
3			0.70	1.28	1.28	124	100	7.5	385		36	250	
.7			0.65	1.19	1.19	130	100	7.0	380		40	260	
5.3			0.60	1.10	1.10	132	102	7.0	383		39	260	
30.8			0.60	1.10	1.10	132	103	7.0	382		39	250	
4.4	922	489.574	0.75	1.38	1.38	134	104	8.0	380		40	250	

LEAK CHECK

	in Hg	Rate
e	10"	LT 0.02

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml H_2O	114	14
2	100 ml H_2O	120	20
3	Dry		
4	X/AP		
5	X/AP		

Koppers Company, Inc. Penta

STACK SAMPLING DATA SHEET

8-17-84 Leak Ck OK

PLANT: Grenada | DATE: 8-17-84 | ΔH@: 1.83 (7-20-84) | HOT BOX NO.: 1

LOCATION: Boiler Stack | TEST NO.: GR-BS-42 | METER CORRECTION: 1.062 | COLD BOX NO.: 1

ACTIVITY NO: Outlet | NOZZLE: 0.243 #2.2 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-3

CONTROL BOX OPERATOR RJ | STATIC PRESSURE Ps: 0.40 | CONTROL BOX NO.: 2 | FILTER NO.: 633

PROBE HANDLER MG | PORT DIRECTION: West/South | NOMOGRAPH SET POINT: 2.0 | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.4 | LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	0947	124,115 ~~734.115~~	0.60	1.60	1.60	106	103	8.5	370		38	250	5 Min/Pt
30.8			0.70	1.40	1.40	122	103	7.5	369		38	255	
25.3			0.6	1.20	1.20	127	103	6.5	377		39	260	
10.7			0.65	1.30	1.30	128	104	6.5	385		38	245	
5.3			0.70	1.40	1.40	128	104	7.5	383		37	250	
1.6	1017	744.578	0.65	1.30	1.30	129	104	7.5	390		41	250	
South													
34.4	1022	744.578	0.70	1.40	1.40	114	105	7.0	380		40	250	
30.8			0.70	1.40	1.40	128	107	7.5	390		40	240	
25.3			0.80	1.60	1.60	130	108	8.5	396		38	260	
10.7			0.90	1.80	1.80	132	108	10.0	405		39	255	
5.3			0.65	1.30	1.30	132	109	7.5	391		37	255	
1.6	1052	765.038	0.60	1.20	1.20	132	109	7.5	402		41	255	

LEAK CHECK

	in Hg	Rate
Before	14 ~~14~~"	✓ 0.02
After	10"	✓

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH	202	102
2	100 ml NaOH	120	20
3	Dry	3	3
4	XAD		
5	XAD 200g Silica Gel	13.90	13.9

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Grenada | DATE: 8-16-84 | ΔH@: 1.82 (8-3-84) | HOT BOX NO.: 2

LOCATION: Boiler Stack | TEST NO.: GR-BS-39 | METER CORRECTION: 1.0085 | COLD BOX NO.: 2

ACTIVITY NO: Outlet | NOZZLE: 0.240 #8 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-3

CONTROL BOX OPERATOR | STATIC PRESSURE Ps: -.37 | CONTROL BOX NO.: 3 | FILTER NO.: 642

PROBE HANDLER | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.5 | LENGTHS OF UMBILICAL ✓ x 25' ___ x 50'

South Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_S °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1642	402.570	.50	0.99	0.99	106	106	4.5	360 ~~331~~		35	240	5 min w/pt
5.3			.65	1.30	1.30	112	110	5.5	377		36	245	
10.7			.70	1.33	1.33	127	109	6.0	375		38	270	
25.3			.80	1.52	1.52	132	109	7.0	383		38	250	
30.8			.65	1.23	1.23	135	109	7.0	376		38	270	
34.4	1712	421.068	.65	1.23	1.23	135	109	7.0	370		40	250	
West													
1.6	1719	421.068	.60	1.14	1.14	126	110	8.0	355		40	270	
5.3			.60	1.14	1.14	132	110	8.0	352		41	250	
10.7			.65	1.23	1.23	134	110	8.0	358		40	250	
25.3			.60	1.14	1.14	135	110	8.0	357		41	240	
30.8			.60	1.14	1.14	137	110	8.0	355		43	255	
34.4	1749	439.375	.70	1.33	1.33	138	110	8.5	360		41	250	

LEAK CHECK

	in Hg	Rate
Before	11	LT 002
After	10	LT 002

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100ML H_2O	182	82
2	100ML H_2O	114	14
3	DRY	1	1
4	XAD-2		
5	SILICA GEL		126

EKOH Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Green Ox | DATE: 8-17-84 | ΔH@: 1.82 (8-3-84) | HOT BOX NO.: 4
LOCATION: Boiler Stack | TEST NO.: GR-OS-43 | METER CORRECTION: 1.0085 | COLD BOX NO.: 4
ACTIVITY NO: Outlet | NOZZLE: 0.240 #8 | PITOT CORRECTION: 0.84 | PROBE NO.: S-1
CONTROL BOX OPERATOR RJ | STATIC PRESSURE Ps: 0.30 | CONTROL BOX NO.: 3 | FILIER NO.: 625
PROBE HANDLER MG | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.: 36"
CLEAN UP | BAROMETRIC PRESSURE 29.4 | LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

South Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	949	489.745	0.60	1.14	1.14	112	108	6.0	370		36	235	5 Min/Pt
5.3			0.70	~~1.33~~ 1.14	~~1.33~~ 1.14	130	108	5.0	370		35	235	
10.7			0.75	1.42	1.42	135	108	6.0	378		38	235	
25.3			0.80	1.52	1.52	137	108	6.5	389		37	235	
30.8			1.0	1.90	1.90	139	109	8.0	384		40	235	
34.4	1019	510.076	0.70	1.33	1.33	140	109	5.0	389		39	235	
West													
1.6	1024	510.076	0.70	1.33	1.33	125	110	5.0	385		37	235	
5.3			0.65	1.23	1.23	138	111	5.5	392		40	235	
10.7			0.60	1.14	1.14	139	111	5.0	382		39	235	
25.3			0.60	1.14	1.14	140	112	5.0	407		38	235	
30.8			0.80	1.52	1.52	142	113	7.0	402		41	235	
34.4	1054	529.149	0.90	1.71	1.71	143	113	7.5	400		42	235	

LEAK CHECK

	in Hg	Rate
efore	10"	0.02
fter	0"	

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml H_2O	202	
2	100 ml H_2O	118	
3	Dry	2	
4	XAD		
5	Silica Gel	10.95	

ERON Department
Koppers Company, Inc.

Penta

STACK SAMPLING DATA SHEET

PLANT: Grenada
DATE: 8-17-84
ΔH@: 1.83 (7-20-84)
HOT BOX NO.: 6
LOCATION: Boiler Stack
TEST NO.: GR-BS-40
METER CORRECTION: 1.002
COLD BOX NO.: 6
ACTIVITY NO: Outlet
NOZZLE: 0.243 #22
PITOT CORRECTION: 0.84
PROBE NO.: 5-4
CONTROL BOX OPERATOR RJ
STATIC PRESSURE Ps: 0.35
CONTROL BOX NO.: 2
FILTER NO.: 655
PROBE HANDLER MC
PORT DIRECTION: West/South
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.4
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

West Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	816	684.907	0.80	1.54	1.54	90	86	5.5	390		35	250	5 min/PT
30.8			0.60	1.16	1.16	107	88	4.5	385		35	250	
25.3			0.55	1.06	1.06	110	88	4.5	389		36	260	
10.7			0.55	1.06	1.06	113	88	4.0	391		38	255	
53			0.60	1.16	1.16	115	90	4.5	388		37	250	
1.6	846	703.820	0.60	1.16	1.16	116	90	4.5	382		36	245	
South													
34.4	850	703.820	0.70	1.35	1.35	104	93	5.5	381		37	250	
30.8			0.70	1.35	1.35	118	94	5.5	384		38	265	
25.3			0.70	1.35	1.35	120	94	5.5	387		38	270	
10.7			0.70	1.35	1.35	122	94	5.5	381		40	270	
53			0.60	1.16	1.16	123	97	5.0	380		38	250	
1.6	920	723.728	0.60	1.16	1.16	124	98	5.0	382		38	250	

LEAK CHECK

	in Hg	Rate
efore	11"	1.7 0.02
r	[illegible]	[illegible]

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH	184	
2	100 ml NaOH	114	
3	Dry		
4	XAD		
5	Silica Gel		13.2

IRON Department
Koppers Company, Inc.

Perla

STACK SAMPLING DATA SHEET

PLANT: Grenada DATE: 8-16-84 ΔH@: 1.83 (7-20-84) HOT BOX NO.: 5
LOCATION: Boiler Stack TEST NO.: GR-BS-38 METER CORRECTION: 1.002 COLD BOX NO.: 5
ACTIVITY NO: Outlet NOZZLE: 0.243 #22 PITOT CORRECTION: 0.84 PROBE NO.: 5-1
CONTROL BOX OPERATOR STATIC PRESSURE Ps: 0.4 CONTROL BOX NO.: 2 FILTER NO.: 558
PROBE HANDLER PORT DIRECTION: West/South NOMOGRAPH SET POINT: STACK DIA.: 36"
CLEAN UP BAROMETRIC PRESSURE 29.5 LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

West Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_S °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1640	633.005	0.6	1.22	1.22	103	100	6.0	360		34	240	5 Min/Pt
30.8			0.6	1.22	1.22	118	102	6.0	360		35	240	
25.3			0.5	1.0	1.0	120	108	5.0	364		36	250	
10.7			0.65	1.30	1.30	126	107	6.0	372		36	260	
5.3			0.60	1.20	1.20	127	107	6.0	380		38	260	
1.6	1710	650.225	0.60	1.20	1.20	127	106	6.0	380		38	260	
South													
34.4	1717	652.225	0.70	1.40	1.40	116	106	6.0	360		38	260	
30.8			0.70	1.40	1.40	124	105	6.0	354		36	260	
25.3			0.70	1.40	1.40	127	105	6.0	351		37	250	
10.7			0.60	1.20	1.20	130	105	6.0	351		40	255	
5.3			0.60	1.20	1.20	130	106	6.0	353		41	250	
1.6	1747	671.897	0.60	1.20	1.20	130	106	6.0	357		41	250	

LEAK CHECK

	in Hg	Rate
efore	10.5	LT 0.02
fter	7	LT

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100ml NaOH	156	56
2	100ml NaOH	112	12
3	Dry		
4	XAD		
5	200g Silica Gel		1217

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
11-1-84	882.5	2.1	10.0		3000
11-2-84	884.6	1.0	6.0		
11-5-84	885.6	2.5	10.8		3600
11-6-84	888.1	2.4	9.3		3600
11-7-84	890.5	2.3	9.0		
11-8-84	892.8	2.1	5.0		8400
11-12-84	894.9	1.7	8.3		
11-13-84	896.6	2.7	19.3		
11-14-84	899.3	9.2	8.1		8400
11-15-84	908.5	3.5	6.3		1200
11-16-84	912.0	1.7	5.3		
11-19-84	913.7	1.9	16.5		6600
11-20-84	915.6	6.6	22.7		
11-21-84	922.1	8.4	9.3		6600
11-26-84	930.5	3.6	7.5		6600
11-27-84	934.1	1.6	8.5		
11-28-84	935.7	2.2	10.5		8400
11-29-84	937.9	2.7	7.7		
11-30-84	940.6	2.7	9.5		9000
12-3-84	943.3		189.6		

342#/110

64800

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
10-1-84	819.8	2.7	9.0		
10-2-84	822.5	10.9	19.0		
10-3-84	831.4	9.2	18.0		4200# Coal
10-4-84	840.6	3.9	13.5		4800 "
10-5-84	846.5	1.5	6.2		
10-8-84	848.0	0.7	2.3		3000# Coal
10-9-84	848.7	3.9	10.5		
10-10-84	852.6	1.2	2.7		2400# Coal
10-11-84	853.8	1.3	4.0		
10-12-84	855.1	1.3	4.7		5400# Coal
10-15-84	856.4	0.8	2.1		
10-16-84	857.2	1.6	4.3		
10-17-84	858.7	0.9	2.6		
10-18-84	859.6	1.3	3.0		4200# Coal
10-19-84	860.9	3.4	9.0		
10 23 84	864.3	5.4	12.4		3600# Coal
10-24-84	869.7	4.7	10.4		
10-26-84	874.4	5.3	13.7		4800# Coal
10-31-84	879.7	2.8	2.8		
11-1-84	882.5				
					28800

62.7 FEEDER HRS

149.8 BOILER HRS

193 #/hr

Hopper 2000
Drum 600

SLUDGE FEEDER LOG

Boiler #1

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
9-4-84	761.9 ✓	5.2	8.5		
9-5-84	767.1 ✓	1.5	3.4		1000# crop
9-6-84	768.6 ✓	3.8	5.0		
9-8-84	772.4 ✓	0.9	3.2		
9-9-84	773.3 ✓	5.3	11.9		1200# crop
9-11-84	778.6 ✓	2.1	8.0		1600# "
9-12-84	780.7 ✓	7.6	17.0		1600# crop
9-13-84	788.3 ✓	2.6	6.7		
9-14-84	790.9 ✓	2.0	5.6		1200# crop
9-16-84	792.9 ✓	2.0	5.4		
9-19-84	794.9 ✓	2.7	6.2		
9-20-84	797.6 ✓	1.5	2.8		
9-21-84	799.1 ✓	1.9	4.5		2400 crop
9-22-84	801.0 ✓	2.0	5.0		
9-23-84	803.0 ✓	7.2	15.4		
9-25-84	810.2 ✓	7.4	12.5		6000 crop
9-26-84	817.6 ✓	0.7	1.2		4000 "
9-27-84	818.3 ✓	0.5	1.2		
9-28-84	818.8 ✓	1.0	1.7		
9-29-84	819.8				
		125.2 ✓			19000

152#/hr

Date of VEE	Time of VEE	Results of VEE	Conditions
8/16/84	4:55 p.m. to 5:13 p.m.	Set 1 4.375% Set 2 5.83% Set 3 3.33% Average Opacity 4.51%	Sludge was being fed at a rate of 800 lb/hr (95% creosote and 5% pentachlorophenol). Opacity monitor was reading 10%. Steam flow was 20,000 lb/hr.

*Note: The reason there was no VEE peformed during the morning was due to the obscurity of the stack.

In conclusion to the best knowledge of this observer the testing was performed in accordance with approved methods and the results should be accepted as a valid representation of the plant's emissions.

DNM:els

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS

Address: TIE PLANT ROAD

City: TIE PLANT, MS

Emission Point: WOODWASTE BOILER

Date: 8-15-84

Is emission point operation normal ? YES *

V. E. Observer: CONNIE SIMMONS

Certification Expiration: OCT. 19, 1984

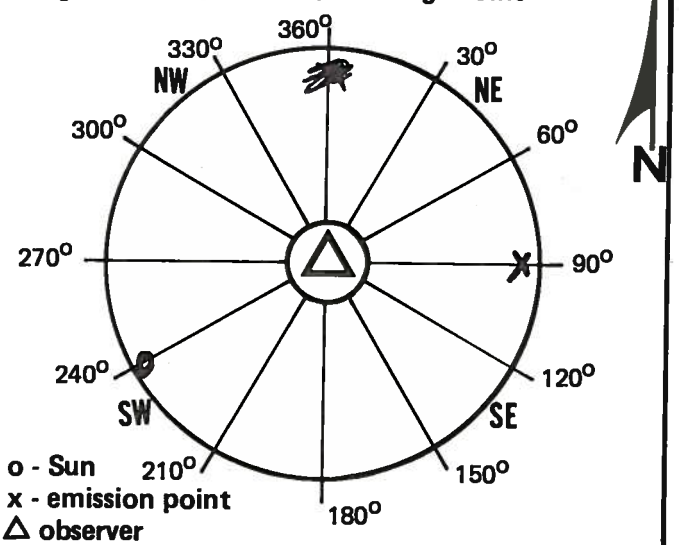
	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	White	White
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	SW	SW
Wind speed	0-5 mph	0-5 mph
Ambient temperature	90°F	90°F
Discharge temperature	~330°F	~330°F
Sky conditions	BROKEN	BROKE

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	3:40	3:46	95	3.96
2	3:46	3:52	100	4.17
3	3:52	3:58	110	4.58

Overall Average: 4.24 %

Min.	Seconds 0	15	30	45
0	5	5	0	5
1	5	0	0	0
2	5	0	5	5
3	5	0	5	5
4	5	10	5	5
5	5	5	5	5
0	5	0	5	5
1	0	5	5	5
2	5	5	5	0
3	5	5	5	5
4	0	5	5	5
5	5	5	5	5
0	0	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	0	5

Diagram Of Observation/Discharge Point



Remarks: * ≈ 400 lb/HR of CREOSOTE SLUDGE AND PENTA ADDED TO BOILER FEED INPUT.
STACK TEST PERFORMED DURING VES: OPACITY MONITOR READING 10 %.

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS

Address: TIE PLANT ROAD

City: TIE PLANT, MS

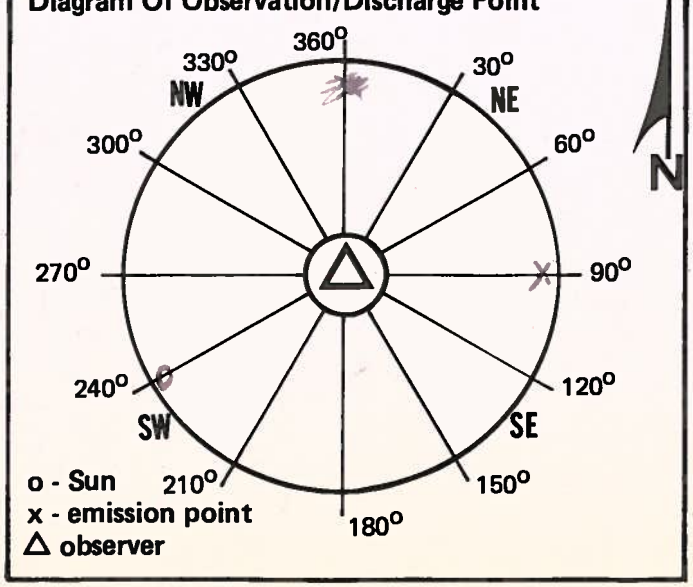
Emission Point: WOODWASTE BOILER

Date: 8-15-84

Is emission point operation normal ? yes *

	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	white	white
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	SW	SW
Wind speed	0-5 mph	0-5 mph
Ambient temperature	90°F	90°F
Discharge temperature	~330°F	~330°F
Sky conditions	BROKEN	BROKE

Diagram Of Observation/Discharge Point



V. E. Observer: Connie Simmons

Certification Expiration: Oct. 19, 1984

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	3:40	3:46	95	3.96
2	3:46	3:52	100	4.17
3	3:52	3:58	110	4.58

Overall Average: 4.24 %

Min.	Seconds 0	15	30	45
0	5	5	0	5
1	5	0	0	0
2	5	0	5	5
3	5	0	5	5
4	5	10	5	5
5	5	5	5	5
0	5	0	5	5
1	0	5	5	5
2	5	5	5	0
3	5	5	5	5
4	0	5	5	5
5	5	5	5	5
0	0	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	0	5

Remarks: * ≈ 400 lb/HR of creosote sludge and penta added to boiler feed input.
STACK TEST PERFORMED DURING V.E.
OPACITY MONITOR READING 10%

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS

Address: TIE PLANT Rd.

City: TIE PLANT, MS.

Emission Point: WOOD WASTE

Date: 8-15-84

Is emission point operation normal ? yes*

V. E. Observer: CONNIE SIMMONS

Certification Expiration: Oct. 19, 1984

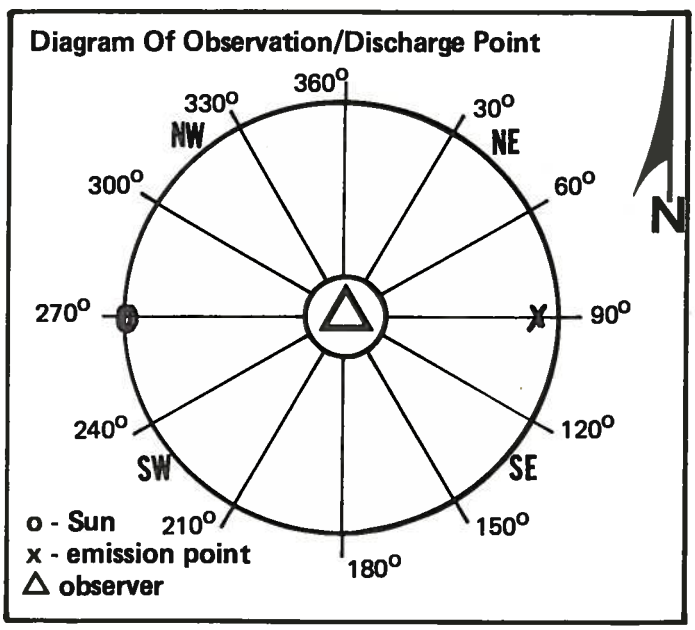
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	5:15	5:21	198	8.25
2	5:21	5:27	220	9.17
3	5:27	5:33	260	10.83

Overall Average: 9.42 %

	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	TAN	TAN
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	S	S
Wind speed	0-5 mph	0-5 mph
Ambient temperature	85°F	85°F
Discharge temperature	~330	~330°F
Sky conditions	SCATTERED	SCATTERED

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	10	10	15	10
2	15	10	15	10
3	15	10	10	10
4	5	10	5	10
5	10	15	10	10
0	10	10	15	15
1	10	15	10	10
2	15	10	15	10
3	10	10	5	5
4	5	10	5	5
5	5	5	5	5
0	10	5	10	5
1	10	10	10	10
2	15	10	10	15
3	10	15	10	5
4	10	15	15	15
5	10	15	10	10

Diagram Of Observation/Discharge Point



Remarks: * ~400 lb/HR CREOSOTE & SLUDGE AND PENTA ADDED TO BOILER fuel.

STACK TEST PERFORMED DURING VEE. Run No. 2

OPACITY Monitor READING = 10 % +/-

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS

Address: TIE PLANT Rd.

City: TIE PLANT, MS.

Emission Point: WOOD WASTE

Date: 8-15-84

Is emission point operation normal ? yes*

V. E. Observer: CONNIE SIMMONS

Certification Expiration: OCT. 19, 1984

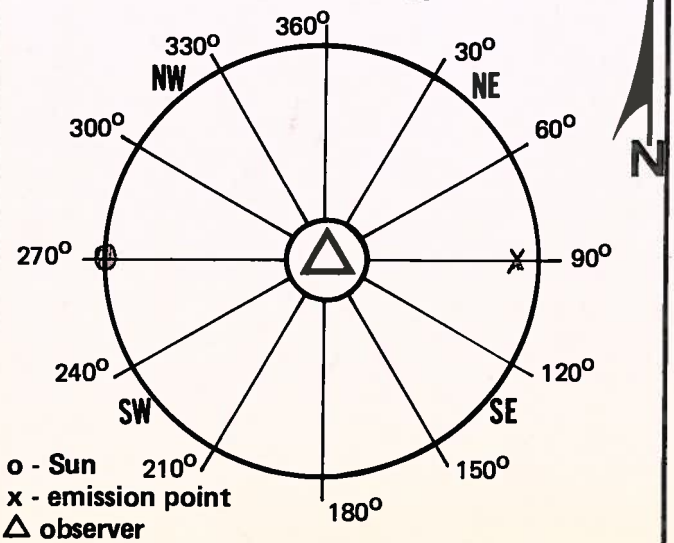
	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	TAN	TAN
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	S'	S'
Wind speed	0-5 mph	0-5 mph
Ambient temperature	85°F	85°F
Discharge temperature	~330	~330°F
Sky conditions	SCATTERED	SCATTERED

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	5:15	5:21	198	8.25
2	5:21	5:27	220	9.17
3	5:27	5:33	260	10.83

Overall Average: 9.42 %

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	10	10	15	10
2	15	10	15	10
3	15	10	10	10
4	5	10	5	10
5	10	15	10	10
0	10	10	15	15
1	10	15	10	10
2	15	10	15	10
3	10	10	5	5
4	5	10	5	5
5	5	5	5	5
0	10	5	10	5
1	10	10	10	10
2	15	10	10	15
3	10	15	10	5
4	10	15	15	15
5	10	15	10	10

Diagram Of Observation/Discharge Point



Remarks: * ~400 lb/hr CREOSOTE & SLUDGE HAS BEEN ADDED TO BOILER fuel

STACK TEST PERFORMED DURING VEE Run No. 2

OPACITY MONITOR READING = 10 % - 1

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS, Co.

Address: Tie Plant Road

City: ~~JACKSON~~ TIE PLANT MS.

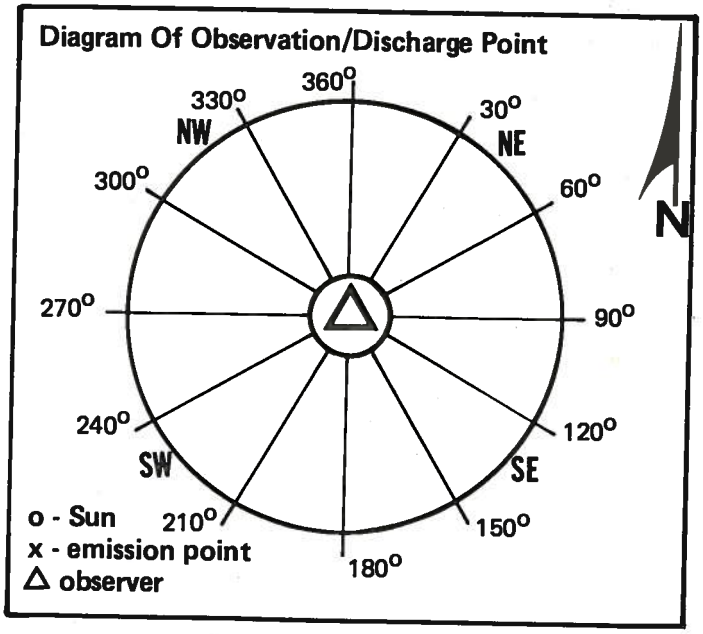
Emission Point: WOODWASTE BOILER

Date: 8-16-84

Is emission point operation normal ? yes *

	Initial	Final
Distance to discharge	100	100
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	tan	TAN
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	N	N
Wind speed	5-10 mph	5-10 mph
Ambient temperature	90° F	90° F
Discharge temperature	~300°F	~300°F
Sky conditions	BROKEN	BROKEN

Diagram Of Observation/Discharge Point



V. E. Observer: C. Simmons

Certification Expiration: Oct. 19, 1980

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	1:50	1:56	1040	43.33
2	1:56	2:02	250	10.42
3	2:02	2:08	145	6.04

Overall Average: 19.93

Min.	Seconds 0	15	30	45
0	80	85	60	40
1	20	20	60	65
2	45	25	35	50
3	50	50	30	15
4	15	60	60	40
5	20	35	35	45
0	20	20	15	15
1	15	15	15	10
2	10	10	10	5
3	10	5	5	5
4	10	10	5	5
5	5	10	10	10
0	5	10	5	5
1	10	5	5	5
2	5	10	5	5
3	5	5	5	5
4	5	10	5	5
5	5	5	10	5

Remarks: Set #1 During Soot Blowing.

* Adding ~~Burning~~ creosote + penta to Bailer feed (a 400 lb/hr)

Opacity monitor read 100-20 during set 1

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS Co.

Address: Tie Plant Road

City: ~~JACKSON~~ TIE PLANT MS.

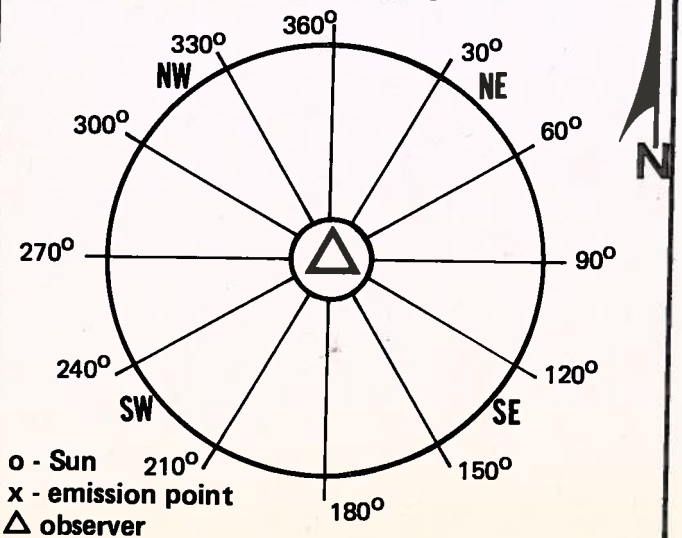
Emission Point: WOODWASTE BOILER

Date: 8-16-84

Is emission point operation normal ? yes *

	Initial	Final
Distance to discharge	100	100
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	tan	TAN
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	N	N
Wind speed	5-10 mph	5-10 mph
Ambient temperature	90° F	90° F
Discharge temperature	~ 300°F	~300°F
Sky conditions	BROKEN	BROKEN

Diagram Of Observation/Discharge Point



V. E. Observer: C. Simmons

Certification Expiration: Oct. 19, 1980

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	1:50	1:56	1040	43.33
2	1:56	2:02	250	10.42
3	2:02	2:08	145	6.04

Overall Average: 19.93

Min.	Seconds 0	15	30	45
0	80	85	60	40
1	20	20	60	65
2	45	25	35	50
3	50	50	30	15
4	15	60	60	40
5	20	35	35	45
0	20	20	15	15
1	15	15	15	10
2	10	10	10	5
3	10	5	5	5
4	10	10	5	5
5	5	10	10	10
0	5	10	5	5
1	10	5	5	5
2	5	10	5	5
3	5	5	5	5
4	5	10	5	5
5	5	5	10	5

Remarks: Set #1 During Soot Blowing.

* Adding ~~Burning~~ creosote + Penta to Boiler feed (≈ 400 lbs/hr)

Opacity Monitor read 100-20 during set 1

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS
Address: TIE PLANT ROAD
City: TIE PLANT, MS
Emission Point: WOODWASTE BOILER
Date: 8-16-84
Is emission point operation normal ? Yes*

V. E. Observer: Connie Simmons
Certification Expiration: Oct 19, 1984

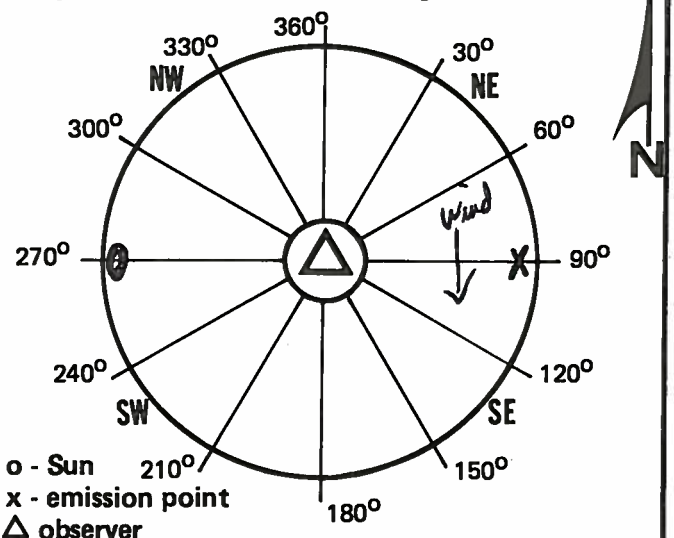
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	4:55	5:01	105	4,375
2	5:01	5:07	140	5,83
3	5:07	5:13	80	3,33

Overall Average: 4.51 %

	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	white	white
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	N	N
Wind speed	0-5 mph	0-5 mph
Ambient temperature	85°F	85°F
Discharge temperature	~325°F	~325°F
Sky conditions	SCATTERED	SCATTERED

Min.	Seconds 0	15	30	45
0	5	5	5	5
1	5	5	5	5
2	5	0	0	5
3	5	5	0	5
4	5	5	5	5
5	5	5	5	5
0	5	10	5	5
1	5	5	5	5
2	10	5	5	10
3	5	5	10	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	0	5	0	5
2	5	5	5	5
3	5	5	5	5
4	0	0	5	0
5	0	5	0	0

Diagram Of Observation/Discharge Point



Remarks: * ~800 lb/Hr of ~95% Creosote Sludge and ~5% Penta Sludge ADDED to Boiler fuel.
→ Opacity Meter Reading 10%
→ STACK TEST BEING PERFORMED during VEE - Run 1 on 800 lb/Hr Sludge
→ Steam Flow ≈ 20,000 lb/Hr

Received By: John T. Kennedy

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: KOPPERS

Address: TIE PLANT ROAD

City: TIE PLANT, MS

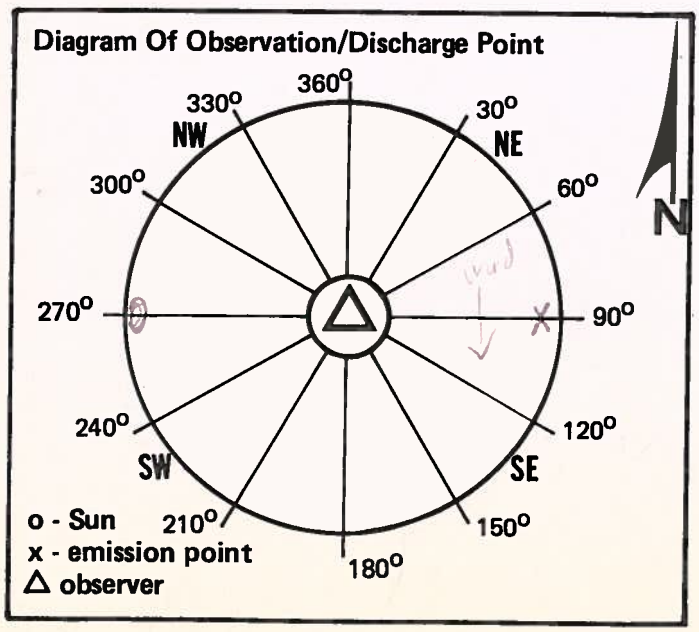
Emission Point: WOODWASTE BOILER

Date: 8-16-84

Is emission point operation normal ? yes *

	Initial	Final
Distance to discharge	100'	100'
Direction to discharge	E	E
Height of observation point	0'	0'
Height of discharge	50'	50'
Plume color	white	white
Plume background	SKY	SKY
Water vapor in plume ?	NO	NO
Wind direction (from)	N	N
Wind speed	0-5 mph	0-5 mph
Ambient temperature	85°F	85°F
Discharge temperature	~325°F	~325°F
Sky conditions	SCATTERED	SCATTERED

Diagram Of Observation/Discharge Point



V. E. Observer: Connie Simmons

Certification Expiration: Oct 19, 1984

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	4:55	5:01	105	4.375
2	5:01	5:07	140	5.83
3	5:07	5:13	80	3.33

Overall Average: 4.51 %

Min.	Seconds 0	15	30	45
0	5	5	5	5
1	5	5	5	5
2	5	0	0	5
3	5	5	0	5
4	5	5	5	5
5	5	5	5	5
0	5	10	5	5
1	5	5	5	5
2	10	5	5	10
3	5	5	10	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	0	5	0	5
2	5	5	5	5
3	5	5	5	5
4	0	0	5	0
5	0	5	0	0

Remarks: * ~800 lb/HR of ~95% creosote sludge and ~5% Penta sludge ADDED to boiler fuel

→ Opacity Meter reading 10%

→ STACK TEST BEING PERFORMED DURING VEE - RUN 1 on 800 lb/HR Sludge

→ Steam flow ≈ 20,000 lb/HR

Received By: [signature]

PRINTED IN USA

PLANT Koppe[illegible]

SUBJECT [illegible]

NO.

DATE [illegible]

BY

Ex[illegible]

[illegible]

I 3/15 [illegible]

Approx [illegible]

0300 - [illegible]

I 3/15 400 LB [illegible] No [illegible]

Approx [illegible]

1530 - [illegible]

II 3/16 [illegible] LB [illegible]

Approx [illegible]

[illegible] 32 [illegible]

0300 - 1330

I

3/17 [illegible]

3/16 1640 - 1750 [illegible]

3/17 0300 - 1100 [illegible]

PLANT Koppers, Tie Plant, Ms.

SUBJECT Temperatures

NO.

DATE 8-15-8

BY

Temperature 3 feet (Probe length)	Temperature 5 feet	Point Tested
1520°F	1475°F	Point 4
	1851°F	Cell 2 upper site glass
1600°F		
1605°F ← Thermocouple	1470°F	Point 2
	1230°F	North Side 2nd Floor Site Glass 40% Burner Capacity
1345°F	1415°F	Point 3
1731°F	1724°F	Point 1
	1584°F	Cell No. 1 upper site glass
	900°F	South Side 2nd Floor Site Glass 20% Burner Capacity

STEAM LOADING 8000 P/hr

RATED CAPACITY 30,000 P/hr

PRINTED IN USA

PLANT KOPPERS TIE PLANT #3

SUBJECT TEMPERATURES

NO.

DATE 8/16

BY

TIME 11:10 START

LOCATION	TEMPERATURES @ 5th	TEMPERATURES @ 3rd	BOILER RATE SITE GLASS
CELL #1 (NORTH)			
#1	2150	2250	29,000
#3	2220	2150	29,000
SITE GLASS	2150	—	24,000
CELL #2 (SOUTH)			
#4	2220	2240	27,000
SITE GLASS	2160	—	29,000
UPPER CHAMBER		—	
SOUTH	1785	—	33,450
NORTH	2020	—	34,000

Ekon Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Grenada
LOCATION: Boiler Stack
ACTIVITY NO: Outlet
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 8-16-84
TEST NO.: GR-BS-39
NOZZLE: 0.240 #8
STATIC PRESSURE Ps: -.37
PORT DIRECTION: South/West
BAROMETRIC PRESSURE 29.5

ΔH@: 1.82 (8-3-84)
METER CORRECTION: 1.0085
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ✓ x 25' ___ x 50'

HOT BOX NO.: 2
COLD BOX NO.: 2
PROBE NO.: 5-3
FILTER NO.: 642
STACK DIA.: 36"

South Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1642	402.570	.50	0.99	0.99	106	106	4.5	~~331~~ 360		35	240	5 min/p
5.3			.65	1.30	1.30	112	110	5.5	377		36	245	
10.7			.70	1.33	1.33	127	109	6.0	375		38	270	
25.3			.80	1.52	1.52	132	109	7.0	383		38	250	
30.8			.65	1.23	1.23	135	109	7.0	376		38	270	
34.4	1712	421.068	.65	1.23	1.23	135	109	7.0	370		40	250	
West													
1.6	1719	421.068	.60	1.14	1.14	126	110	8.0	355		40	270	
5.3			.60	1.14	1.14	132	110	8.0	352		41	250	
10.7			.65	1.23	1.23	134	110	8.0	358		40	250	
25.3			.60	1.14	1.14	135	110	8.0	357		41	240	
30.8			.60	1.14	1.14	137	110	8.0	355		43	255	
34.4	1749	439.385	.70	1.33	1.33	138	110	8.5	360		41	250	

LEAK CHECK

	in Hg	Rate
Before	11	LT 0.02
After	[illegible]	LT

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ML H_2O	18	82
2	100 ML H_2O	14	14
3	DRY	1	1
4	XAD-2		
5	SIL GEL		12.6

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

8/15-16/84

PLANT: GRENADA | DATE: 8/15/84 | ΔH@: 1.82 (8-3-84) | HOT BOX NO.: 7

LOCATION: BOILER STACK | TEST NO.: GR-PS-25 | METER CORRECTION: 1.0095 | COLD BOX NO.: 7

ACTIVITY NO: | NOZZLE: 240 ± 5 | PITOT CORRECTION: .84 | PROBE NO.: 5-5

CONTROL BOX OPERATOR | STATIC PRESSURE Ps: -.25 | CONTROL BOX NO.: 3 | FILTER NO.: 627

PROBE HANDLER | PORT DIRECTION: South / West | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1249	132.028	.60	1.18	1.18	117	109	7.0	322		ICE DOWN	≈250	5 min/PT
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		34	[illegible]	
[illegible]			.65	[illegible]	[illegible]	[illegible]	[illegible]	7.0	326		34	[illegible]	
25.3			.60	1.18	1.18	132	108	7.0	324		40	250	
30.6			.60	1.18	1.18	133	108	7.0	320		43	245	
34.4	1319	150.515	.60	1.18	1.18	134	108	7.0	320		36	260	
WEST													
1.6	1326	150.515	.50	1.00	1.00	120	108	6.5	321		40	240	
5.3			.65	1.28	1.28	131	108	7.5	342		43	245	
20.1			.70	1.38	1.38	133	108	8.0	354		42	250	
25.3			.60	1.18	1.18	134	108	7.0	356		43	250	
30.8			.55	1.09	1.09	135	108	7.0	353		42	250	
34.4	1356	168.959	.60	1.18	1.18	136	108	7.0	350		41	250	

LEAK CHECK

	in Hg	Rate
Before	15"	LT 0.02
After	16"	LT 0.02

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ML H_2O	158	58
2	100 ML H_2O	110	10
3	DRY (XAD-2) X2	4	4
4,5			
6	Sil Gel		9.13

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

Ran 1-1 Lead 8-15-84

PLANT: Grenada | DATE: 8/15/84 | ΔH@: 1.82 (8-3-84) | HOT BOX NO.: 4

LOCATION: Boiler Stack | TEST NO.: GR-155-23 | METER CORRECTION: 1.0085 | COLD BOX NO.: 4

ACTIVITY NO: Outlet | NOZZLE: 0.240 ± | PITOT CORRECTION: 0.84 | PROBE NO.: 5-3

CONTROL BOX OPERATOR | STATIC PRESSURE Ps: -.30" | CONTROL BOX NO.: 3 | FILTER NO.: 647

PROBE HANDLER | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1040	93.513	.60	1.18	1.18	110	100	5.0	368		ICED DOWN	245	5 min/pt
5.3			.55	1.08	1.08	123	101	5.5	360		37	270	
10.7			.65	1.27	1.27	127	102	5.5	365		37	250	
25.3			.75	1.47	1.47	131	105	6.5	372		38	2600	
30.8			.80	1.57	1.57	134	106	7.0	373		36	2600	
34.4	1116	112.962	.70	1.37	1.37	135	108	6.0	362		36	270	
West													
1.6	1123	112.862	.60	1.18	1.18	120	106	5.0	365		37	250	
5.3			.65	1.27	1.27	130	105	6.0	362		37	270	
10.7			.60	1.18	1.18	130	105	6.0	373		39	250	
25.3			.55	1.08	1.08	130	105	6.0	371		40	250	
30.8			.65	1.27	1.27	130	105	7.0	363		40	280	
34.4	1153	131.342	.60	1.18	1.18	130	105	6.0	362		40	240	

LEAK CHECK

	in Hg	Rate
Before	15"	LT 0.02
After	"	LT

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml H_2O	168	
2	100 ml H_2O	115	
3	DRY	2	
4	XAD-2		
5	Silica	198	

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

8-15-84

PLANT: Grenada | DATE: 8/15/84 | ΔH@: 1.82 (8/3/84) | HOT BOX NO.: 2

LOCATION: Boiler Stack | TEST NO.: GR-BS-2.1 | METER CORRECTION: 1.0085 | COLD BOX NO.: 2

ACTIVITY NO: Outlet | NOZZLE: .240 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-4

CONTROL BOX OPERATOR | STATIC PRESSURE Ps: -.30 | CONTROL BOX NO.: 3 | FILTER NO.: 644

PROBE HANDLER | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: 2.0 | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	0817	53.724	.70	1.35	1.35	90	85	7.0	355		~~250°F~~	250°F	5m w/ft
5.3			.65	1.25	1.25	102	84	7.0	344				
10.7			.70	1.35	1.35	110	88	7.5	340				
25.3			.75	1.44	1.44	114	86	8.0	338				
30.8			.75	1.44	1.44	116	87	8.0	336				
34.4	0841	73458	.65	1.28	1.28	119	90	7.0	338				
WEST													
1.6	0853	73458	.65	1.28	1.28	109	92	7.0	336				
5.3			.65	1.28	1.28	120	93	7.0	339				
10.7			.70	1.38	1.38	121	93	8.0	350		39°F	260	
25.3			.60	1.20	1.20	123	93	7.0	366		39°F	✓	
30.8			.65	1.28	1.28	123	93	8.0	378		39°F	✓	
34.4	0923	92109	.70	1.38	1.38	124	94	8.5	373		39°F	250	

LEAK CHECK

	in Hg	Rate
Before	10	.02 CFM
After	✓	.02

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ML H_2O	167	67
2	100 ml H_2O	114	14
3	DRY	5	5
4	VAD-2		
5	Si-Gel		4.67

Koppers Company, Inc. Penta

STACK SAMPLING DATA SHEET

8/15/84

PLANT: Grenada DATE: 8-15-84 ΔH@: 1.83 (7/20/84) HOT BOX NO.: 1

LOCATION: Boiler Stack TEST NO.: GR-155-24 METER CORRECTION: 1.002 COLD BOX NO.: 1

ACTIVITY NO: Outlet NOZZLE: 0.243 #22 PITOT CORRECTION: 0.84 PROBE NO.: 5-4

CONTROL BOX OPERATOR _____ STATIC PRESSURE Ps: -0.3 CONTROL BOX NO.: 2 FILTER NO.: 659

PROBE HANDLER _____ PORT DIRECTION: West/South NOMOGRAPH SET POINT: 2.05 STACK DIA.: 36"

CLEAN UP _____ BAROMETRIC PRESSURE 29.35 LENGTHS OF UMBILICAL ____ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1247	345.240	0.6	1.23	1.23	104	103	8.0	317		35	230	5 min/Pt
30.8			0.6	1.23	1.23	119	102	8.0	328		35	235	
25.3			0.5	1.02	1.02	121	101	7.0	330		38	240	
10.7			0.5	1.02	1.02	122	101	7.0	324		35	240	
5.3			0.5	1.02	1.02	123	101	7.0	322		40	245	
1.6	1317	363.401	0.5	1.02	1.02	125	102	7.0	320		35	245	
South													
34.4	1324	363 401	0.6	1.23	1.23	114	104	8.0	323		39	260	
30.8			0.8	1.64	1.64	125	104	9.5	344		35	250	
25.3			0.8	1.64	1.64	126	104	10.0	347		35	260	
10.7			0.6	1.23	1.23	126	104	8.5	354		39	250	
5.3			0.6	1.23	1.23	127	104	8.5	357		41	270	
1.6	1354	382.949	0.5	1.02	1.02	127	104	8.0	353		41	250	

LEAK CHECK

	in Hg	Rate
Before	15.0	LT 0.003m
After	6.0	LT [illegible]

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 NaOH	158	58
2	100ml NaOH	108	8
3	Dry	3	3
4	200g Silica Gel		1163
5	XAD		

EROH Department
Koppers Company, Inc.

Penta

STACK SAMPLING DATA SHEET

Dan M McLeod
~~[illegible]~~ 8-15-84

PLANT: Grenada
DATE: 8-15-84
ΔH@: 1.83 (7/20/84)
HOT BOX NO.: 6
LOCATION: Boiler Stack
TEST NO.: GR-BS-22
METER CORRECTION: 1.002
COLD BOX NO.: 6
ACTIVITY NO:
NOZZLE: 0.243 #22
PITOT CORRECTION: 0.84
PROBE NO.: 6 S-1
CONTROL BOX OPERATOR RJ
STATIC PRESSURE Ps:
CONTROL BOX NO.: 2
FILTER NO.: 643
PROBE HANDLER GR
PORT DIRECTION: West/South
NOMOGRAPH SET POINT:
STACK DIA.: 38"
CLEAN UP AL + JTK
BAROMETRIC PRESSURE 29.35
LENGTHS OF UMBILICAL ____ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1044	303.652 ~~303.652~~	0.8	1.65	1.65	102	98	6.0	368	[illegible]	ICED DOWN	2	5 min/pt
30.8			0.7	1.43	1.43	119	98	5.0	369			250	
25.3			0.55	1.13	1.13	123	101	4.5	363		34	270	
10.7			0.65	1.33	1.33	126	102	5.0	371		36	260	
5.3			0.60	1.23	1.23	128	103	5.0	370		37	250	
1.6	1114	323.576	0.60	1.23	1.23	128	104	5.5	373		37	260	
South													
34.4	1121	323.576	0.75	1.53	1.53	110	102	6.0	372		40	270	
30.8			0.85	1.74	1.74	122	100	7.5	366		39	260	
25.3			0.80	1.64	1.64	122	100	7.0	382		37	260	
10.7			0.60	1.23	1.23	121	98	6.0	370		40	260	
5.3			0.70	1.43	1.43	121	98	7.0	368		40	270	
1.6	1151	344.343	0.50	1.02	1.02	121	96	7.0	364		40	250	

LEAK CHECK

	in Hg	Rate
Before	15"	LT 0.02
After	[illegible]	LT

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100ml NaOH	175	75
2	100ml NaOH	118	18
3	Dry		4
4	200g Silica Gel		11.54
5	XAD		

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: GRENADA | DATE: 8-15-84 | ΔH@: 1.83 (7/20/84) | HOT BOX NO.: 5

LOCATION: BOILER STACK | TEST NO.: GR-BS-20 | METER CORRECTION: 1.002 | COLD BOX NO.: 5

ACTIVITY NO: | NOZZLE: .243 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-5

CONTROL BOX OPERATOR RJ | STATIC PRESSURE Ps: -0.30 | CONTROL BOX NO.: 2 | FILTER NO.: 646

PROBE HANDLER GRR | PORT DIRECTION: WEST/SOUTH | NOMOGRAPH SET POINT: 2.11 | STACK DIA.: 36"

CLEAN UP JR & AL | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ____ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	815	260.107	0.8	1.63	1.63	86	84	11.0	354		ICEP DOWN	250	5 MIN/PT
30.9			0.6	1.22	1.22	98	84	8.5	346				
25.3			0.55	1.12	1.12	105	85	8.0	344				
10.7			0.55	1.12	1.12	109	86	8.0	336				
5.3			0.55	1.12	1.12	111	88	8.0	336				
1.6	845	279.810	0.55	1.12	1.12	113	84	8.0	328				
(South Nozzle)													
34.4	851	279.810	0.70	1.42	1.42	100	91	10.0	335				
30.9			0.75	1.53	1.53	112	90	10.5	372				
25.3			0.75	1.53	1.53	113	91	10.5	346		35° F	280° F	
10.7			0.75	1.53	1.53	115	92	11.0	358		38°	260°	
5.3			0.80	1.63	1.63	115	92	12.0	373		38°	260°	
1.6	921	300.752	0.60	1.22	1.22	115	93	10.0	376		39°	260°	

LEAK CHECK

	in Hg	Rate
Before	9.0	1.02 CFM
After	10.1	0.03

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH	172	72
2	100 ml NaOH	118	18
3	Dry		1
4	Silica Gel	9.75	9.75
5			

Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Granada | DATE: 8-15-84 | ΔH@: 1.83 (7-20-84) | HOT BOX NO.: 5

LOCATION: Boiler Stack | TEST NO.: GR-BS-26 | METER CORRECTION: 1.002 | COLD BOX NO.: 5

ACTIVITY NO: Outlet | NOZZLE: .243 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-1

CONTROL BOX OPERATOR [illegible] | STATIC PRESSURE Ps: .3 | CONTROL BOX NO.: 2 | FILTER NO.: 6022

PROBE HANDLER [illegible] | PORT DIRECTION: West/South | NOMOGRAPH SET POINT: _____ | STACK DIA.: 36"

CLEAN UP _____ | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL _____ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	~~15:31~~ 1535	383.568	.95	1.84	1.84	114	110	11.5	350				
30.3			.70	1.43	1.43	121	107	8.5	351	~~[illegible]~~	37	255	
25.3			.74	1.92	1.92	125	107	5.5	344		33	240	
10.7			.745	.82	.82	125	106	5.5	339		34	240	
5.3			.55	1.13	1.13	128	107	6.5	335		34	250	
1.6	1601	403.018	.55	1.13	1.13	130	107	6.5	338		34	250	
South											3		
34.4	16~~37~~	403.018	.60	1.23	1.23	124	107	7.5	316				
30.3	08		.75	1.53	1.53	121	108	9.0	332		37	250	
25.3			.65	1.33	1.33	130	108	8.0	325		34	250	
10.7			.60	1.23	1.23	132	108	8.0	328		35	250	
5.3			.60	1.23	1.23	132	108	7.5	326	08	38	250	
1.6	1637	403.780	.60	1.23	1.23	132	108	8.0	325		38	250	

LEAK CHECK

	in Hg	Rate
Before	11.0	.002 CFM
After	9 ^	.002

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH (4.0%)	157	57
2	100 ml NaOH (4.0%)	110	10
3	Dry	3	3
4	XAD		
5	Silica Gel		5.83

From Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

8/15/84 LK CHK adjust

PLANT: GRENADA | DATE: 8-15-84 | ΔH@: 1.83 (7-20-84) | HOT BOX NO.: 6

LOCATION: BOILER STACK | TEST NO.: GS-BS-28 | METER CORRECTION: 1.002 (8) | COLD BOX NO.: 6

ACTIVITY NO: | NOZZLE: .243 | PITOT CORRECTION: .87 | PROBE NO.: 5-5

CONTROL BOX OPERATOR QZL | STATIC PRESSURE Ps: -.3 | CONTROL BOX NO.: 2 | FILTER NO.: 641

PROBE HANDLER KG | PORT DIRECTION: WEST / SOUTH | NOMOGRAPH SET POINT: | STACK DIA.: 36

CLEAN UP | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F (2)	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1726	423,757	.5	1.16	1.16	100	102	6.5	298		34	250	
30.8			.5	1.16	1.16	102	112	6.5	303		37	245	
25.3			.55	1.28	1.28	102	120	7.0	313		34	240	
10.7			.50	1.16	1.16	102	120	6.0	305		35	255	
5.3			.50	1.16	1.16	125	102	6.5	303		42	260	
1.6	1756	443,042	.50	1.16	1.16	126	102	6.5	305		36	260	
SOUTH													
34.4	1801	443,042	.50	1.16	1.16	120	102	6.5	303		36	260	
30.8			.6	1.39	1.39	125	104	6.5	306		34	265	
25.3			.6	1.39	1.39	125	104	7.7	300		36	265	
10.7			.6	1.39	1.39	127	104	8.0	309		35	260	
5.3			.45	1.05	1.05	130	104	7.0	310		40	260	
1.6	1831	462,132	.40	.93	.93	128	104	7.0	310		40	250	

LEAK CHECK

	in Hg	Rate
Before	10"	Good
	2"	

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100mL 1%NaOH	140	40
2	100mL 1%NaOH	110	10
3	Dry	2	2
4	XAD-2		
5	S.L Gel		200

Ekon Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Guernsey
DATE: 8/15/84
ΔH@: 1.83 (7-20-84)
HOT BOX NO.: 1
LOCATION: Boiler Stack
TEST NO.: GK-BS-30
METER CORRECTION: 1.002
COLD BOX NO.: 1
ACTIVITY NO:
NOZZLE: .243
PITOT CORRECTION: .84
PROBE NO.: 5-1
CONTROL BOX OPERATOR: OH
STATIC PRESSURE Ps: .3
CONTROL BOX NO.: 2
FILTER NO.: 657
PROBE HANDLER
PORT DIRECTION: ~1.5
NOMOGRAPH SET POINT:
STACK DIA.: 36
CLEAN UP
BAROMETRIC PRESSURE 29.35
LENGTHS OF UMBILICAL ___ x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF 463.372	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1928	~~463.36~~	0.60	1.39	1.39	102	100	7.5	322		35	230	
30.8			0.50	1.16	1.16	119	100	6.5	313		38	235	
25.3			0.45	0.93	0.93	12[illegible]	100	6.0	306		38	24[illegible]	
10.7			0.50	1.16	1.16	121	100	6.5	311		37	250	
5.3			0.50	1.16	1.16	122	100	7.0	318		40	265	
1.6	1958	482.378	0.50	1.16	1.16	122	100	7.0	318		36	260	
South													
34.4	2001	482.378	0.50	1.16	1.16	116	100	7.0	307		39	250	
30.8			0.60	1.39	1.39	122	100	8.0	314		36	235	
25.3			0.60	1.39	1.39	122	100	8.0	312		37	235	
10.7			0.55	1.28	1.28	122	100	8.0	310		37	235	
5.3			0.50	1.16	1.16	122	100	7.0	310		37	235	
1.6	2031	501.674	0.45	0.93	0.93	122	100	6.0	310		37	235	

LEAK CHECK

	in Hg	Rate
Before	10"	LT 0.02
After	"	<.0

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 mL 1% NaOH	147	47
2	100 mL 1% NaOH	112	12
3	DRY	2	2
4,5	XAD 2 x 2		
6	SILGEL		4.86

EMH Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

PLANT: Grenuc | DATE: 8-15-84 | ΔH@: 1.82 8-3-84 | HOT BOX NO.: 7
LOCATION: Boiler Stack | TEST NO.: GR-PS-3D | METER CORRECTION: 1.0085 | COLD BOX NO.: 7
ACTIVITY NO: Outlet | NOZZLE: 0.240 | PITOT CORRECTION: 0.84 | PROBE NO.: 5
CONTROL BOX OPERATOR | STATIC PRESSURE Ps: 0.30 | CONTROL BOX NO.: 3 | FILTER NO.: 602
PROBE HANDLER | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.: 36"
CLEAN UP | BAROMETRIC PRESSURE 24.35 | LENGTHS OF UMBILICAL ✓ x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1430	245.601	0.40	0.90	0.90	110	105	5.0	316		35	240	Sampling
5.2			0.40	0.90	0.90	124	105	5.0	322		36	240	
10.7			0.45	1.01	1.01	127	105	5.0	316		35	240	
25.3			0.60	1.34	1.34	130	105	5.0	320		37	245	
30.8			0.60	1.34	1.34	132	105	5.0	326		37	250	
34.4	2000	264.146	0.60	1.34	1.34	133	105	5.0	325		37	250	
West													
1.6	2003	264.146	0.40	0.90	0.90	115	104	4.0	310		37	260	
5.3			0.50	1.12	1.1	129	105	4.5	312		37	260	
10.7			0.55	1.23	1.2	137	105	5.5	325		40	260	
25.3			0.5	1.12	1.1	133	105	5.0	325		41	260	
30.8			0.5	1.12	1.1	133	105	5.0	324		41	260	
34.4	2033	282.014	0.5	1.12	1.1	134	105	5.0	322		39	260	

LEAK CHECK

	in Hg	Rate
Before	11"	0.02
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml	112 (48)	
2	100 ml	2	
3	15 ml		
4,5	(XAD-2) x 2	—	—
6	Silica Gel	1242	

...partment
...uppers Company, Inc.

STACK SAMPLING DATA SHEET

8/15/84

PLANT: GRENADA | DATE: 8-15-84 | ΔH@: 1.82 8-3-84 | HOT BOX NO.: 1

LOCATION: BOILER STACK | TEST NO.: GR-BS-29 | METER CORRECTION: 1.0085 | COLD BOX NO.: 4

ACTIVITY NO: OUTLET | NOZZLE: .240 | PITOT CORRECTION: .84 | PROBE NO.: S-4

CONTROL BOX OPERATOR RJ | STATIC PRESSURE Ps: 0.3 | CONTROL BOX NO.: 3 | FILTER NO.: 577

PROBE HANDLER MG | PORT DIRECTION: S-N/E-W | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP GRR | BAROMETRIC PRESSURE 29.35 | LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1728	208.131	0.45	1.03	1.03	105	106	6.0	300		34	265	5 Min/Pt
5.3			0.50	1.15	1.15	125	106	6.0	305		40	245	
10.7			0.50	1.15	1.15	128	107	6.0	310		35	240	
25.3			0.60	1.38	1.38	130	107	7.0	312		35	~~365~~ 240 (S)	
30.8	(S)		0.6	1.38	1.38	132	107	7.5	310		35	255	
34.4	~~1835~~ ~~1835~~	227.018	0.6	1.38	1.38	133	106	8.0	308		43	260	
West													
1.6	1803	227.018	0.4	0.92	0.92	122	106	6.0	304		41	270	
5.3			0.4	0.92	0.92	130	107	5.5	306		40	245	
10.7			0.55	1.26	1.26	134	107	7.5	308		39	250	
25.3			0.50	1.15	1.15	135	107	7.5	310		38	250	
30.8			0.50	1.15	1.15	136	107	7.0	307		38	250	
34.4	1833	245.092	0.60	1.38	1.38	137	108	8.0	309		38	250	

LEAK CHECK

	in Hg	Rate
Before	10.0	1.02 CFM
After	-11	

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100ML H_2O	148	48
2	100ML H_2O	111	11
3	DRY	3	3
4	XAD-2		
5	Sil Gel		11.07

Koppers Company, Inc.
Chem Department

STACK SAMPLING DATA SHEET

Comp form 9/15/84

PLANT: GRENADA
LOCATION: BOILER STACK
ACTIVITY NO: OUTLET
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 8-15-84
TEST NO.: GR-BS-27
NOZZLE: .240
STATIC PRESSURE Ps: -.30
PORT DIRECTION:
BAROMETRIC PRESSURE

ΔH@: 1.82 8-3-84
METER CORRECTION: 1.0085
PITOT CORRECTION: .84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 2
COLD BOX NO.: 2
PROBE NO.: S-3
FILTER NO.: 623
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1533	170.143	.60	1.18	1.18	120	113	7.0	350		ICED DOWN	≈250°	5 min/pt
[illegible]			.65	1.28	1.28	129	111	7.5	357		34	250	
[illegible]			.60	1.20	1.20	132	111	[illegible]	350		34	255	
25.3			.70	1.41	1.41	134	111	8.0	340		34	265	
30.8			.70	1.41	1.41	135	111	8.0	341		38	265	
34.4	1603	189.307	.65	1.30	1.30	136	111	8.0	332		34	265	
WEST													
1.6	1609	189.307	.60	1.20	1.20	130	110	7.5	320		34	250	
5.3			60	1.20	1.20	134	110	7.5	330		35	250	
0.7			.65	1.30	1.30	135	110	8.0	333		36	250	
25.3			.60	1.20	1.20	137	110	7.5	335		36	250	
30.8			.60	1.20	1.20	138	110	7.5	333		38	250	
34.4	1639	207.67[illegible]	.60	1.20	1.20	139	110	7.5	330		38	250	

LEAK CHECK

	in Hg	Rate
Before	10.0	1.02 LPM
After	~0	.07

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ML H_2O	158	58
2	100 ML H_2O	112	12
3	DRY	4	4
4	XAD-2		
5	S.L. Gel		5.98

EHSH Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

5/10/84

PLANT: Grenada | DATE: 8-11-84 | ΔH@: 1.43 (7-20-84) | HOT BOX NO.: 4

LOCATION: Boiler Stack | TEST NO.: GR-BS-37 | METER CORRECTION: 1.003 | COLD BOX NO.: 4

ACTIVITY NO: OUT-T | NOZZLE: 0.240 #8 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-4

CONTROL BOX OPERATOR | STATIC PRESSURE Ps: | CONTROL BOX NO.: 2 | FILTER NO.: 621

PROBE HANDLER | PORT DIRECTION: South/West | NOMOGRAPH SET POINT: | STACK DIA.:

CLEAN UP | BAROMETRIC PRESSURE 29.5 | LENGTHS OF UMBILICAL ✓ x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., Tm °F In	Meter Temp., Tm °F Out	Vacuum Vm in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1222	365.643	.4	.9	.8	125	116	~~2.0~~	369		35	235	
5.3			.6	1.20	1.20	135	115	4.0	368		37	235	
10.7			.6	1.20	1.20	138	114	4.0	360		37	235	
25.3			.7	1.41	1.41	138	114	5.0	369		36	235	
30.7			.8	1.61	1.4	140	112	6.0	374		41	235	
34.4	1252	384,327	.9	1.81	1.81	140	112	7.0	379		37	235	
West							(5)						
1.6	1258	384.327	.6	1.20	1.20	135/134	109	7.0	373		37	235	
5.3			.6	1.20	1.20	135	108	5.0	362		35	235	
10.7			.6	1.20	1.20	136	108	5.0	366		37	235	
25.3			.5	1.00	1.00	137	109	5.0	361		41	240	
30.7			.6	1.20	1.20	137	109	5.0	354		39	240	
34.4	1322	402,425	.7	1.40	1.40	137	109	7.0	353		40	245	

LEAK CHECK

	in Hg	Rate
Before	11"	LT 0.02
After	11	LT

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	~~250~~ 100	250	
2	100	50	
3	DRY	2	
4	DRY		
5	Silicagel	9.59	

ERON Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

8/16/84

PLANT: Grenada
DATE: 8-16-84
ΔH@: 1.82 (8-3-84)
HOT BOX NO.: 7
LOCATION: Boiler Stack
TEST NO.: GR-BS-35
METER CORRECTION: 1.0085
COLD BOX NO.: 7
ACTIVITY NO: Outlet
NOZZLE: .240
PITOT CORRECTION: 0.84
PROBE NO.: 5-1
CONTROL BOX OPERATOR: DRL
STATIC PRESSURE Ps: .48
CONTROL BOX NO.: 3
FILTER NO.: 557
PROBE HANDLER: HLG
PORT DIRECTION: Southwest
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.5
LENGTHS OF UMBILICAL ✓ x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	1018	322.000	.6	1.22	1.22	110	116	4.5	407		34	250	
5.3			.8	1.62	1.62	110	130	5.5	412		36	250	
10.7	1033	331.951	.8	1.62	1.62	110	135	5.5	411		40	250	
25.3	1050	332.073	.8	1.62	1.62	110	122	9.0	404		42	255	
30.8			.95	1.93	1.93	110	133	10.0	407		42	260	
34.4	1105	343.257	1.00	2.03	2.03	110	136	11.5	402		38	265	
West												~~25~~	
1.6	1108	343.257	.6	1.22	1.22	110	120	8.0	395		38	250	
5.3			.7	1.42	1.42	111	135	8.5	382		39	250	
10.7			.7	1.42	1.42	112	138	8.5	384		38	250	
25.3			.6	1.22	1.22	112	140	8.0	404		38	255	
30.8			~~.6~~ .8	~~1.22~~ 1.62	1.62	113	142	10.0	408		38	250	
34.4	1138	363.044	.95	1.93	1.93	112	138	12.5	409		39	250	

LEAK CHECK

	in Hg	Rate
Before	10"	LT 0.02
After	12"	

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

$\frac{1}{10} d_{10} = 17$

Impinger No.	Initial	Final	Difference
1	100 H_2O	218	118
2	100 ml H_2O	117	11
3	Dry	4	4
4	XAD		
5	XAD		

Iron Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

Comm 8/16/84

PLANT: Grenada DATE: 8-16-84 ΔH@: 182 (8-3-84) HOT BOX NO.: 2
LOCATION: Boiler Stack TEST NO.: GR-DS-33 METER CORRECTION: 1.0085 COLD BOX NO.: 2
ACTIVITY NO: Outlet NOZZLE: 0.240 #8 PITOT CORRECTION: 0.84 PROBE NO.: 5-4
CONTROL BOX OPERATOR DLA STATIC PRESSURE Ps: -45 CONTROL BOX NO.: 3 FILTER NO.: 605
PROBE HANDLER MLG POINT DIRECTION: South/West NOMOGRAPH SET POINT: STACK DIA.: 31"
CLEAN UP BAROMETRIC PRESSURE 29.5 LENGTHS OF UMBILICAL ✓ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.6	837	282.801	.6	~~3.40~~	1.2	89	90	5.5	390		34	255	
5.3			.65	1.3	1.3	89	109	6.0	388		37	260	
10.7			.70	1.4	1.4	91	116	6.5	383		34	260	
25.3			.70	1.4	1.4	93	120	7.0	383		35	255	
30.8			.80	1.6	1.6	95	125	7.5	383		40	255	
34.4	0907:30	302.643	.85	1.7	1.7	97	128	8.0	392		~~48~~	255	
West													
1.6	0914	302.643	.4	.82	.82	100	117	5.0	397		37	255	
5.3			.70	1.43	1.43	100	126	7.5	~~402~~		38	255	
10.7			.70	1.43	1.43	101	130	8.0	~~397~~		39	255	
25.3			.60	1.23	1.23	101	130	7.5	404		40	255	
30.8			.70	1.43	1.43	101	130	8.0	406		~~45~~	250	
34.4	0944	324.731	.90	1.84	1.84	102	133	10.0	407		35	250	

LEAK CHECK

	in Hg	Rate
Before	11"	4.7
		0.02
After	[illegible]	✓

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml H_2O	192	92
2	100 ml H_2O	123	23
3	Dry	3	3
4	XAD		
5	200 g Si. gel		13.40

Koppers Company, Inc.

Penta

STACK SAMPLING DATA SHEET

8/16/84 ~ [illegible]

PLANT: Grenada | DATE: 8-16-84 | ΔH@: 1.83 (7-20-84) | HOT BOX NO.: 6

LOCATION: Boiler stack | TEST NO.: GR-BS-32 | METER CORRECTION: 1.002 | COLD BOX NO.: 6

ACTIVITY NO: Outlet | NOZZLE: 0.243 ~ 25 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-5

CONTROL BOX OPERATOR RJ | STATIC PRESSURE Ps: 0.45 | CONTROL BOX NO.: 2 | FILTER NO.: 609

PROBE HANDLER MC | PORT DIRECTION: West/South | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP | BAROMETRIC PRESSURE 29.5 | LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Test Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	0835	507.007	0.9	1.88	1.88	90	87	10.0	394		34	235	5 min/pt
25.8			~0.75	1.57	1.57	106	97	7.5	394		34	235	
20.3			0.55	1.15	1.15	111	99	6.0	382		35	250	
10.7			0.60	1.25	1.25	114	90	6.0	385		38	255	
5.3			0.60	1.25	1.25	116	92	6.0	384		38	265	
1.6	0905	526.980	0.50	1.04	1.04	118	93	5.5	380				
South													
34.4	912	526.980	0.7	1.49	~~1.49~~ 1.47	104	96	7.5	393		36	260	
30.8			0.7	1.49	1.49	118	96	7.5	395		35	260	
25.3			0.75	1.60	1.60	121	96	8.5	402		35	255	
10.7			0.75	1.60	1.60	122	96	8.5	402		35	260	
5.3			0.65	1.38	1.38	122	96	8.0	401		38	255	
1.6	942	547.675	0.65	1.38	1.38	122	97	8.0	404		38	255	

LEAK CHECK

	in Hg	Rate
Before	12"	LT 0.02
[illegible]	[illegible]	[illegible]

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH	194	94
2	100 ml NaOH	115	15
3	Dry	"	"
4	XAD		
5	200 g Silica Gel		1469

ERM Department
Koppers Company, Inc.

Kenta

STACK SAMPLING DATA SHEET

5/16/84

PLANT: Grenada | DATE: 5-16-84 | ΔH@: 1.83 (7-20-84) | HOT BOX NO.: 6 5
LOCATION: Boiler Stack | TEST NO.: GR-BS-34 | METER CORRECTION: 1.002 | COLD BOX NO.: 6 5
ACTIVITY NO: O.T.T | NOZZLE: 0.343 "22 | PITOT CORRECTION: 0.84 | PROBE NO.: ~~5-5~~ 5-3
CONTROL BOX OPERATOR: RJ | STATIC PRESSURE Ps: 0.45 | CONTROL BOX NO.: 2 | FILTER NO.: 601
PROBE HANDLER: H6 | PORT DIRECTION: East/South | NOMOGRAPH SET POINT: 2.13 | STACK DIA.: 36"
CLEAN UP | BAROMETRIC PRESSURE: 29.5 | LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Test Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1016	548.050	0.95	2.03	2.03	110	105	8.5	409		35	230	
~~30.8~~			~~0.80~~	~~1.71~~	~~1.71~~	~~120~~	~~103~~	~~7.5~~	~~404~~		35	~~260~~	
~~25.3~~			~~0.65~~	~~1.39~~	~~1.39~~	~~124~~	~~106~~	~~6.5~~	~~390~~		35	~~250~~	
10.7			0.60	1.28	1.28	126	104	6.5	401		39	255	
~~5.3~~	1041	575.670	0.60	1.28	1.28	126	104	7.0	391		40	255	Stopped run because other unit stopped
1.6	1052	565.670	0.50	1.07	1.07	125	107	6.0	403		43	255	
South	1057	568.725											
34.4	1106	568.725	0.70	1.71	1.71	110	110	7.0	395		41	260	
30.8			0.70	1.49	1.49	127	110	8.0	385		38	250	
25.3			0.70	1.49	1.49	130	110	8.0	380		40	250	
10.7			0.80	1.71	1.71	132	110	9.0	395		42	250	
5.3			0.80	1.71	1.71	132	110	9.5	402		37	250	
1.6	1136	590.024	0.60	1.28	1.28	132	110	8.0	416		41	250	

LEAK CHECK

in Hg	Rate
10"	LT 0.02
"	

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100ml NaOH	222	122
2	100ml NaOH	115 3	15 5
3	Dry		
4	XAD		
5	Silica Gel		1837

ROH Department
Koppers Company, Inc.

STACK SAMPLING DATA SHEET

8/16/84 ⇒ 1 for leaks

PLANT: Grenada | DATE: 8-16-84 | ΔHG: 1.83 (7-20-84) | HOT BOX NO.: 1
LOCATION: Boiler Stack | TEST NO.: GR-BS-36 | METER CORRECTION: 1.002 | COLD BOX NO.: 1
ACTIVITY NO: Outlet | NOZZLE: 0.243 #22 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-5
CONTROL BOX OPERATOR | STATIC PRESSURE Ps: 0.35 | CONTROL BOX NO.: 2 | FILTER NO.: 651
PROBE HANDLER | PORT DIRECTION: West/South | NOMOGRAPH SET POINT: | STACK DIA.: 31"
CLEAN UP | BAROMETRIC PRESSURE 29.5 | LENGTHS OF UMBILICAL ____ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_i °C/°F	Hot Box Temp. T_H °F	Comments
34.4	1220	592.351	0.6	1.27	1.27	115	115	8.0	380		35	250	5 min/pt
30.7			0.6	1.32	1.32	116	110	7.5	377		37	245	
25.3			0.55	1.21	1.21	128	106	7.5	369		36	255	
10.7			0.65	1.43	1.43	128	108	8.0	371		36	245	
5.3			0.65	1.43	1.43	129	107	8.0	372		36	250	
1.6	1250	612.355	0.55	1.21	1.21	128	106	7.5	378		36	250	
South													
34.4	1256	612.355	0.75	1.65	1.65	110	104	9.0	380		38	255	
30.7			0.75	1.65	1.65	124	104	9.5	376		35	250	
25.3			0.60	1.32	1.32	125	103	8.5	365		41	265	
10.7			0.50	1.10	1.10	125	103	8.0	367		39	255	
5.3			0.50	1.10	1.10	126	103	8.0	360		38	265	
1.6	1326	632.588	0.50	1.10	1.10	126	103	8.0	355		38	250	

LEAK CHECK

	in Hg	Rate
Before	12"	4'00"
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Initial	Final	Difference
1	100 ml NaOH	176	
2	100 ml NaOH	162	
3	Dry		
4	XAD		
5	XAD		

TABLE 1

KOPPERS COMPANY, INC.
GRENADA, MISSISSIPPI

STACK TEST SCHEDULE

Date	Identification	Number of Stack Tests	
		Penta POHC	Creosote POHC
8/14	40% Boiler Capacity		
	Background	3	3
	400 lb/hr Test Burn	3	3
8/15	30% Boiler Capacity		
	Background	3	3
	400 lb/hr Test Burn	3	3
8/16	20% Boiler Capacity		
	Background	3	3
	400 lb/hr Test Burn	3	3
8/17	30% Boiler Capacity		
	800 lb/hr Test Burn	3	3

July 84

SLUDGE FEEDER LOG

7-2 7:00 AM 541.4

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADD. TO FEEDER
7-2/3	544.2	2.8	3.5		
7-3/4	546.3	2.1	5.0		600 crew
7-4/5	547.3	1.0	3.0		1200 crew
7-5/6	549.8	2.5	8.7		
7-9/10	551.3	1.5	4.1		1200 plants
7-10/11	553.7	2.4	3.7		
7-11/12	554.2	.5	.8		600 plants
7-12/13	569.4	15.2	16.0		
7-13/14	580.8	11.4	16.5		1200 plants
7-16/17	582.7	1.9	5.8		600 plants
7-17/18	585.3	2.6	8.5		
7-18/19	592.9	7.6	19.0		1200 plants
7-19/20	601.7	9.5	20.8		1800 plants
7-20/21	604.8	3.1	5.9		
7-23/24	609.9	5.1	10.5		
7-24/25	612.0	2.1	4.4		1200 plants
7-25/26	614.9	2.9	7.8		1200 plants
7-26/27	617.3	2.4	7.0		
7-27/28	622.0	0	0	supplementing wet fuel w/ dry shavings - no sludge	
7-30/31	622.4	.4	.9		1800 plants
7-31/8-1	629.6	7.2	11.4		
					12600#
		84.2	163.3		

77#/hr (very liquid sludge)

MISSISSIPPI AIR & WATER POLLUTION CONTROL COMMISSION
[illegible]IBLE EMISSIONS EVALUATION RECO[illegible]
DATE: 6/26/84

PLANT NAME: Koppers Co.

ADDRESS:

CITY: Tie Plant

EMISSION POINT: woodwaste boiler

RECEIVED BY: R C Bartlow

V.E. OBSERVER: Stanley Watkins

V.E. CERTIFICATION NO.: 132

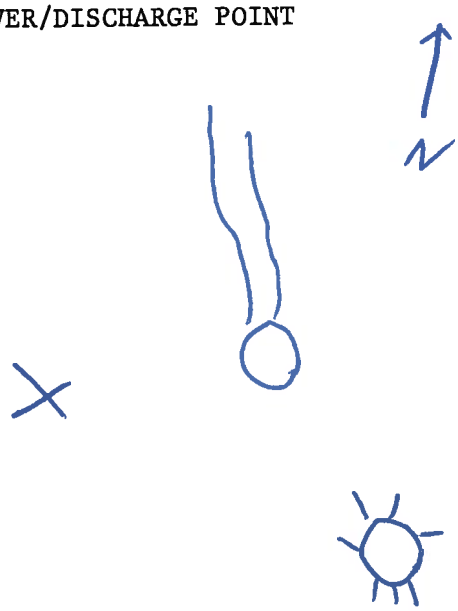
CERTIFICATION EXPIRATION: 10/19/84

	INITIAL	FINAL
DISTANCE TO DISCHARGE	150'	150'
DIRECTION TO DISCHARGE	E	E
HEIGHT OF OBSERVATION POINT	0'	0'
HEIGHT OF DISCHARGE	30'	30'
PLUME COLOR	gray	gray
PLUME BACKGROUND	sky	sky
WATER VAPOR IN PLUME?	no	no
WIND DIRECTION	N	N
WIND SPEED	3-5	3-5
AMBIENT TEMPERATURE	90°	90°
DISCHARGE TEMPERATURE	400°	400°
SKY CONDITIONS	clear	clear

SET NO.	TIME		OPACITY	
	START	END	SUM	AVERAGE
1	10:20	10:26	35	1.5%
2	10:27	10:33	40	1.7%
3	10:34	10:40	20	.8%

MIN.*	SECONDS* 0	15	30	45
0	5	5	5	5
1	5	0	0	0
2	0	0	0	0
3	0	5	5	0
4	0	0	0	0
5	0	0	0	0
0	0	0	0	0
1	0	0	0	0
2	0	5	0	0
3	5	0	0	5
4	5	5	0	5
5	0	0	5	5
0	5	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	5	5	5
4	0	0	0	0
5	0	0	0	0

DIAGRAM OF OBSERVER/DISCHARGE POINT



REMARKS: average opacity was 1.3%

DATA CODED

*IF READING TIME INTERVAL NOT AS SHOWN, SPECIFY IN REMARKS

SLUDGE FEEDER LOG

327.6

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
4-4-84	3350	7.4 ~~12.0~~	10	1746	4000
4-5-84	347.1	12.1 ~~3.1~~	23	2857	2000# creo
4-6-84	350.2	3.1 ~~6.2~~	7	732	
4-9-84	356.4	6.2 ~~2.9~~	15	1463	4000# creoso
4-10-84	359.3	2.9 ~~3.1~~	6.5	684	1200
4-11-84	362.4	3.1 ~~3.0~~	11	732	
4-12-84	365.4	3.0 ~~2.8~~	9	708	
4-13-84	368.2	2.8 ~~1.4~~	8.5	661	
4-14-84	369.6	1.4 ~~0.5~~	2	328	
4-18-84	370.1	.5 ~~6.0~~	2	117	4000#
4-19-84	371.1	1.0 ~~0.5~~	5.5	326	
4-20-84	371.6	.5 ~~2.8~~	3	117	
4-25-84	379.4	7.8 ~~9.8~~	16	1826	1200#
4-26-84	389.2	9.8 ~~10.3~~	16	2294	
4-27-84	399.5	10.3 ~~2.0~~	20	2111	1200# creoso
4-28-84	401.5	2.0 ~~8.2~~	4	468	600# "
4-30-84	409.7	8.2	12.5	1919	1200#
			171		
		82.1			19400#

FEEDER HRS

BOILER HRS.

113#/hr

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Koppers Inc.

Address:

City: Grenada

Emission Point: Incinerator Trailer

Date: Jan. 12 1984

Is emission point operation normal ? yes

V. E. Observer: Stanley Watkins

Certification Expiration: April 1984

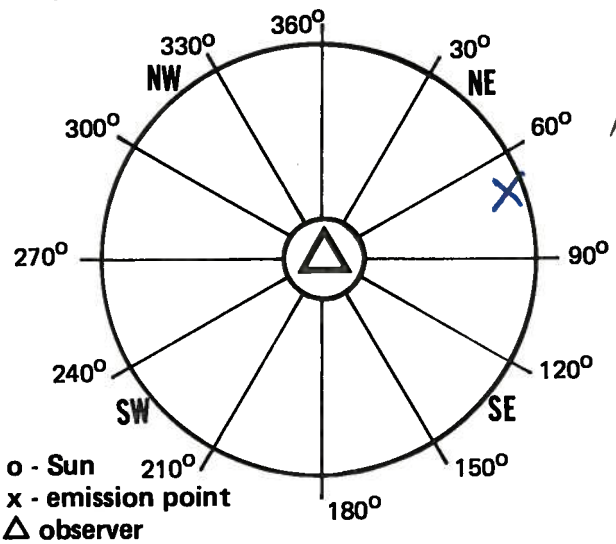
	Initial	Final
Distance to discharge	150'	150'
Direction to discharge	E	E
Height of observation point	0	0
Height of discharge	30'	30'
Plume color	gray	gray
Plume background	sky	sky
Water vapor in plume ?	NO	NO
Wind direction (from)	S	S
Wind speed	3-5	3-5
Ambient temperature	35°	35°
Discharge temperature	350°	350°
Sky conditions	cloudy	cloudy

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:10	10:16	105	4.3%
2	10:17	10:23	120	5%
3	10:24	10:30	95	4%

Overall Average: 4.4%

Min.	Seconds 0	15	30	45
0	0	0	5	5
1	5	5	5	5
2	5	0	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	5	0	0	0
2	0	5	5	5
3	5	0	5	5
4	5	5	5	5
5	5	5	5	5

Diagram Of Observation/Discharge Point



Remarks: sun was obscured by clouds

DATA CODED

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Kappers Inc.

Address:

City: Grenada

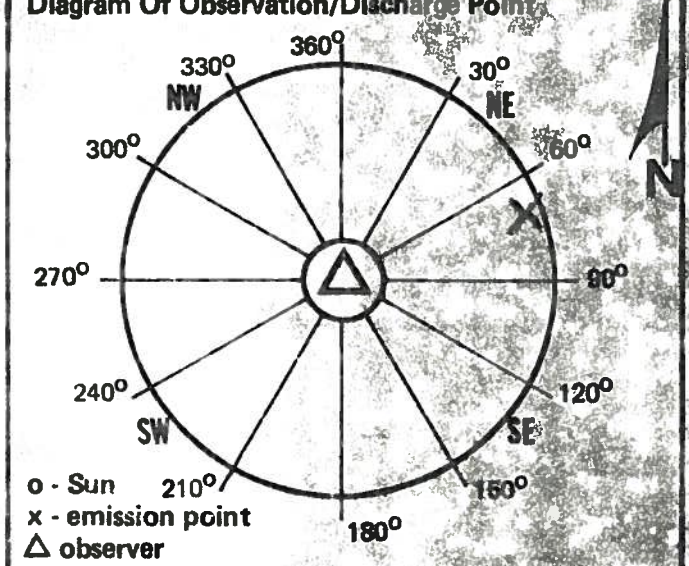
Emission Point: woodwaste boiler

Date: Jan. 12 1984

Is emission point operation normal ? yes

	Initial	Final
Distance to discharge	150'	150'
Direction to discharge	E	E
Height of observation point	0	0
Height of discharge	30'	30'
Plume color	gray	gray
Plume background	sky	sky
Water vapor in plume ?	no	no
Wind direction (from)	S	S
Wind speed	3-5	3-5
Ambient temperature	35°	35°
Discharge temperature	350°	350°
Sky conditions	cloudy	cloudy

Diagram Of Observation/Discharge Point



V. E. Observer: Stanley Watts

Certification Expiration: April 198

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	10:10	10:16	105	[illegible]
2	10:17	10:23	120	[illegible]
3	10:24	10:30	95	4[illegible]

Overall Average: 4.48

Min.	Seconds 0	15	30	45
0	0	0	5	5
1	5	5	5	5
2	5	0	5	[illegible]
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	[illegible]
1	5	5	5	
2	5	5	5	[illegible]
3	5	5	5	[illegible]
4	5	5	5	
5	5	5	5	[illegible]
0	5	5	5	
1	[illegible]	0	0	0
2	0	5	5	5
3	5	0	5	5
4	5	5	5	[illegible]
5	5	5	5	

Remarks: sun was obscured by clouds

Received By: [illegible]

R.O. NRO

RECEIVED
DEC 7 1983
NRO

MISSISSIPPI BUREAU OF POLLUTION CONTROL

AIR POLLUTION INSPECTION REQUEST FORM

Inspection requested by: Dan N McLeod Date: 12-5-83

Inspection Schedule: ____ Urgent (1 day) ____ Immediate (5 days)

X Normal (10 days) ____ Routine (30 days)

GENERAL INFORMATION: Source Number: 0960-00012

Facility Name: Koppers Inc. Type Industry: Wood Preserving

Address (Location): P.O. Box 160 Grenada, Ms 38961

Site Location: Tie Plant, Ms

Telephone: 226-4584 Person to Contact: Mr. R.C. Bartlow
Rock Clayton

Description of needed inspection:

Please, go by and do a VEE ~~white~~ on their wood waste boiler while their burning wood preservative; preferrably creosote sludge. You might want to call before you go to assure their burning wood preservative sludge, that day. Compare your Results with their opacity monitor and let me know how it compared.

Green wood
Greenville

(7:00)

#-0-3

R.O. NRO

MISSISSIPPI BUREAU OF POLLUTION CONTROL

AIR POLLUTION INSPECTION REQUEST FORM

RECEIVED
JAN 20 1984

Inspection requested by: DAN N McLeod NRO Date: 01-17-84

Inspection Schedule: _____ Urgent (1 day) _____ Immediate (5 days)

X Normal (10 days) _____ Routine (30 days)

GENERAL INFORMATION: Source Number: 0960-00012

Facility Name: Koppers Co. Inc ~~0960-00012~~ Type Industry: Wood Preserving

Address (Location): Tie Plant, Ms

Telephone: 226-4584 Person to Contact: Mr. R.C. Bartlow

Description of needed inspection:

Inspect above referenced facility AND perform VEE on boiler while they are burning creosote sludge plus wood waste. Also record the amount of sludge being burnt per hour. Call Mr. Bartlow before going to see if they are burning sludge.

SLUDGE FEEDER LOG

13513 FEEDER HRS. X 700#

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
11-1-83	~~151.6~~ 142.4	4.1	14.25	4970	creosote 9200
11-2-83	~~160.7~~ 151.7	9.1	21.75	6370	8000
11-3-83	160.7	9.0	22	6300	8400
11-4-83	169.5	8.8	19.75	6160	3600
11-7-83	172.5	3.0	6	2100	
11-8-83	174.9	2.4	5	1540	
11-9-83	177.4	2.5	5.5	1750	creosote 600
11-10-83	185.6	8.2	22	5740	
11-11-83	195.4	9.8	22.25	6860	4000
11-14-83	198.3	2.0	5.5	1400	
11-15-83	201.3	3.0	10	2100	creosote 1200
11-16-83	206.9	5.6	14	3920	1200
11-17-83	212.7	5.8	16	4060	1200
11-18-83	220.7	8.0	19.25	5600	1200
11-21-83	223.9	3.2	13 ~~14.25~~	2240	
11-22-83	228.7	4.8	16 ~~13~~	3360	1200
11-23-83	232.1	3.4	11.5 ~~16~~	2380	
~~11-28-83~~	~~234.3~~	2.2	~~13.75~~ 9 ~~11.5~~	1540	
11-29-83	239.5	5.2	13.75 ~~13.75~~	3640	1200 creos
11-30-83	243.9	4.4	13 ~~13~~	3080	1200
~~12-1-83~~	~~247.4~~	3.5	~~11.5~~		

Feeder Hrs 107.5 ,39

Boiler Hrs 275.5

75110

47,600 ~~43,520~~

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED	SLUDGE BURNED	SLUDGE ADDED TO FEEDER
12-1-83	247.4	3.5 11.5	2450	1200
12-2-83	251.2	3.8 5.5	2660	
12-6-83	255.0	3.8 13	2660	
12-7-83	260.2	5.2 14	3640	1200
12-8-83	265.1	4.9 16.5	3430	2400
12-9-83	271.2	6.1 14	4270	2400
12-14-83	275.6	4.4 13	3080	
12-15-83	284.0	8.4 21	5880	
12-16-83	286.5	2.5 9	1750	3000
12-17-83	290.6	4.1 13	2870	
12-21-83	298.0	7.4 15	5180	
		54.1 145.5		9200
		.37		

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED x700	SLUDGE ADDED TO FEEDER
10-3-83	103.7	2.3	16.75	1610	Creosote 2000
10-4-83	105.0	1.3	4.5	910	2000
10-5-83	106.3	1.3	5	910	2000
10-6-83	112.1	6.9	22	4830	Creosote 2000
10-7-83 + 10-8-83	113.7	1.6	7	1120	
10-11-83	115.3	2.2	7.5	480 1540	
10-12-83	120.0	2.7	9	1890	
10-13-83	120.3	2.3	8	1610	3000
10-14-83	123.2	0.9	2	630	
10-17-83	123.9	0.7	1.5	490	
10-18-83	125.2	1.3	4	910	
10-19-83	126.7	1.5	7	1050	7400
10-20-83	127.5	0.8	3.5	560	
10-21-83	128.0	0.5	2	357	
10-24-83	128.0	0	0	0	
10-25-83	129.0	1.0	3	700	4800
10-26-83	131.1	2.1	6.5	1470	
10-27-83	132.2	1.1	4	770	
10-28-83	134.2	2.0	6.5	1400	
10-31-83	135.3	1.1	4	770	
		33.1	123.75		
		BOILER HRS		24500	23200

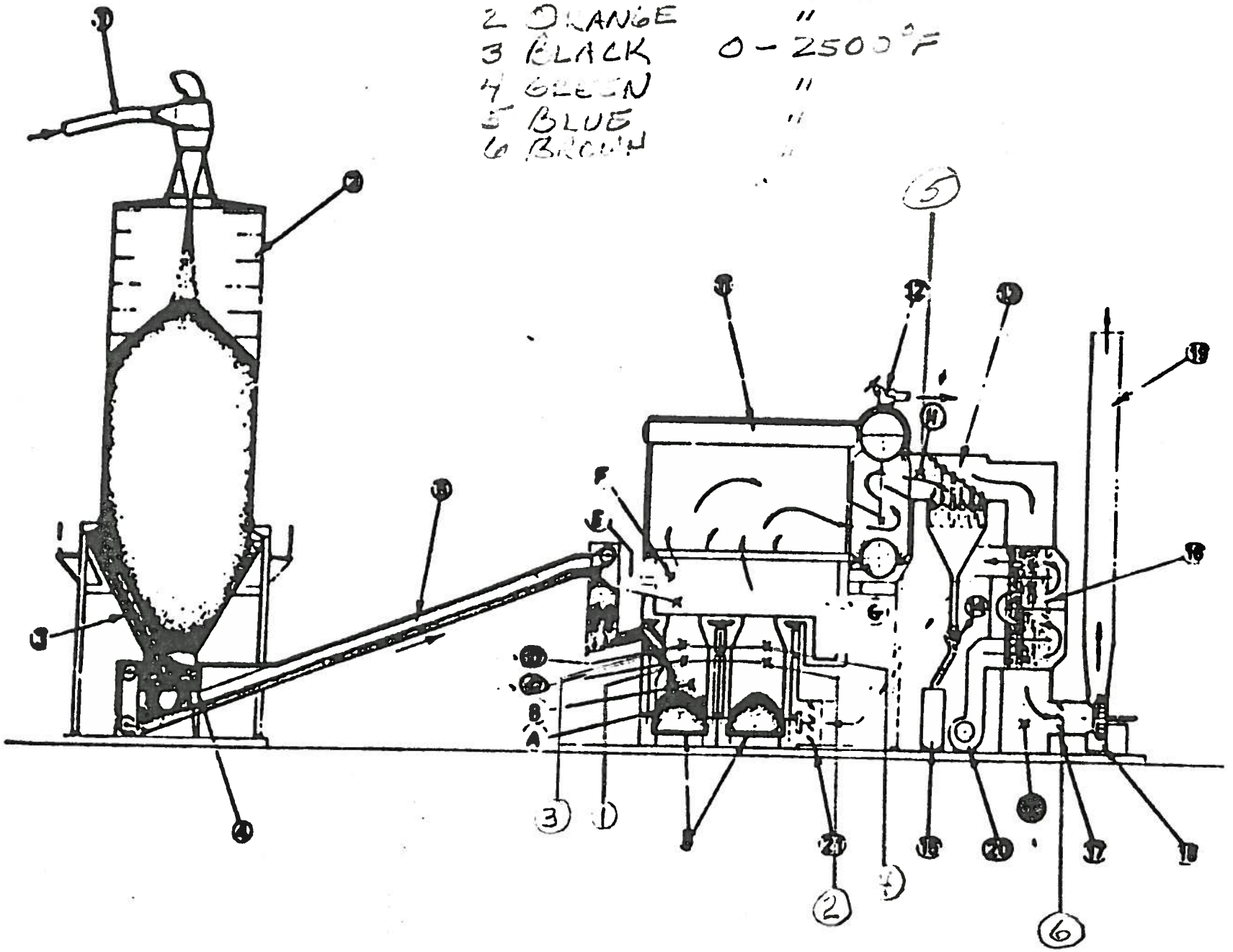
83

SLUDGE FEEDER LOG

DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED	SLUDGE ADDED TO FEEDER
		SLUDGE FEEDER HOURS	BOILER HOURS	x 800	
8-25	54.3				
9-7	55.3	1.0	5.0	800	
9-14	61.0	5.7	13.0		
9-15	64.2	3.2	15		5400# coke
9-16	66.4	2.2	10		
9-19	66.5	0.1	3		
9-20	67.0	0.5	1.5		4800# coke
9-21	75.2	8.2	19.5		3100 "
9-22	83.1	7.9	22		
9-23	90.8	7.7	23		3000 "
9-26	94.7	3.9	13		3000 "
9-27	96.4	1.7	6		
9-28	98.3	1.9	10		2400 coke
9-29	99.2	.9	5		
9-30	101.4	2.2	14		
		157.3			21600#

THERMOCOUPLE LOCATIONS

1 VIOLET 0–3000°F
2 ORANGE "
3 BLACK 0–2500°F
4 GREEN "
5 BLUE "
6 BROWN "



WELLONS
3-B-4756

September 8, 1983

Dan - some notes that may help you interpret the charts:

Temp Charts

- 2 spaces of travel = 1 hr.
- Scale is in % - for example, 50% on thermocouple #1 would be 1500° F. The wide fluctuations in temp occur when each of the two cells are cleaned. Done daily, usually at 7:00 a.m.
- Have had problems with the temp recorder and a thermocouple. Sludge not fed during these periods of downtime.

Smoke Opacity Chart

- 4 spaces of travel = 1 hr.
- Full scale = 100% opacity
- At points along the chart a line is drawn with a date and time reference.
- Some points show a brief nearly 100% reading. This indicates soot blower operation.

Sludge Feeder Chart

- Pen rises to about 50 when sludge feeder is in operation. Also an hour meter records the accumulated operating time. If all other conditions are met the sludge feeder operates when the fuel chain operates intermittently to add fuel to the cell surge chambers. However, during the intermittent off periods the boiler continues to burn sludge and fuel from the surge chambers. The circled number on the charts is my estimate of the total hours that the sludge fuel mixture was actually burned.

Sludge Feeder Log

The sludge burned column is calculated by multiplying sludge feeder operating hours by 800#. The 800# is determined from machine design parameters. You will note that actual sludge dumped into the sludge feeder hopper is considerably less than the sludge burned calculation and the inconsistency has several causes. If the sludge is fairly solid the feeder chain flights are full and the design rate is fed. The more liquid the sludge the less full the flights are and less than the design rate is fed. Very liquid sludge requires the addition of sawdust which adds to the volume fed, but is not sludge.

Finally, the feeder hopper may be empty, but the system continues to function.

If you have any questions, call me at (601) 226-4584.

Ray

HOPPER = 2000#
DRUM = 600#

SLUDGE FEEDER LOG

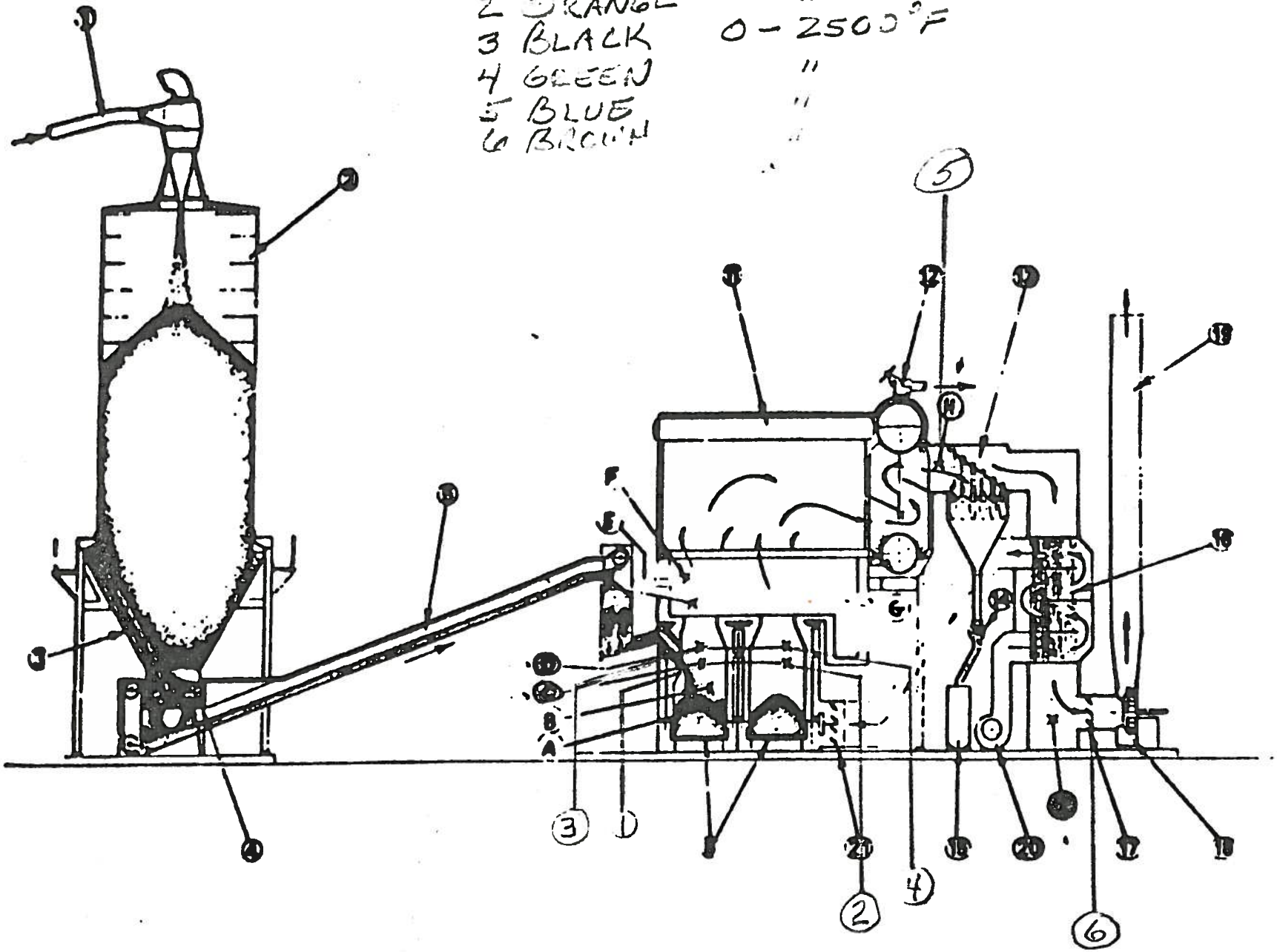
DATE	HOUR METER READING	HOURS OPERATED		SLUDGE BURNED HRS × 800	SLUDGE ADDED TO FEEDER
8-1	22.6	0		0	0
8-2	22.6	0		0	0
8-3	22.6	0		0	CREOSOTE 2400
8-4	26.7	4.1	15.5	3280	0
8-5	28.4	1.5	12	1420	0
8-6	31.3	3.2	9.75	2560	CREOSOTE 2000
8-7	"	0			
8-8	"	0			
8-9	33.3	2.0	12.5	1600	0
8-10	41.2	7.9	21.25	6320	0
8-11	48.6	7.4	22.25	5040	3000 CR
8-12	51.7	3.1	12.75	2480	4000 CR
8-13	"	0			
8-14	"	0			
8-15	53.6	1.9	8.5	1520	0
8-16	54.1	.5	2.75	400	0
8-25	54.3	.2	.75		
		31.7	93.0	24320	11400

OPERATING HRS. OF SLUDGE FEEDER

OPERATING HRS OF BOILER WITH SLUDGE ADDED

THERMOCOUPLE LOCATIONS

1	VIOLET	0–3000°F
2	ORANGE	"
3	BLACK	0–2500°F
4	GREEN	"
5	BLUE	"
6	BROWN	"



WELLONS
3-B-4756

SLUDGE FEEDER LOG

July 83

600#/drum

DATE	HOUR METER READING	HOURS OPERATED	SLUDGE BURNED HRS x 800	SLUDGE ADDED TO FEEDER
7-14	0	0		4000
7-15	4.4	4.4	3520 lbs	2400 lbs
7-20	7.9	3.5	2800	4580
7-21	11.3	3.4	2720	
7-22	14.4	3.1	2480	1200
7-23	14.9	.5	400	
7-28	18.1	3.2	2560	4400
7-29	19.3	1.2	960	
7-30	22.6	3.3	2640	

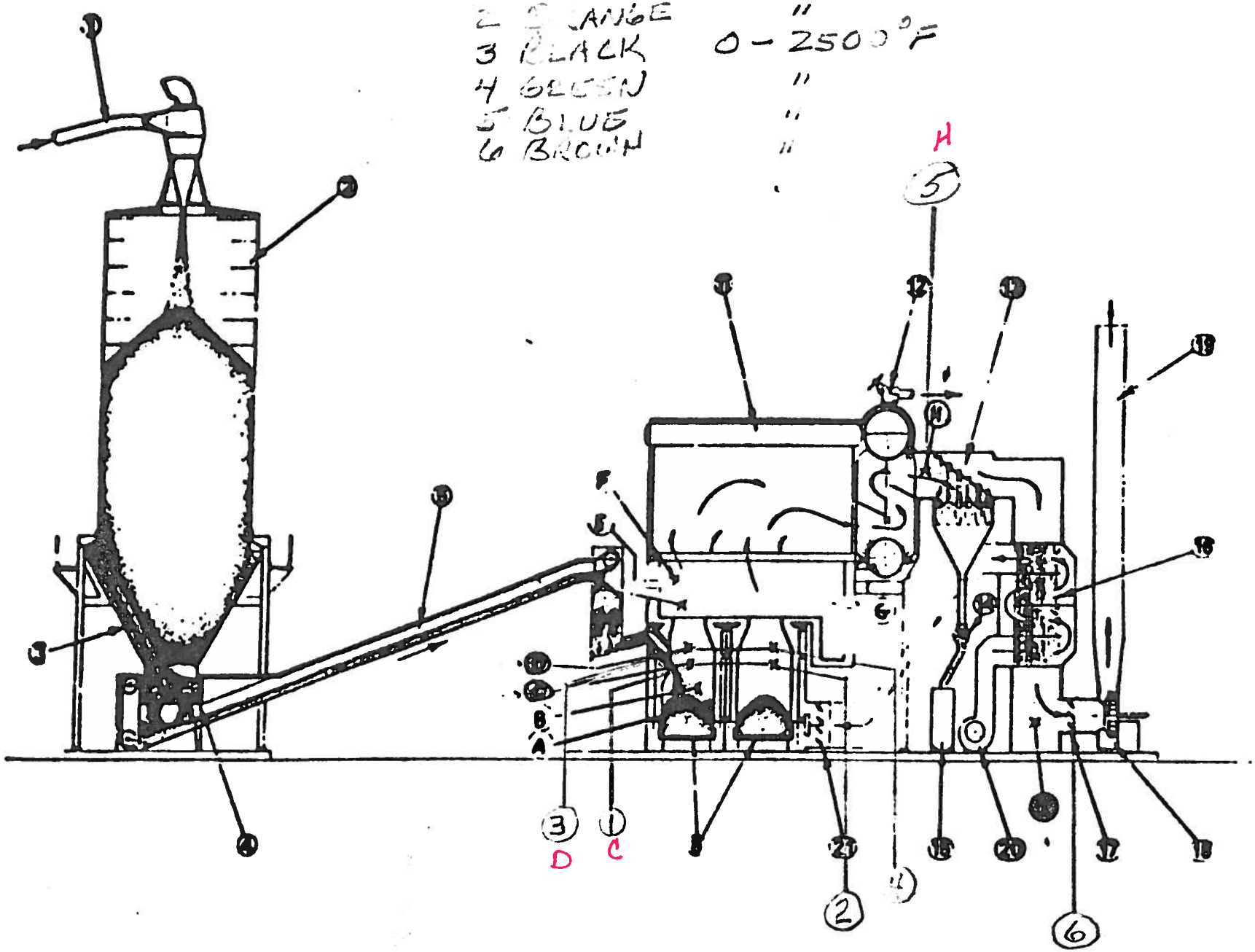
Note: Feeder did not operate on days not listed

* Note: This was all creosote sludge no pentachloralphenol was burned

DNM

THERMOCOUPLE LOCATIONS

1 VIOLET 0–3000°F
2 ORANGE "
3 BLACK 0–2500°F
4 GREEN "
5 BLUE "
6 BROWN "



WELLONS
3-B-4756

KOPPERS COMPANY, INC.

Grenada, Ms.

Grenada County

130-0960-00012

Wood Preserving

Woodwaste Boiler - 37.5×10^6 BTU/hour

4 Million Cubic Feet / Year of Wood Products

Wood Preserving - 24 tons/hour

Hydrocarbons - 25.6 tons/year

B&W Boiler 200-BR-1 @ 20×10^6 BTU/hour N.G. or #2 Fuel Oil

Cyclones - 2

OPERATE - 8760 hours/year

PROCESS WEIGHT - $4{,}000{,}000 \frac{ft^3}{year} \left(\frac{year}{8760 hours}\right) \left(\frac{25\ lb}{ft^3}\right) \left(\frac{ton}{2000\ lb}\right) = 5.7$ TPH

Allowable = $4.1 (5.7 \text{ tons/hour})^{0.67} = 13.2$ lb/hour

Potential = Assume 1/4 of 1% potentially airborne

11,400 lb/hour (0.0025) = 28.5 lb/hour

Actual = Assume cyclones @ 80% efficiency

28.5 lb/hour (0.20) = 5.7 lb/hour

B & W Boiler - 20×10^6 BTU/hour

I. Allowable -

(a) Particulate = $0.8803 (20)^{-0.1665}$ = 0.5346 lb/10^6 BTU

0.5346 lb/10^6 BTU (20×10^6 BTU/hr) = 10.7 lb/hr

(b) Sulfur Dioxide = 4.8 lb/10^6 BTU (20×10^6 BTU/hr) = 96 lb/hr

II. Potential = Actual (Natural Gas)

(a) Particulate = 0.02 ft³/hour (15 lb/ft³) = 0.3 lb/hr

(b) Sulfur Dioxide = " (0.6 lb/ft³) = 0.01 lb/hr

(c) Carbon Monoxide = " (17 lb/ft³) = 0.34 lb/hr

(d) Hydrocarbons = " (3 lb/ft³) = 0.06 lb/hr

(e) Nitrogen Oxides = " (120 lb/ft³) = 2.4 lb/hr

II. Potential = Actual (#2 Fuel Oil @ 1% sulfur)

$$20{,}000{,}000 \frac{\text{BTU}}{\text{hour}} \left(\frac{\text{gal}}{139{,}400 \text{ BTU}} \right) = 143.5 \text{ gal/hour}$$

(a) Particulate = 0.002 lb/gal (143.5 gal/hr) = 0.29 lb/hr

(b) Sulfur Dioxide = 0.142 lb/gal " = 20.38 lb/hr

(c) Carbon Monoxide = 0.005 lb/gal " = 0.72 lb/hr

(d) Hydrocarbons = 0.001 lb/gal " = 0.14 lb/hr

(e) Nitrogen Oxides = 0.022 lb/gal " = 3.16 lb/hr

42-182 100 SHEETS Made in U.S.A. NATIONAL

WOODWASTE BOILER - 37.5×10^6 BTU/hour

Maximum Feed Rate = 5.95 tons/hour

I. ALLOWABLE -

(a) Particulate - $\frac{0.3 \text{ grains}}{\text{dscf}} \left(\frac{10,397 \text{ dscf}}{\text{min}}\right)\left(\frac{60 \text{ min}}{\text{hour}}\right)\left(\frac{\text{lb}}{7000 \text{ grains}}\right) =$

26.7 lb/hour

(b) Sulfur Dioxide - $4.8 \text{ lb}/10^6 \text{ BTU} \left(37.5 \times 10^6 \text{ BTU/hr}\right) = 180$ lb/hour

II. ACTUAL -

(a) Particulate - 0.097 grains/dscf or 8.7 lb/hour (Stack Test)

(b) Sulfur Dioxide - 8.9 lb/hour

(c) Carbon Monoxide - 11.9 lb/hour

(d) Hydrocarbons - 11.9 lb/hour

(e) Nitrogen Oxides - 59.5 lb/hour

III. POTENTIAL -

(a) Particulate = 5.95 tons/hour (15 lb/ton) = 89.25 lb/hour

(b) Sulfur Dioxide = " (1.5 lb/ton) = 8.9 lb/hour

(c) Carbon Monoxide = " (2 lb/ton) = 11.9 lb/hour

(d) Hydrocarbons = " (2 lb/ton) = 11.9 lb/hour

(e) Nitrogen Oxides = " (10 lb/ton) = 59.5 lb/hour

42-182 100 SHEETS
NATIONAL Made in U.S.A.

Name: KOPPERS COMPANY, INC. Address Tie Plant Grenada, Ms.

EMS No. 1310-111-1111 Plant Type: Wood Preserving
( ) Major ( ) Minor ( ) Industrial ( ) Commercial

				Source/Reference
Emission Point Description	Wellons/Nebraska Woodwaste Boiler – 37.5x10^6 BTU/hour			
Emission Point No.				
Emission Data	Stack			
Stack Height	41 feet			
Assumed Stack Height				
Exit Gas Temperature	355°F			
Exit Diameter	3 feet			
Exit Velocity	41.0 feet/sec			
Volumetric Flowrate	10,397 dscfm			
Emission Rates		lb/hr	ton/yr	Date
Current Allowable	PM	26.7	116.9	
	SO_2	180	788	
	NO_x			
	CO			
	HC			
	Other			
Current Actual	PM	8.7	38.1	
	SO_2	8.9	39.0	
	NO_x	59.5	260.6	
	CO	11.9	52.1	
	HC	11.9	52.1	
	Other			
Current Potential	PM	89.25	390.9	
	SO_2	8.9	39.0	
	NO_x	59.5	260.6	
	CO	11.9	52.1	
	HC	11.9	52.1	

Comments Based on worst case use of fuel oil + sawdust mix.

Area

SCC Code

SIC Code

NESHAPS

NSPS

PSD Review Subject

Operating Schedule

Name: _____ Address _____

EMS No. / / - / / / - / / / /
( ) Major ( ) Minor ( ) Industrial

Plant Type: _____
( ) Commercial

	Source/Reference
Emission Point Description: WOODWASTE CYCLONES (2)	
Emission Point No.	
Emission Data: Stack	
Stack Height	
Assumed Stack Height	
Exit Gas Temperature	
Exit Diameter	
Exit Velocity	
Volumetric Flowrate	

* Emission Rates		lb/hr	ton/yr	Date	
Current Allowable	PM	13.2	57.8		
	SO_2				
	NO_x				
	CO				
	HC				
	Other				
Current Actual	PM	5.7	25.0		
	SO_2				
	NO_x				
	CO				
	HC	5.8	25.6		
	Other				
Current Potential	PM	28.5	124.8		
	SO_2				
	NO_x				
	CO				
	HC	5.8	25.6		

Comments

Area

SCC Code

SIC Code

NESHAPS

NSPS

PSD Review Subject

Operating Schedule

State of Mississippi
Air Pollution Control
PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Koppers Company, Inc.
Tie Plant,
Mississippi

has been granted permission to operate air emissions equipment in accordance with 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 December, 19 82

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL PERMIT BOARD

Charles Chisolm
Director

Expires 1st day of December, 19 85.

DATA CODED

Permit No. 0960-00012

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilities is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Department of Natural Resources Bureau of Pollution Control shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Department of Natural Resources declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Department of Natural Resources Bureau of Pollution Control and the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board and/or their authorized representatives, upon the 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 emission.

8. 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 required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and 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 Natural Resources Bureau of Pollution Control.

11. 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.

12. 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.

13. This permit is non-transferable.

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

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning December 8, 1982, and lasting until December 1, 1985, the permittee is authorized to operate air emissions equipment and emit air contaminants from wood preserving facility with a 37.5 MMBTU woodwaste boiler, and two standby fossil fueled boilers.

Emission Limitations for the Boiler utilizing the following fuels:

EMISSION CHARACTERISTIC	EMISSION LIMITATIONS		
	lb/hr	lbs/day	Other Units (Specify)
Woodwaste Only			
Particulate Matter			.3 gr/dscf
Opacity			40%
or Woodwaste plus Creosote Sludge			
Particulate Matter			.3 gr/dscf
Opacity			40%
Acenaphthene			99.98% DRE*
Pyrene			99.98% DRE*
or Woodwaste plus Pentachorophenol Sludge			
Particulate Matter			.3 gr/dscf
Opacity			40%
Octachlorodibenzo-p-dioxin (OCDD)			99.67% DRE*
HCl			.2 lb/hr

* DRE - Destruction & Removal Efficiencies

PART III
OTHER REQUIREMENTS

(1) The operator of the equipment covered by this permit shall operate and maintain this equipment to assure that the emission rates will not, at any time, exceed the rates allowed by the Mississippi Air Quality Regulations.

(2) The permittee shall be allowed to burn penta-in-oil sludge or creosote sludge with the primary fuel (woodwaste) pursuant to the following conditions.

(a) At such time the Bureau receives justifiable odor complaints, the burning of the creosote sludge or penta-in-oil sludge with the primary fuel, the Bureau shall require that the burning of sludge cease until the Bureau determines that the sludge is being burned in compliance with applicable regulations.

(b) The permittee shall not burn the sludge at any rate in excess of 400 lb/hr. Also, the creosote sludge and the penta-in-oil sludge shall not be mixed and burned.

(c) The permittee shall not exceed the emission rates established in the stack emission test performed May 17, 1982.

(d) The permittee shall retain daily operating logs containing in-stack opacity stripcharts, sludge feed rate, and also record temperatures at position 'C' and 'D' (in each boiler furnace cell), and 'H' as stated on Page 9 of the stack emission test report, August 4, 1982, and at a position downstream of the air preheater, and submit this monthly to the Department of Natural Resources, Bureau of Pollution Control.

(e) The permittee shall install an automatic sludge feeding interlock system whereby sludge is only added to the main fuel feed conveyor when steam production exceeds 25% of the boilers' rated generated capacity.

(3) The permittee shall perform emission compliance test on the boiler stack in accordance with approved methods and for any parameters set forth by the Bureau one hundred & eighty (180) days prior to this permit's expiration date.

Public Notice

PUBLIC NOTICE
MISSISSIPPI POLLUTION CONTROL
PERMIT BOARD
P.O. BOX 19385
JACKSON,
MISSISSIPPI 39209
(601-961-5171)
PUBLIC NOTICE NO. 82A-MS-017
NOTICE OF APPLICATION FOR APPROVAL TO OPERATE

Koppers Company, Inc., Grenada, Mississippi (Grenada County), has requested permission to burn wood preservative sludge (creosote or pentachlorophenol) with woodwaste in their boiler. The plant has performed intensive testing to insure emissions from the boiler would be within safe limits. The testing was performed in accordance with all Bureau specifications and the data is representative of emissions exiting the boiler.

On the basis of preliminary staff review and application of the Mississippi Air and Water Pollution Control Law (Sections 49-17-1 et seq., Mississippi Code of 1972), the Mississippi Pollution Control Permit Board proposes to issue an Operating Permit subject to specific emission limitations and special conditions. These proposed determinations are tentative.

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the Permit Board address above, no later than November 29, 1982. All comments received or postmarked prior to the date will be considered in the formulation of final determinations regarding the application. The facility number should be placed on the envelope next to the above address and also at the top of the first page of comments. A public hearing may be held where the Permit Board finds a significant degree of public interest in a proposed permit or group of permits. Any person may request a public hearing.

A fact sheet containing additional details about the application and the proposed determinations and additional information on hearing procedure is available by writing or calling the Mississippi Department

The Daily Sentinel-Sta

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

Joe Lee (W)

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

Publisher

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 128 No. 96 on the 29 day of Oct 198 2

Vol ..... No ..... on the ..... day of ..... 198....

Vol ..... No ..... on the ..... day of ..... 198....

Vol ..... No ..... on the ..... day of ..... 198....

Vol ..... No ..... on the ..... day of ..... 198....

Vol ..... No ..... on the ..... day of ..... 198....

Vol ..... No ..... on the ..... day of ..... 198....

Joe Lee (W)

Sworn to and subscribed before me, this 9 day of Nov., 1982

Janice W. Cox

My Commission Expires May 29, 1

(SEAL)

FACT SHEET

APPLICATION FOR

Facility No. 0960-00012 Date: October 13, 1982

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

Koppers Company, Inc.
P. O. Box 160
Grenada, Mississippi 38960

b. Description of Applicant's Operation

Wood preserving of railroad ties, lumber and poles with creosote or pentachlorophenol.

c. Description of Air Pollution Abatement Facilities

The boiler's emissions will be controlled by a multiclone collector.

d. Description of Emissions (as reported by applicant)

The plant's emission will be .0970 grains/dscf particulate and other emissions were found to be minute due to results of testing.

2. EMISSION LIMITATIONS

The plant will be limited to particulate .3 grains/dscf and other pollutants not to exceed rates as reported by stack emission tests.

3. MONITORING REQUIREMENTS

None

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EMISSION LIMITATIONS

None

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE EMISSIONS

The plant will be limited on the amount and type of sludge that can be burned in the boiler. Also, the boiler will be operated and maintained such that combustion of the sludge will be at its highest efficiency.

6. AIR QUALITY STANDARDS AND EMISSION STANDARDS APPLIED

Particulate Matter

a. 75 micrograms per cubic meter - annual geometric mean.

b. 150 micrograms per cubic meter - maximum twenty-four (24) hour concentration not to be exceeded more than once per year.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Mississippi Pollution Control Permit Board proposes to issue Operating Permit to this applicant subject to the emission limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on the Permit Board's proposed determinations to the following address:

Mississippi Pollution Control
Permit Board
P. O. Box 10385
Jackson, Mississippi 39209

All comments received prior to November 29, 1982, will be considered in the formulation of final determinations with regard to this application.

b. Public Hearing

The Permit Board may hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits. Public notice of such a hearing will be circulated in newspapers in the geographical area of the applicant's facility at least thirty days prior to the hearing.

Following the public hearing, the Permit Board may make such modifications in the terms and conditions of the proposed permits as may be appropriate and shall issue or deny the permit. Notice of issuance of denial will be circulated to those who participated in the hearing and to other appropriate persons who request such notification.

c. Issuance of the Permit when no public hearing is held.

If no public hearing is held, and, after review of the comments received, the Permit Board's determinations are substantially unchanged, the permit will issue and become effective immediately.

If no public hearing is held, but there have been substantial changes, public notice of the Permit Board's revised determinations will be made. Following a 30-day comment period, the permit will issue and become effective immediately, unless a public hearing is granted.

PUBLIC NOTICE

Mississippi Pollution Control Permit Board
P.O. Box 10385
Jackson, Mississippi 39209
(601/961-5171)

Public Notice No. 82A-MS-017

NOTICE OF APPLICATION FOR APPROVAL TO OPERATE

Koppers Company, Inc., Grenada, Mississippi (Grenada County), has requested permission to burn wood preservative sludge (creosote or pentachlorophenol) with woodwaste in their boiler. The plant has performed intensive testing to insure emissions from the boiler would be within safe limits. The testing was performed in accordance with all Bureau specifications and the data is representative of emissions exiting the boiler.

On the basis of preliminary staff review and application of the Mississippi Air and Water Pollution Control Law (Sections 49-17-1 et seq., Mississippi Code of 1972), the Mississippi Pollution Control Permit Board proposes to issue an Operating Permit subject to specific emission limitations and special conditions. These proposed determinations are tentative.

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the Permit Board address above, no later than November 29, 1982. All comments received or postmarked prior to that date will be considered in the formulation of final determinations regarding the application. The facility number should be placed on the envelope next to the above address and also at the top of the first page of comments. A public hearing may be held where the Permit Board finds a significant degree of public interest in a proposed permit or group of permits. Any person may request a public hearing.

A fact sheet containing additional details about the application and the proposed determinations and additional information on hearing procedure is available by writing or calling the Mississippi Department of Natural Resources, Bureau of Pollution Control. The fact sheet and review summary are available for review at the following locations:

Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209

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

PUBLIC NOTICE

Mississippi Pollution Control Permit Board
P.O. Box 10385
Jackson, Mississippi 39209
(601/961-5171)

Public Notice No. 82A-MS-017

NOTICE OF APPLICATION FOR APPROVAL TO OPERATE

Koppers Company, Inc., Grenada, Mississippi (Grenada County), has requested permission to burn wood preservative sludge (creosote or pentachlorophenol) with woodwaste in their boiler. The plant has performed intensive testing to insure emissions from the boiler would be within safe limits. The testing was performed in accordance with all Bureau specifications and the data is representative of emissions exiting the boiler.

On the basis of preliminary staff review and application of the Mississippi Air and Water Pollution Control Law (Sections 49-17-1 et seq., Mississippi Code of 1972), the Mississippi Pollution Control Permit Board proposes to issue an Operating Permit subject to specific emission limitations and special conditions. These proposed determinations are tentative.

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the Permit Board address above, no later than November 29, 1982. All comments received or postmarked prior to that date will be considered in the formulation of final determinations regarding the application. The facility number should be placed on the envelope next to the above address and also at the top of the first page of comments. A public hearing may be held where the Permit Board finds a significant degree of public interest in a proposed permit or group of permits. Any person may request a public hearing.

A fact sheet containing additional details about the application and the proposed determinations and additional information on hearing procedure is available by writing or calling the Mississippi Department of Natural Resources, Bureau of Pollution Control. The fact sheet and review summary are available for review at the following locations:

Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209

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

OUMS

STATE OF MISSISSIPPI
DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL
P.O. BOX 10385
JACKSON, MISSISSIPPI 39209

For Agency Use
FACILITY NUMBER
00012
0960-00009
Date Received
10 14 82
Month Day Year

APPLICATION FOR PERMIT TO CONSTRUCT AND/OR
OPERATE AIR EMISSIONS EQUIPMENT - GENERAL FORM

APPLICATION FOR: ____CONSTRUCTION __X__ PERMIT RENEWAL - PLEASE CHECK APPROPRIATE BOX

1. Name, Address, Location, and Telephone Number
   A. Name Koppers Company, Inc. Grenada Plant
   B. Mailing Address of Applicant
      1. Street Address or P.O. Box P. O. Box 160
      2. City Grenada 3. State MS
      4. Zip Code 38960 5. Telephone No. 601-226-4584
   C. Location of Facility
      1. Street N.A.
      2. City Tie Plant 3. State Mississippi
      4. Zip Code 38960 5. Telephone No. 601-226-4584
   D. If the facility is located outside the City limits, please provide a sketch or description showing the approximate location and attach to this application.
2. SIC Code 2491
3. Number of Employees 60
4. Principal Product Railroad Ties Lumber
5. Principal Raw Materials Wood Products (railroad ties, lumber, poles) Creosot
6. Principal Process Wood Preserving Pentachloropher
7. Maximum amount of principal product produced or raw material consumed per day
   Principal Product - 24 tons/hour
8. (A) Check here if operation which generates air pollutant emissions occurs all year X, or specify the months the operation occurs: Not Applicable
   (B) Specify how many days per week the operation occurs: Normal 5 Peak 7
   (C) Specify how many hours per day the operation occurs: Normal 24 Peak 24
9. If this application is for existing facility permit renewal only, has the facility been modified in any way (including production rate, fuel, and/or raw material changes) during period covered by the Operating Permit __X__Yes ____No or since 1972? __X__Yes ____No
   If Yes, give year(s) in which modification(s) occurred. Woodwaste boiler added 1977
10. ALL APPLICATIONS MUST BE SIGNED BY THE APPLICANT.

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete, and accurate, and that I am the owner or chief corporate officer, or his designated representative, responsible for complying with air pollution control laws and regulations.

R. C. BARTLOW
Printed Name of Person Signing

PLANT MANAGER
Title

10-7-82
Date Application Signed

Signature of Applicant

PLEASE COMPLETE FOLLOWING PAGES WHERE APPLICABLE

FOR ALL APPLICANTS, WHETHER NEW CONSTRUCTION, EXISTING FACILITY, OR RENEWAL

CONTROL EQUIPMENT COVERED UNDER THIS APPLICATION - PLEASE CHECK ALL APPLICABLE AND INDICATE NUMBER OF UNITS.

PARTICULATE EMISSIONS CONTROL EQUIPMENT

1. Cyclone(s) Multicone Collector
2. Water Scrubber _____
3. Baghouse _____
4. Electrostatic Precipitator _____
5. Venturi Scrubber _____
6. Cyclonic Baghouse _____
7. Cyclonic Scrubber _____
8. Other _____

GASEOUS EMISSIONS CONTROL EQUIPMENT NOT APPLICABLE

1. Water Scrubber _____
2. Activated Carbon Bed _____
3. Other _____

WASTE DISPOSAL SYSTEMS

1. Solid Waste Incinerator _____
2. Liquid Waste Incinerator _____
3. Wood or Other Waste Fuel Recovery Boiler X
4. Gaseous Waste Flare _____
5. Liquid Waste Flare _____
6. Other _____

Pneumatic Conveying System NOT APPLICABLE

Other (please describe) NOT APPLICABLE

FOR ALL APPLICANTS

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

This form has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment. Reasons should be given explaining any data not filled in.

PAGE 1

1. Fill in company name and address, plus year for which data is given (if existing facility) at top of page. Use data for most recent calendar year available.
2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc., and use the same reference number on each of the three pages to identify information for the same unit.
3. Manufacturer and Model Number. Nameplate data for boiler, furnace, kiln, etc. Waste gas flares and stationary internal combustion engines should also be included on this form.
4. Rated Capacity in Millions of BTU per hour.
5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.
6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.
7. Heat Usage. Percent of heat used for process and percent for space heating.

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 FACILITY NAME	Address	for Agency use Only
Grenada Plant	Tie Plant, Mississippi	

FACILITY NUMBER	Information for Calender Year	Date
0960-00012	19 82	9-30-82

2	3	4	5	6	7	
Reference Number	Manufacturer and Model Number	Rated Capacity 10^6BTU/hr	Type of Burner Unit (use code 1*)	Usage (use code 2*)	Most Usage % Process	% Space heat
WFB 01	Wellons/Nebraska	37.5	1	1	100	0
02	Murray Boiler Model M64C	28.5	7	1	100 (Standby)	0
	Size 13S	28.5	8	1	100 (Standby)	0

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FUEL BURNING EQUIPMENT

(FOR AGENCY USE ONLY)

Reference Number	Stack Parameters				Fuel Type	Fuel Data				
	Stack Height Feet	Inside Exit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature Degree F.		Maximum Amount Per Hour (Specify Units)	Amount Per Year (Specify Units)	Heat Content BTU/Gal, etc. (Specify Units)	Percent Sulfur	Percent Ash
WFB 01	41	3	50	300	Hogged Wood Waste Fuel	5.95 tons/hour	21,840 tons/year	4,500 BTU/lb	0	0.01
02	36	2.5	32	570	Natural Gas	28,200 CFH	-	1,000 BTU/cu. ft.	0	0
			32	550	#2 Fuel Oil	3.4 gpm	10,000 gal/year	18,000 BTU/lb	0	0

FUEL SUPPLIERS:

Fuel Type	Supplier
Natural Gas	None
#2 Fuel Oil	Southland Oil Grenada
Pine, Sawmill Waste	Fisackerly Winona
"	Hankins Lumber Elliot
"	Carter Houston
"	Dyer Houston
"	Koppers Grenada

(FOR AGENCY USE ONLY)

FUEL BURNING EQUIPMENT

11	12				13			
Reference Number	Air Pollution Control Equipment: Manufacturer and Model Number	Type* (Use Table 1)	Efficiency: Design	Efficiency: Actual	Emissions (Tons/Year): Particulate	Emissions (Tons/Year): So_2	Emissions (Tons/Year): Other (specify)	Basis of Estimate
WFB 01	Wellons, Inc., Multicone Collector	32+31	90%	90%	0.1 grain/SCFM	0	41.8	Performance Test 10/79
	No Air Pollution Control Equipment Required							
02	Murray Boiler Model M64C	-	-	-	0	0	0	Gas
	Size 13S				0	0	0	#2 Oil

*For Wet Scrubber give
Gallons per minute Water
Flow and Water Pressure if known.

MANUFACTURING PROCESS OPERATIONS

Company Name	Address	FOR AGENCY USE
Koppers Company, Inc. Forest Products Group Grenada, Mississippi Plant	P. O. Box 160 Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calendar Year	Date
0960-00012	1982	9-30-82

Reference Number	Process or Unit Operation Name	Rated Process Capacity Tons/Hour	Feed Input		Number of Emission Points To Air	Product Output*	
			Quantity Per Hour	Quantity Per Year		Quantity Per Hour	Quantity Per Year
1	Wood Preserving	24		4 million C.F. of wood products 4 million gals. of preservative	Storage Tank		4 million C.F. of wood produc

*Specify Units of Measure Used

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

Reference Number	Stack Data				Air Pollution Control Equipment			
	Height Feet	Inside Unit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature °F	Manufacturer and Model Number	Type* (use Table 1)	Collection Efficiency	
							Design	Actual
1	NONE							

*For Wet Scrubbers Give Gallons per minute Water Flow and Water Pressure if known.

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

11 12

Reference Number	Process Emissions*			Basis for Estimation	(Agency Comments Only)
	Particulates	Sulfur Oxides	Others (Specify by chemical composition)		
1	25.6 tons of fugitive emissions ~~from storage tank breathing and~~ filling			API storage ~~tank breathing~~ & filling losses	

*Please Express Emissions as Tons per Year and Pounds per Hour and Identify Units Being Used.

REFUSE DISPOSAL AND INCINERATION

A

Company Name	Information for Year	(Agency Use Only)
Koppers Company, Inc. Forest Products Group	1981	
Address	**Date**	
P. O. Box 160 Tie Plant Mississippi 38960	9-30-82	

B — Description of Waste Materials

Type (Describe)	C Maximum Amount Per Day (Pounds)	D Amount Per Year (Tons)	E Method of Disposal 1*
Pine Sawdust & Bark	10,000	1,200	5
Creosote Process Sludges	9,600	1,752	5 *
Penta Process Sludges			
Treated wood from above			

If Waste Disposal is by Incineration, Specify the Following:

1. Type of Incinerator:

NOT APPLICABLE

- single chamber ☐
- multiple Chamber ☐
- Modified (describe) ☐
- Other (describe) ☐
- Rotary ☐
- Flue Fed ☐

*See test report May 17, 1982 for data on burning

2. Manufacturer's Name: _____
   Model Number _____
   Rated Capacity _____ Pounds / Hour _____ Type Waste
3. Quantity Burned: _____ Pounds / Day
   _____ Tons / Year
4. Operating Schedule _____ Hours / Day
   _____ Days / Year

*1 Disposal Method Codes

1. Open Burning
2. Landfill (No Burning)
3. Incinerator (Complete rest of Form)
5. Burned in Boiler or Furnance
6. Other (Specify)

(AGENCY USE ONLY)

5. Auxiliary Fuel:

Type	NOT APPLICABLE
Amount/Year (Specify Units)	"
Heat Content	"
Percent Sulfur	"
Percent Ash	"
Supplier's Name	"

6. Pollution Control Equipment:

Manufacturer	"
Model Number	"
% Efficiency	"
Type	"
GPM Water Flow (If Wet Scrubber)	"

7. Stack Data:

Height	"	Feet
Inside Exit Diameter	"	Feet
Exit Gas Velocity	"	Feet/Sec.
Exit Gas Volume	"	SCFM
Exit Gas Temp.	"	^{o}F.

8. Estimated Emissions From Refuse Incineration:

Name: NOT APPLICABLE Basis of Estimates:

Particulates	"	Tons/Year	
Sulfur Oxides	"	"	

ADDITIONAL INFORMATION

1. Two copies of construction site plot plan.
2. Two copies of detailed equipment drawings.
3. Two copies of a detailed explanation of the process and control equipment.
4. Two copies of a flow diagram of the of the process or operation showing control devices.

SIGNATURES: If for construction, the application must be submitted in duplicate and both copies should also be signed and stamped by an engineer registered in the State of Mississippi. If application is for Existing Facility or Renewal of Permit to Operate, registered engineer's signature not required. All signatures and stamps must be originals on all copies, not photocopies.

NOT APPLICABLE

TYPED NAME & MISSISSIPPI REGISTRATION NUMBER

NOT APPLICABLE

SIGNATURE OF ENGINEER REGISTERED IN MISSISSIPPI

NOT APPLICABLE

Seal of Engineer
Registered in Mississippi

STATE OF MISSISSIPPI

COUNTY OF HINDS

PERSONALLY CAME before me, the undersigned, a notary public in and for HINDS county, Mississippi, the CLERK of THE CLARION LEDGER, a newspaper published in the City of Jackson, First Judicial District of Hinds County, in said state, who, being duly sworn, deposes and says that

PUBLIC NOTICE
Mississippi Pollution Control Permit Board
P.O. Box 10385
Jackson, Mississippi 39209
(601/961-5171)
Public Notice No. BZA-MS-017
NOTICE OF APPLICATION FOR APPROVAL TO OPERATE
Koppers Company, Inc., Grenada, Mississippi (Grenada County), has requested permission to burn wood preservative sludge (creosote or pentachlorophenol) with woodwaste in their boiler. The plant has performed intensive testing to insure emissions from the boiler would be within safe limits. The testing was performed in accordance with all Bureau specifications and the data is representative of emissions exiting the boiler. On the basis of preliminary staff review and application of the Mississippi Air and Water Pollution Control Law (Sections 49-17-1 et seq., Mississippi Code of 1972), the Mississippi Pollution Control Permit Board proposes to issue an Operating Permit subject to specific emission limitations and special conditions. These proposed determinations are tentative.
Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the Permit Board address above, no later than November 29, 1982. All comments received or postmarked prior to that date will be considered in the formulation of final determinations regarding the application. The facility number should be placed on the envelope next to the above address and also at the top of the first page of comments. A public hearing may be held where the Permit Board finds a significant degree of public interest in a proposed permit or group of permits. Any person may request a public hearing.
A fact sheet containing additional details about the application and the proposed determinations and additional information on hearing procedure is available by writing or calling the Mississippi Department of Natural Resources, Bureau of Pollution Control. The fact sheet and review summary are available for review at the following locations:
Mississippi Department of Natural Resources
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
Please bring the foregoing to the attention of persons whom you know will be interested.
October 30, 1982

THE CLARION LEDGER is a newspaper as defined and prescribed in Senate Bill No. 203 enacted at the regular session of the Mississippi Legislature of 1948, amending Section 1858, of the Mississippi Code of 1942, and that the publication of notice of which the annexed is a copy, in the matter of

Approval to Operate/Koppers Company, Inc.

has been in said paper 1 times consecutively, to-wit:

On the 30th day of OCTOBER, 1982

On the ____ day of ____, 19____

On the ____ day of ____, 19____

On the ____ day of ____, 19____

On the ____ day of ____, 19____

On the ____ day of ____, 19____

ubscribed before me, this

OCTOBER, 19 82

Loretta W. Bryant
Notary

My Commission Expires May 7, 1985

Irma Dempsey
Clerk

Jackson, Miss., OCTOBER 30th, 1982

Department of Natural Resources

TO THE CLARION LEDGER, DR.
(Name Newspaper)

TO PUBLISHING

case of

319 words space 1 times and making proof, $ 21.14.

RECEIVED OF

payment in full of the above account.

, 19____.

PROOF OF PUBLICATION

Koppers Company, Inc.
Source No. 0960-00012
Tie Plant, Mississippi
Grenada County

Dan N. McLeod

On May 18, 1982, Koppers Company, Inc. had stack emission tests performed at their Tie Plant, Mississippi Wood Preserving Plant. The tests were conducted in accordance with Operating Permit No. 0960-00012, and to also show the level of various pollutants at different loading rates when pentachlorophenol sludge and creosote sludge were added to the primary fuel for their woodwaste boiler.

People present for the testing were as follows:

Mr. John Kane, Air Quality Engineer
Mr. Henry Vanderlip, Plant Engineer
Mr. W. A. Sudekum, Project Engineer

Kopper's Test Team:

Mr. Bob Jupin
Mr. Mark Gaunebach
Mr. Bob Rusmak

Mr. Jim Teaford, Wellon Representative
Mr. Ray Bartlow, Plant Manager

The testing began at 11:10 a.m. A particulate test was conducted for only one run to get an estimate of the baseline emissions. Throughout the testing the boiler was maintained at a temperature of 1900°F - 2100°F. The boiler was producing 25,000 - 28,000 lbs/hr. steam (30,000 lb/hr capacity).

At approximately 2:00 p.m. testing began for adding of creosote sludge at 100 lb/hr. The adding of sludge throughout the testing was done by weighing the sludge on a scale then having a man add it to the woodwaste conveyor at arranged time intervals. This was performed 30 minutes prior to any testing each time. This adding process I believe had quite a bit of error involved.

That afternoon they also performed the test for the adding of the creosote sludge at 250 lbs/hr., however, a thunderstorm prevented the 400 lbs/hr test.

On May 19, 1982, the creosote sludge testing was completed and the penta sludge was to begin being added. However, the woodwaste fuel ran out and none was ordered due to a prior agreement that I was not aware of. The agreement was between Wellons and Koppers and was that Wellons would fund half of the cost of testing if Koppers would perform a particulate test on the boiler while peanut hulls in a pellet form were added. Therefore, the penta testing was performed on May 20, 1982, and I was not present.

While there at the testing I observed no visible emissions exiting the stack until the peanut hulls were added. I felt the testing I observed was performed in a very professional manner and was performed in accordance with all previously established parameters.

DM:cl



State of Mississippi
Air Pollution Control
PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Koppers Company, Inc.
Tie Plant,
Mississippi

has been granted permission to operate air emissions equipment in accordance with 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 11th day of December, 19 79

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
BUREAU OF POLLUTION CONTROL PERMIT BOARD

_____
Director

Expires 1st day of December, 19 82.

Permit No. 0960-00012

PERMIT MODIFIED: MAY 11, 1982

DATA CODED

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilities is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Department of Natural Resources Bureau of Pollution Control shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Department of Natural Resources declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Department of Natural Resources Bureau of Pollution Control and the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board and/or their authorized representatives, upon the 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 emission.

8. 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 required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and 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 Natural Resources Bureau of Pollution Control.

11. 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.

12. 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.

13. This permit is non-transferable.

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

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning December 11, 1979, and lasting until December 1, 1982, the permittee is authorized to operate air emissions equipment and emit air contaminants from wood preserving facility with one woodwaste boiler.

Such emissions shall be limited and monitored by the permittee as specified below:

EMISSION CHARACTERISTIC	EMISSION LIMITATIONS		
	lb/hr	lbs/day	Other units (specify)
Particulate Matter			.3 grains/dscf
Opacity			40%

EMISSION CHARACTERISTIC	MONITORING REQUIREMENTS		
	Measurement Frequency	Sample Type	Reporting Frequency

PART III
OTHER REQUIREMENTS

The permittee will be allowed to test burn penta-in-oil sludge or creosote sludge with the primary fuel (woodwaste) for six (6) months or until October 11, 1982. At such time if no problems have occurred, the Bureau will go to Public Notice for thirty (30) days for the public's response. The test burning is allowed pursuant to the following conditions:

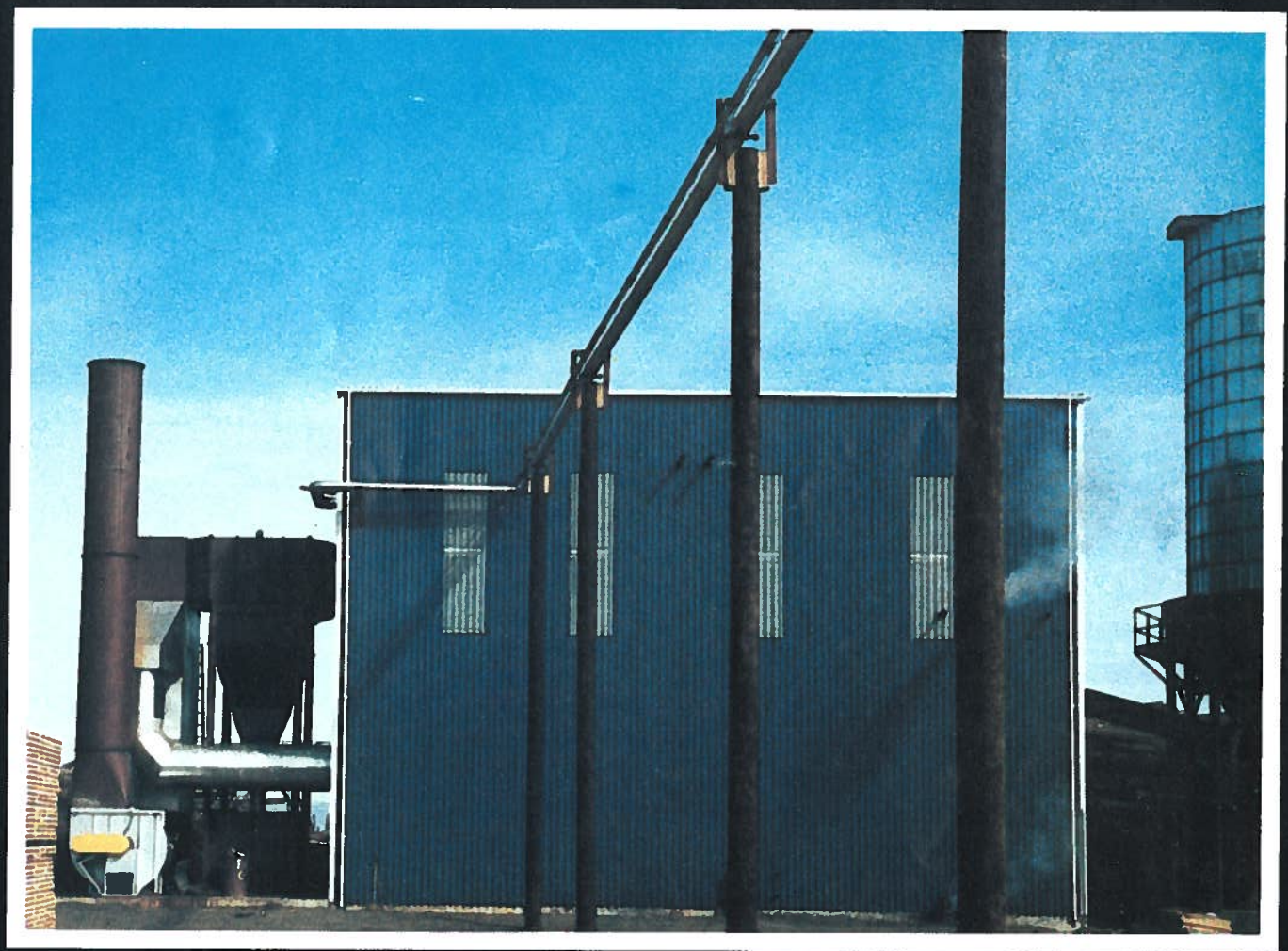
(1) At any time the Bureau receives justifiable odor complaints from the test burning of the cresote slude or penta-in-oil sludge with the primary fuel the Bureau will request the test burning be terminated.

(2) The permittee will perform emission compliance test in accordance to the submitted methods approved by the Bureau for each of the previously established parameters, at the following increments: 100, 250, and 400 lb/hr of each of the sludges. There will also be emission compliance tests performed with no sludge being added to obtain baseline data. If so chosen to combine the sludges emission compliance shall also be performed for all requested parameters.

(3) The permittee shall retain operating logs containing in-stack opacity stripcharts and sludge feed rate data for the Department of Natural Resources, Bureau of Pollution Control review upon request.

DAN IV McLeod 3/20/06

WELLONS WOOD FIRED

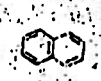
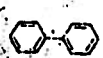
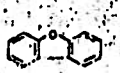
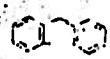
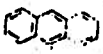
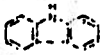
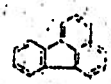
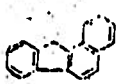
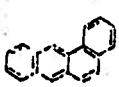


BOILER SYSTEMS

Chemical Composition of Creosote

The general chemical composition of creosote has long been known because of work on coal tar (9, 14, 20, 28). Most of the 200 or more compounds in creosote are polycyclic aromatic hydrocarbons. Only a limited number of them—less than 20—are present in amounts greater than one percent. The major polycyclic aromatic hydrocarbons in creosote listed in Table 1 generally comprise at least 75 percent of the creosote. Stasse (23) used fractional distillation to separate and identify some of these major components. Sweeney, *et. al.* (25) used infrared analyses to characterize creosote, and found the major components accounted for the major features of the infrared spectrum of whole creosote. McNeil and Vaughan (16) and Vaughan and Grant (26) used gas chromatography to identify the major components. Becker and Petrowitz (2) used programmed temperature gas chromatography to examine the composition of three different creosotes; of 19 observable peaks, they identified 17. Most of the work on applying gas chromatography to investigate the chemical composition of creosote has been summarized in a 1967 AWPA committee report (3). Thin-layer chromatography and column chromatography, as well as gas chromatography, have been used in related

Table 1.—Major Components in Creosote

Peak No.	Component	Whole Creosote: Approx. Pct. ±0.7%	Boiling Point[1] °C. 760	Melting Point[1] °C.	Structural Formula	Molecular Weight
1	Naphthalene	3.0	218	80.55		128.2
2	2-Methylnaphthalene	1.2	241.05	24.58		142.2
3	1-Methylnaphthalene	.9	244.64	-22		142.2
4	Biphenyl	.8	255.9	71		154.2
5	Dimethylnaphthalenes	2.0	268	7.66, 105		156.2
6	Acenaphthene	9.0	279	96.2		156.2
7	Dibenzofuran	5.0	287	86-87		168.2
8	Fluorene	10.0	293-295	116-117		166.2
9	Methylfluorenes	3.0	318	46-47		180.2
10	Phenanthrene	21.0	340	101		178.2
11	Anthracene	2.0	340	216.2-.4		178.2
12	Carbazole	2.0	355	247-248		167.2
13	Methylphenanthrenes	3.0	354-355	65-123		192.2
14	Methylanthracenes	4.0	360	81.5-209.5		192.2
15	Fluoranthene	10.0	382	111		202.3
16	Pyrene	8.5	393	156		202.3
17	Benzofluorenes	2.0	413	189-190		216.3
18	Chrysene	3.0	448	255-256		228.3

904

[1]Values from Handbook of Chemistry and Physics, 1971-72, 52nd ed., Chemical Rubber Publishing Co., Cleveland, Ohio.

AQE 1
METHOD FOR DETERMINATION OF CONDENSABLE HYDROCARBON IN STACK GAS

The following method has been developed for determination of condensable and noncondensable hydrocarbon (HC). The method traps condensable HC in impingers with water solutions which are contained in an ice bath. The condensable HC would be those with vapor pressure of less than 0.1 mm Hg at 50°F. The condensed HC is determined through chromatographic techniques after extraction of the impinger solution with a suitable solvent. Noncondensable HC is determined during the test period using a field portable flame ionization detector (FID). Gas samples are taken from the sampling train before the silica gel impinger with a syringe and injected into the FID. The FID results are in ppm_v as CH_4.

Total HC in the gas stream is determined from a sum of the condensable HC determined by collection in the impingers plus the noncondensable portion determined on site. Individual HC concentrations can also be determined as GC results are obtainable listing all HC compounds detectable and identifiable.

EPA Methods 1 through 4 will be used to determine the sampling location and traverse points, and stack gas velocity, moisture content and fixed gas concentrations. Hydrocarbon collection occurs in an adapted EPA Method 5 sampling train. Modifications of this train are: the elimination of filter and cyclone, elimination of heat on the probe and in the hot box, use of an appropriate solvent for rinsing, and extraction of impinger solutions.

Determination of sampling and analytical accuracies is difficult because of the vest amount of HC compounds which are encountered. However, good field practice allows for a sample volume to be at least 30 DSCF.

After sampling, impinger catch volumes are noted as required for moisture

determination. Impinger catches are saved for labor laboratory work. Probe and all glassware are rinsed with the appropriate solvent and rinses saved for combination with impinger catch extract.

Laboratory preparation of the samples generated by a stack test begins with extraction of impinger catches with the solvent which has been chosen for the type of HC expected in the stack test. This solvent is the same as that used for the equipment cleanup. The impinger catches are extracted three times with the solvent in a volume equal to 10% of the catch volume. The extract and the rinse sample are combined and filtered through anhydrous sodium sulfate to remove water. The sulfate is rinsed with fresh solvent.

The combined solvent sample is then concentrated to a volume which will allow Analytical to determine HC without much additional preparation or dilution. The concentration is carried out through use of an apparatus known as Kuderna-Danish concentrator. The sample is submitted to the Gas Chromatography Section.

The results obtained from GC are reported in total milligrams for sample volume for individual HC's. All weights recorded for a given stack test are added and reported as insoluble material in impinger. Added to this weight is the amount of noncondensable HC determined in the field through use of the FID. The PA program will then compute this result to terms of stack gas rates such as gr/DSCF and lb/hr.

If individual HC emission rates or concentrations are desired, the total mg/sample volume of that HC are entered in the PA program under insoluble material in impingers. Also, the molecular weight of the HC is entered in the PA program under insoluble material in impingers. The program will then calculate the concentration in part per million by volume, as well as the pounds/hr and grains/dry standard cubic feet.

AQE 8
METHOD FOR DETERMINING CHLORIDE AND CHLORINE IN STACK GAS

This method is developed for determining chloride (Cl^-) and chlorine (Cl_2) in stack gas. The sampling procedure is adopted from EPA Method 6 for sulfur dioxide. The procedure will use a heated probe, no filter, and four full-sized impingers. The impingers will contain 100 ml of 0.1 n NaOH (4 g/liter) solution for absorption of Cl^- and Cl_2.

Sampling procedure will follow EPA Method 2, 3, and 4 for velocity, fixed gas analysis, and moisture content of the stack gas. The amount of stack gas sampled for each Cl^-/Cl_2 test should be at least 30 DSCF. This sample volume corresponds with a source sampling detection of 0.0002 gr/DSCF of either Cl^- or Cl_2, or an absorbed weight of 0.5 mg distributed in the impinger solution and rinse samples.

Equipment rinsing should be done with 0.1 n NaOH solution. Probe and glassware up to the first impinger should be rinsed and combined with the first impinger solution. The second impinger solution will be combined with the rinses from the remaining glassware and kept separate from the first impinger sample. The purpose of this separation of these two samples is to allow the determination of absorption efficiency of the impingers.

Determination of Cl^- in the impinger solutions will be done according to Ion Chromatography procedures. The detection limit of this analytical procedure is 0.1 mg/l. Assuming a final impinger solution plus rinses volume of 200 ml, the minimum amount of Cl^- detectable in each impinger sample would be 0.02 mg. The 0.02 mg in a total sample volume would correspond to an analytical limit of stack gas concentration of 0.00001 gr/DSCF assuming 30 DSCF sample volume.

Determination of Cl_2 will be done according to Method 409D "Stabilized Neutral Orthotolidine (SNORT) Method" as listed in the 14th edition of Standard Methods For Examination of Water and Wastewater, 1975 pg 325-

329. The method has an analytical detectable limit of 0.01 mg/l of free chlorine in the impinger solutions. Using the same assumptions as used for the chloride determination, this analytical limit would translate to 0.000001 gr/DSCF free chlorine in the stack gas.

the combined residual chlorine.) Wash the apparatus and sample cell thoroughly to remove iodide ion in order to avoid inaccuracies when the titrator is used subsequently for a free available chlorine determination.

d. Separate samples: If desired, determine the total residual chlorine and the free available chlorine on separate samples. If total available chlorine alone is required, treat the sample immediately with 1 ml KI solution followed by 1 ml acetate buffer solution, and titrate with phenylarsine oxide titrant as described in ¶4*c* preceding.

e. Monochloramine: After the titration for free available chlorine, add 0.2 ml KI solution to the same sample and, without refilling the buret, continue the titration with phenylarsine oxide titrant to the recognized end point. Subtract the last increment to obtain the net volume of titrant consumed by the monochloramine.

f. Dichloramine: Add 1 ml acetate buffer solution and 1 ml KI solution to the same sample and titrate the final dichloramine fraction as described for the previous two chlorine components.

5. Calculation

Convert the individual titrations for free available chlorine, combined available chlorine, total available chlorine, monochloramine, and dichloramine into mg/l by the following equation:

$$\text{mg/l Cl} = \frac{A \times 200}{\text{ml sample}}$$

where A = ml phenylarsine oxide titration.

6. Precision and Accuracy

See Tables 409: I through IV preceding and the general introduction to Section 409.

409 D. Stabilized Neutral Orthotolidine (SNORT) Method

1. General Discussion

a. Principle: Orthotolidine is quite stable in the reduced form when stored in brown bottles in the presence of hydrochloric acid. However, the stability of oxidized orthotolidine decreases as the pH increases. For this reason, orthotolidine usually has been used at a pH of 1.3 or less. As the pH increases, the rate of reaction of orthotolidine with combined chlorine, iron, and nitrite becomes slower and their interference essentially disappears at pH 7. Anionic surface-active agents stabilize the color developed by free chlorine and orthotolidine at pH 7.0. "Aerosol OT,"* sodium di(2-ethyl-hexyl) sulfosuccinate, is the best stabilizing reagent. The optimum concentration of stabilizer is 40 mg for each 100 ml of sample plus reagents.

* A trademark of the American Cyanamid Co.

The ratio by weight of orthotolidine dihydrochloride to chlorine must be at least 8 to 1. With the concentration of orthotolidine recommended in the procedure, the chlorine concentration must not exceed 6 mg/l.

The pH of the final solution must be between 6.5 and 7.5 to minimize low-pH interference and high-pH fading. If the pH of the sample is less than 5 or greater than 9, and the alkalinity is greater than 150 or the acidity greater than 200 mg/l, check the final pH of the solution. If the alkalinity is high and the final pH does not lie within the range of 6.5 to 7.5, adjust the sample pH to this range before analysis.

To insure correct color development, minimum interference, a pH of 6.5 to 7.5, and a ratio of orthotolidine to free chlorine of at least 8 to 1, the sample must be added to the reagents.

The reaction time and temperature are much less important in this method than in other colorimetric methods for chlorine determination. Nevertheless, for extremely large combined chlorine to free chlorine ratios, high temperature and long waiting times are undesirable. At 35 C a 1-mg/l monochloramine solution produces a false free chlorine residual of 0.01 mg/l per min. At high temperature and for long waiting times, color fading may become important, especially at levels below 0.1 mg/l of free chlorine. A 1-mg/l solution of free chlorine fades at the rate of 0.005 mg/l per min at 35 C.

Iodide can be added in neutral solution to measure monochloramine and in acidic solution to measure dichloramine. The reaction of iodide and chloramine yields a concentration of iodine equivalent to the chloramine. In the colorimetric procedure, orthotolidine is present with the chloramine when iodide is added and the iodine produced by the chloramine is immediately reduced back to iodide and acts as a catalyst in generating an amount of blue orthotolidine equivalent to the original chloramine present. Because of this catalytic effect, lesser amounts of iodide are required than in amperometric titration; this improves the separation of the monochloramine and dichloramine fractions.

b. Interference: When orthotolidine or any other chromogenic reagent is used to measure residual chlorine, strong oxidizing agents of any kind interfere. Such interferences include bromine, chlorine dioxide, iodine, manganic compounds, and ozone. However, the reduced forms of these compounds—bromide, chloride, iodide, manganous ion, and oxygen—do not interfere. Reducing agents such as ferrous compounds, hydrogen sulfide, and oxidizable organic matter do *not* interfere in the analytical method but may interfere in maintaining chlorine residuals by reducing the chlorine residual by reaction with the chlorine to produce chloride ion, that is, acting simply as chlorine demand.

Turbidity and color also interfere unless the background turbidity or color is compensated for by using a blank. Concentrations of 55 mg/l iron, 92 mg/l nitrite, and 6,000 mg/l chloride do not interfere. The interference of combined chlorine is insignificant in the determination of free chlorine except (as noted before) at high temperature and long waiting times. Manganic compounds produce up to stoichiometric interference but can be compensated for by

using a blank. In the presence of more than 10 μg/l manganic manganese, a blank is prepared by adding 5 ml sodium arsenite to a 100-ml sample. This sample is added to the reagents, as usual, and this blank is used as a reference in measuring the free chlorine present, either by zeroing the photometer with this blank or by using the blank as a reference when making color comparison.

If nitrogen trichloride is present, half reacts as free available chlorine but the remainder does not interfere in the monochloramine and dichloramine measurements. Many different organic chloramines are possible. The extent to which these organic chloramines interfere in the monochloramine or dichloramine steps depends on the nature of the organic compound; they may appear in either or both fractions.

c. Minimum detectable concentration: Approximately 10 μg/l free chlorine.

2. Apparatus

Colorimetric equipment: One of the following is required:

a. Filter photometer, providing a light path of 1 cm or longer for ≤1 mg/l free chlorine residual, or a light path from 1 to 10 mm for free chlorine residual >1.5; also equipped with a red filter having maximum transmission in the range of 600 to 650 nm.

b. Spectrophotometer, for use at 625 nm, providing a light path noted in the paragraph above.

3. Reagents

a. Chlorine-demand-free distilled water: Add sufficient chlorine to distilled water to destroy the ammonia and nitrite. The amount of chlorine required will be about 10 times the amount of ammonia nitrogen present; produce an initial residual of more than 1.0 mg/l free chlorine. Let the chlorinated distilled water stand overnight or longer; then expose to direct sunlight until all residual chlorine is discharged.

b. Neutral orthotolidine reagent: Add 5 ml conc HCl to 100 ml chlorine-demand-free distilled water. Add 10 ml of this acid solution, 20 mg mercuric chloride, $HgCl_2$, 30 mg disodium ethylenediamine tetraacetate dihydrate, also called (ethylenedinitrilo)-tetraacetic acid sodium salt, and 1.5 g orthotolidine dihydrochloride to chlorine-demand-free distilled water and dilute to 1 l. Store in a brown bottle or in the dark at room temperature. Protect at all times from direct sunlight. Use no longer than 6 months. Avoid contact with rubber. Do not let the temperature fall below 0 C because the resulting crystallization of orthotolidine can lead to deficient subsequent color development.

CAUTION: *Handle this chemical with extreme care. Never use a mouth pipet for dispensing this reagent, but rely on an automatic dropping or safety pipet to measure the necessary volumes. Avoid inhalation or exposure to the skin.*

c. Buffer-stabilizer reagent: Dissolve 34.4 g dipotassium hydrogen phosphate, K_2HPO_4, 12.6 g potassium dihydrogen phosphate, KH_2PO_4, and 8.0 g "Aerosol OT," 100% solid di(2-ethylhexyl)sulfosuccinate, in a solution of 500 ml chlorine-demand-free water and 200 ml diethylene glycol monobutyl ether. Dilute to 1 l with chlorine-demand-free water.

d. Potassium iodide solution: Dissolve

0.4 g KI in chlorine-demand-free distilled water and dilute to 100 ml. Store in a brown glass-stoppered bottle, preferably in a refrigerator. Discard when a yellow color develops.

e. Sulfuric acid solution: Cautiously add 4 ml conc H_2SO_4 to chlorine-demand-free distilled water and dilute to 100 ml.

f. Sodium carbonate solution: Dissolve 5 g Na_2CO_3 in chlorine-demand-free distilled water and dilute to 100 ml.

g. Sodium arsenite solution: Dissolve 5.0 g $NaAsO_2$ in distilled water and dilute to 1 l. (CAUTION: *Toxic—take care to avoid ingestion.*)

4. Procedure

a. Calibration of photometer: Construct a calibration curve by making dilutions of standardized hypochlorite solution prepared as directed under Chlorine Demand, Section 410A.3*a*. Take special precautions when diluting to low concentrations because of possible consumption of small amounts of chlorine by trace impurities. Use chlorine-demand-free water in making the dilutions. Expose all glassware to be used in the dilutions to water containing at least 10 mg/l of chlorine and leave it in contact for a few hours. Rinse with chlorine-demand-free water. Develop and measure the colors as described below for the sample.

b. Color development of free chlorine: Use 0.5 ml neutral orthotolidine and 0.5 ml stabilizer-buffer reagent with 10-ml samples; 5 ml neutral orthotolidine and 5 ml stabilizer-buffer reagent with 100 ml; and the same ratio for other volumes. Place the neutral orthotolidine and stabilizer-buffer mixture in the photometer tube or a 250-ml beaker on a magnetic stirrer. Mix the reagent slightly and add the sample to the reagents with gentle stirring. Measure the percent transmittance and convert to absorbance at 625 nm. The value obtained (*A*) from the calibration curve represents the free chlorine residual. To minimize possible interference from high concentrations of combined chlorine and high-temperature fading, complete mixing of the sample with the reagents and reading on the photometer within approximately 2 min.

c. Monochloramine: Return any portion used for measuring free chlorine in ¶4*b* to the sample. Add, with stirring, 0.5 ml KI solution to each 100-ml sample, or a similar ratio for other sample volumes. Again measure the transmittance of the residual free chlorine plus the monochloramine and obtain the value (*B*) from the calibration curve.

d. Dichloramine: Return any portion used for measuring the monochloramine in ¶4*c* to the sample. Add, with stirring, 1 ml H_2SO_4 solution to each 100-ml sample, or a similar ratio for other sample volumes. After 30 sec for color development add 1 ml sodium carbonate solution slowly with stirring or until a pure blue solution returns. Measure the transmittance of the total residual chlorine—free chlorine, monochloramine, and dichloramine—and obtain the value (*C*) from the calibration curve with a slight dilution correction.

e. Compensation for interferences: Compensate for the presence of natural color or turbidity as well as manganic compounds by adding 5 ml arsenite to 100 ml sample. Add this blank sample to the reagents as above. Use the color of

the blank to set 100% transmittance or zero absorbance on the photometer. Measure all samples in relation to this blank. Read from the calibration curve the concentrations of chlorine present in the sample.

5. Calculation

mg/l free residual chlorine
$= A$, including ½ trichloramine if present

mg/l monochloramine $= B-A$, as mg/l Cl
mg/l dichloramine $= 1.03\ C-B$, as mg/l Cl
mg/l total chlorine $= 1.03\ C$, as mg/l Cl

6. Precision and Accuracy

See Tables 409: I through IV preceding and the general introduction to Section 409.

409 E. DPD Ferrous Titrimetric Method

1. General Discussion

a. Principle: N,N-diethyl-p-phenylenediamine (DPD) is superior to neutral orthotolidine as an indicator in the ferrous method. The colors produced are more stable, fewer reagents are required, and a full response in neutral solution is obtained from dichloramine. In the titrimetric procedure, decolorization by standard ferrous ammonium sulfate (FAS) titrant is instantaneous, thereby enabling each step to be performed more rapidly. Where complete differentiation is not required, the procedure may be simplified further to give only free and combined available chlorine or total residual available chlorine.

In the absence of iodide ion, free available chlorine reacts instantly with the N,N-diethyl-p-phenylenediamine (DPD) indicator to produce a red color. Subsequent addition of a small amount of iodide ion acts catalytically to cause monochloramine to produce color. Further addition of iodide ion to excess evokes a rapid response from dichloramine. Unlike the reaction with neutral orthotolidine, any nitrogen trichloride present no longer displays color with free available chlorine but is included with dichloramine. However, if iodide ion is added before DPD, a proportion of the nitrogen trichloride appears with free available chlorine. A supplementary procedure based on this alteration of the order of adding the reagents thus permits the estimation of nitrogen trichloride.

Chlorine dioxide appears, to the extent of one-fifth of its total available chlorine content, with free available chlorine. A full response from chlorine dioxide, corresponding to its total available chlorine content, may be obtained if the sample first is acidified in the presence of iodide ion and subsequently is brought back to an approximately neutral pH by the addition of bicarbonate ion. Bromine, bromamine, and iodine react with DPD indicator and appear with free available chlorine. DPD procedures for the determination of these halogens and related compounds have been developed.

b. pH control: For accurate results careful pH control is essential. At the proper pH of 6.2 to 6.5, the red colors produced may be titrated to sharp colorless end points. *Carry out the titration as*

Working Document for Committee Use Only
Not for Publication Except as Expressly
Approved by the Chairman of the Committee
or the Managing Director of the Society

Task Group No.: D19.05.04.08
Draft No. 5
Date: January 26, 1981
TG Chairman: W. E. Walters

ASTM Designation: D_____-____

Standard Test Method for ANIONS IN WATER BY ION CHROMATOGRAPHY[1]

This standard is issued under the fixed designation D____; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last approval.

1. Scope

1.1 This method covers the sequential determination of fluoride, chloride, nitrite, phosphate, bromide, nitrite, and sulfate ions in water by ion chromatography.

1.2 This method is applicable to drinking, ground and surface waters, boiler and cooling waters, domestic and industrial wastes, and atmospheric precipitation samples.

1.3 Concentrations as low as 0.1 mg/l can be determined depending upon the anions to be quantitated. Utilizing a 100µl sample volume and a sensitivity of 3µS/cm full scale, the following are approximate detection limits:

---

[1]This method is under the jurisdiction of ASTM Committee D19 on Water. Current edition effective _____,19__.

Anion	Approx. Detection Limit (mg/l)
Fluoride (F^-)	0.1
Chloride (Cl^-)	0.1
Nitrite (NO_2^-)	0.2
Phosphate (PO_4^{-3})	0.1
Bromide (Br^-)	0.2
Nitrate (NO_3^-)	0.2
Sulfate (SO_4^{-2})	0.2

If lower detection levels are required, the sensitivity may be improved by using a lower scale setting (<3μS/cm) or a larger sample injection (>100 μl). The analyst must assure optimum instrument performance to maintain a stable baseline at more sensitive conductivity full scale settings.

1.4 The upper limit of the method is dependent upon total anion concentration and may be determined experimentally as described in Appendix A. These limits may be extended by appropriate dilution.

2. Applicable Documents

2.1 ASTM Standards

D1066 Sampling Steam[2]

D1129 Definitions of Terms Relating to Water[2]

D1192 Specifications for Equipment for Sampling Water and Steam[2]

D1193 Specifications for Reagent Water[2]

D3370 Practices for Sampling Water[2]

E200 Preparation, Standardization, and Storage of Standard Solutions[2]

E260 Standard Recommended Practice for General Gas Chromatography Procedures[3]

E355 Recommended Practice for GC Terms and Relationships[3]

---

[2]Annual Book of ASTM Standards, Part 31.
[3] Annual Book of ASTM Standards, Part 42.

3. Summary of Method

3.1 A filtered aliquot of sample is injected into an ion chromatograph. The sample is pumped through three different ion exchange columns and into a conductivity detector. The first two columns, a precolumn and separator column, are packed with low capacity anion exchanger. Ions are separated based on their affinity for the exchange sites of the resin. The last column is a suppressor column which contains cation exchange resin in the hydrogen form. The suppressor column reduces the background conductivity of the eluent to a low or negligible level and converts the anions in the sample to their corresponding acids. The separated anions in their acid form are measured using an electrical conductivity cell. Anions are identified based on their retention times compared to known standards. Quantitation is accomplished by measuring the peak height or area and comparing it to a calibration curve generated from known standards.

3.2 During the course of analysis, the suppressor column will be slowly consumed and, therefore, will need to be regenerated.

4. Significance

4.1 Ion chromatography provides for both qualitative and quantitative determination of seven common anions - F^-, Cl^-, NO_2^-, PO_4^{-3}, Br^-, NO_3^-, and SO_4^{-2} in the mg/l range from a single analytical operation requiring only a few millilitres of sample and less than 30 minutes for completion.

4.2 Anion combinations, such as $F^-/Cl^-/Br^-$ and NO_2^-/NO_3^- which may be difficult to distinguish by other analytical methods are readily separated by ion chromatography.

5. Terminology

5.1 Definitions

5.1.1 For definition of terms used in this method, refer to Definitions D1129.

5.2 Description of Terms

5.2.1 Ion Chromatography - a form of liquid chromatography in which ionic constituents are separated by ion exchange followed by eluent suppression and electrical conductivity detection.

5.2.2 Eluent - the ionic mobile phase used to transport the sample through the exchange columns.

5.2.3. Resolution - the ability of a column to separate constituents under specified test conditions.

6. Interferences

6.1 Since bromide and nitrate elute very close together, they are potential interferents for each other. It is advisable not to have Br^-/NO_3^- ratios higher than 1:10 or 10:1 if both ions are to be quantitated.

6.2 High levels of organic acids may be present in industrial and domestic wastes which may interfere with inorganic anion analysis. Two common species, formate and acetate, elute between fluoride and chloride.

6.3 As with other types of chromatography, if one of the sample components is present at very high levels, it may interfere by causing a very large peak on the chromatogram which could mask other peaks present. This type of interference is normally minimized by

dilution of the sample (see Appendix A) and in some instances may be corrected if the concentration of that anion is of interest.

6.4 Water from the sample injection will cause a negative peak or dip in the chromatogram when it elutes, because its conductivity is less than that of the suppressed eluent. This dip usually occurs between F^- and Cl^-. Any peak of interest eluting near the water dip must be sufficiently resolved from the dip to be accurately quantitated. Some suggested techniques for elimination of the water dip are described in Appendix C.

7. Apparatus

7.1 Ion Chromatograph[4] - capable of delivering 2-5 ml of eluent per minute at a pressure of 200-700 psi. The chromatograph shall be equipped with an injection valve, a 100 microlitre sample loop, and shall be set up with the following components as schematically illustrated in Figure 1.

7.1.1. Precolumn - column placed before the separator column to protect the separator column from being fouled by particulates or certain organic constituents.

7.1.2 Separator Column - column packed with low capacity pellicular anion exchange resin which is styrene divinylbenzene based which has been found to be suitable for resolving F^-, Cl^-, NO_2^-, PO_4^{-3}, Br^-, NO_3^-, and SO_4^{-2}. See Figure 2.

7.1.3 Suppressor Column - column packed with a high capacity cation exchange resin which is capable of converting the eluent and separated anions to their respective acid forms.

---

[4]Available from Dionex Corp., 1228 Titan Way, Sunnyvale, CA 94086 or equivalent.

7.1.4 Detector - low-volume, flow-through, temperature-compensated, electrical conductivity cell equipped with a meter capable of reading from 0-1000 µS/cm on a linear scale.

7.1.5 Pump - shall deliver a constant flow of approximately 2-5 ml throughout the test and shall tolerate a pressure of 200-700 psi.

7.2 Recorder - compatible with the detector output with a full scale response time in two seconds or less.

7.3 Syringe - minimum capacity of 2 ml and equipped with a male pressure fitting.

7.4 Eluent and Regenerant Reservoirs - suitable containers for storing eluents and regenerant.

7.5 Integrator - It may be desirable to integrate the area under the chromatogram. Different integrators can perform this task when compatible with the electronics of the detector meter or recorder. If an integrator is used, the maximum area measurement must be within the linear range of the integrator.

8. Reagents

8.1 Purity of Water - unless otherwise indicated, references to water shall be understood to mean reagent water conforming to ASTM D1193, Type II. Column life may be extended by passing Type II water through a 0.22 µm filter prior to use.

8.2 Purity of Reagents - reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents

shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.[5] Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

8.3 Eluent - Dissolve 1.0080g of sodium bicarbonate (0.003M $NaHCO_3$) and 1.0176g of sodium carbonate (0.0024M Na_2CO_3) in water and dilute to 4 litres with water.

8.4 Suppressor Regenerant Solution - Cautiously add 111 ml of concentrated H_2SO_4 (sp. gr. 1.84) to approximately 600 ml of water. Cool the solution and dilute to 4 litres with water.

8.5 Stock Solutions

8.5.1 Bromide Stock Solution (1.00 ml=1.00 mg Br^-) - Dry approximately 2g of sodium bromide (NaBr) for 6 hours at 150°C and cool in a desiccator. Dissolve 1.2877g of the dried salt in water and dilute to 1 litre with water.

8.5.2 Chloride Stock Solution (1.00 ml = 1.00 mg Cl^-) Dry sodium chloride (NaCl) for 1 hour at 600°C and cool in a desiccator. Dissolve 1.6484g of the dry salt in water and dilute to 1 litre with water.

---

[5] "Reagent Chemicals, American Chemical Society Specifications", American Chemical Society, Washington, DC For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards" by Joseph Rosin, D. Van Nostrand Co., Inc., New York, NY, and the United States Pharmocopeia.

8.5.3 Fluoride Stock Solution (1.00 ml = 1.00 mg F^-) - Dissolve 2.2100 g of sodium fluoride (NaF) in water and dilute to 1 litre with water. Store in chemical resistant glass or polyethylene.

8.5.4 Nitrate Stock Solution (1.00 ml = 1.00 mg NO_3^-) - Dry approximately 2g of sodium nitrate ($NaNO_3$) at 105°C for 24 hours. Dissolve exactly 1.3707g of the dried salt in water and dilute to 1 litre with water.

8.5.5 Nitrite Stock Solution (1.00 ml = 1.00 mg NO_2^-) - Place approximately 2g of sodium nitrite ($NaNO_2$) in a 125 ml beaker and dry to constant weight (about 24 hours) in a desiccator containing concentrated H_2SO_4 (sp.gr. 1.84). Dissolve 1.4998 g of the dried salt in water and dilute to 1 litre with water. Store in a sterlized glass bottle (Notes 1 and 2). Refrigerate and prepare monthly.

Note 1 - Nitrite is easily oxidized, especially in the presence of moisture, and only fresh reagents are to be used.

Note 2 - Prepare sterile bottles for storing nitrite solutions by heating for 1 hour at 170°C in an air oven.

8.5.6 Phosphate Stock Solution (1.00 ml = 1.00 mg PO_4^{-3}) - Dissolve 1.4330 g of potassium dihydrogen phosphate (KH_2PO_4) in water and dilute to 1 litre with water.

8.5.7 Sulfate Stock Solution (1.00 ml = 1.00 mg SO_4^{-2}) - Dry sodium sulfate (Na_2SO_4) for 1 hour at 105°C and cool in a desiccator. Dissolve 1.4790g of the dried salt in water and dilute to 1 litre with water.

8.6 Anion Working Solutions - Prepare a blank and at least 3 different working solutions containing the following combinations of anions. The combination anion solutions must be prepared in volumetric flasks. See Table I.

TABLE I
Preparation of Standard Solutions for Instrument Calibration

Anion	High Range Standard: ml of each Stk. Sol. (1.00 ml=1.00 mg) Diluted to 1000 ml	High Range Standard: Anion Conc mg/l	Intermediate Range Std. (mg/l) (See 8.3.1)	Low Range Std. (mg/l) (See 8.3.2)
Fluoride (F^-)	10	10	1.0	0.2
Chloride (Cl^-)	10	10	1.0	0.2
Nitrite (NO_2^-)	20	20	2.0	0.4
Phosphate (PO_3^{-3})	50	50	5.0	1.0
Bromide (Br^-)	10	10	1.0	0.2
Nitrate (NO_3^-)	30	30	3.0	0.6
Sulfate (SO_4^{-2})	100	100	10.0	2.0

8.6.1 Prepare a high range standard solution by diluting the volumes of each anion specified in Table I together to 1 litre with water.

8.6.2 Prepare the Intermediate Range Standard Solution by diluting 10.0 ml of the High Range Standard Solution (See Table I) to 100 ml with water.

8.6.3 Prepare the Low Range Standard Solution by diluting 20.0 ml of the Intermediate Range Standard Solution (See Table I) to 100 ml with water.

9. Precaution

9.1 This standard may involve the use of hazardous materials, operations and equipment. It is the responsibility of whoever uses this standard to establish appropriate safety practices and to determine the applicability of regulatory limitations prior to use.

10. Sampling

10.1 Collect the sample in accordance with the applicable method D1066, D1192, and D3370.

10.2 Samples should be analyzed as soon as possible after collection. Preservation by refrigeration at 4°C is preferred.

10.3 Samples containing particulates must be filtered through a prewashed 0.22 µm filter prior to analysis to avoid fouling or clogging the resin columns.

11. Calibration

11.1 Determination of Retention Times

11.1.1 The retention time for each anion is determined by injecting a standard solution containing only the anion of interest and noting the time required for a peak to appear on the chromatogram. Retention times vary with operating conditions are influenced by the concentration of ion(s) present. Prepare separate standard solutions according to Table II by transferring by pipet the designated aliquots of stock solutions prepared in Section 8 (8.4-8.11) into separate one litre volumetric flasks.

TABLE II
Preparation of Standard Solutions for Determination of Retention Times

Stock Solution (1 ml=1.00 mg)	Vol. in ml of Stock Solution per litre of water	Anion Concentration, mg/l
Fluoride	3	3
Chloride	4	4
Nitrite	10	10
Phosphate	50	50
Bromide	10	10
Nitrate	30	30
Sulfate	50	50

Analyze each standard of interest as defined in paragraph 12. Note the time in minutes for each peak to appear on the chromatogram.

11.1.2 Concentrations other than those listed in Table II may be used if they better approximate concentrations expected in the samples. Those concentrations listed will give about mid-scale response with a 1 volt recorder input and a conductivity meter full scale setting of 10 µS/cm.

11.1.3 Although retention times may vary from one column to another and are influenced by such factors as temperature and element (8.3) flow rates, the elution order of the anions is always as follows when using the standard $CO_3^{=}/HCO_3^{-}$ eluent:

F^{-}, Cl^{-}, NO_2^{-}, PO_4^{-3}, Br^{-}, NO_3^{-}, SO_4^{-2}

11.2 Analyze the blank and each of the prepared calibration solutions described in paragraph 8.6 according to the defined procedure (see paragraph 12).

Note 3 - If the concentrations of the sample ions of interest are known or estimated, the concentration of standard solutions prepared for instrument calibration may be varied to better approximate or bracket the concentration range of interest. Anions of no interest may be omitted.

Note 4 - The intermediate range combination anion standard (see 8.6) may be used to verify resolution of all seven anions.

Note 5 - Each analytical curve should be established using only one scale setting. Changing the scale setting may result in a slight change in the slope of the analytical curve.

11.3 Prepare analytical curves for each anion of interest by plotting on linear graph paper peak height or peak area versus the nominal concentration of the anion standard solution.

12. Procedure

12.1 Set up the ion chromatograph according to the manufacturer's instructions. See Appendix B for information concerning possible configurations for instrument set-up.

Note 6 - The detector ranges are variable. Normal operating ranges are from 3 to 100 μS/cm full scale. The range setting required for analysis will depend on the concentration of anions in the sample and should be chosen accordingly.

12.2 Equilibrate the system by pumping eluent through all three columns until a stable baseline is obtained (approximately 15 to 20 minutes). This equilibration can normally be accomplished while the samples and standards are being prepared.

12.3 Set up the instrument as directed by the manufacturer. Load 2-3 ml of sample into the sample entry port using a syringe (see note 7). Inject the sample into the eluent stream and record the ion chromatogram (refer to Fig. 2).

Note 7 - Most plastic disposable syringes, if used, come in packages that are labeled "sterile", but sterile does not necessarily imply clean of anions; and therefore, all syringes should be flushed with water and sample or standard before use to minimize contamination.

12.4 The anion suppressor column will become partially exhausted. Regenerated the suppressor with Suppressor Regenerant Solution (8.3) according to the manufacturers instructions.

13. Calcuations

13.1 Refer the peak height or area noted for the anion(s) of interest to the appropriate analytical curve(s) (see paragraph 11.3) to determine the anion concentration mg/l.

Anion Concentration, mg/l = A x F

where A = mg/l read from appropriate calibration curve

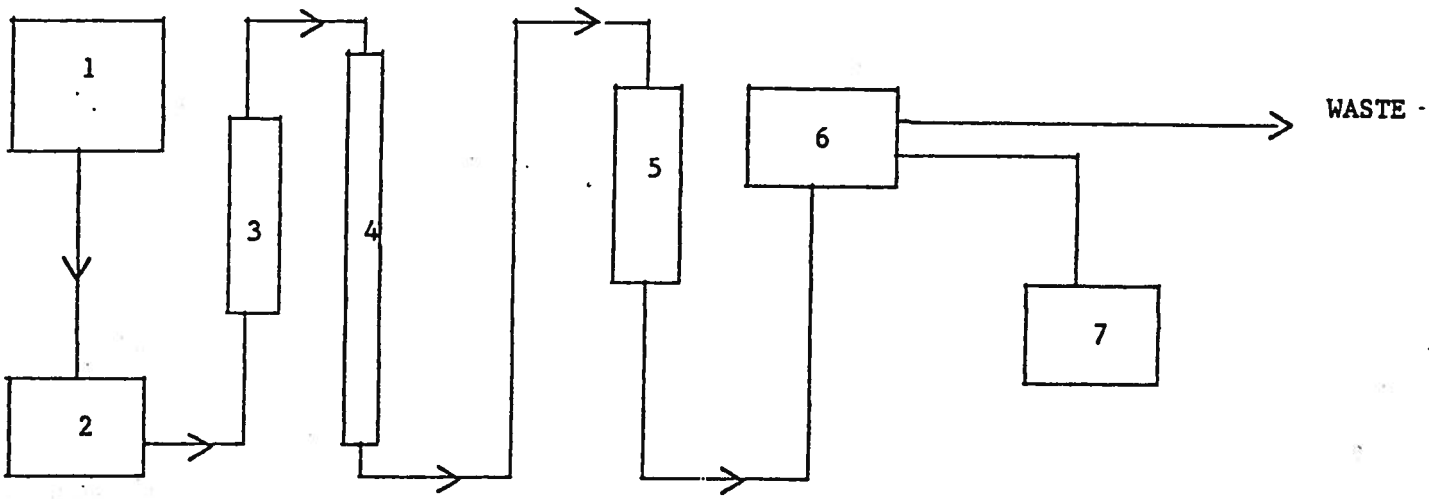
F = dilution factor if sample was diluted prior to analysis

14. Precision and Accuracy

14.1 The precision of this method will be determined in accordance with D2777.

Figure 1

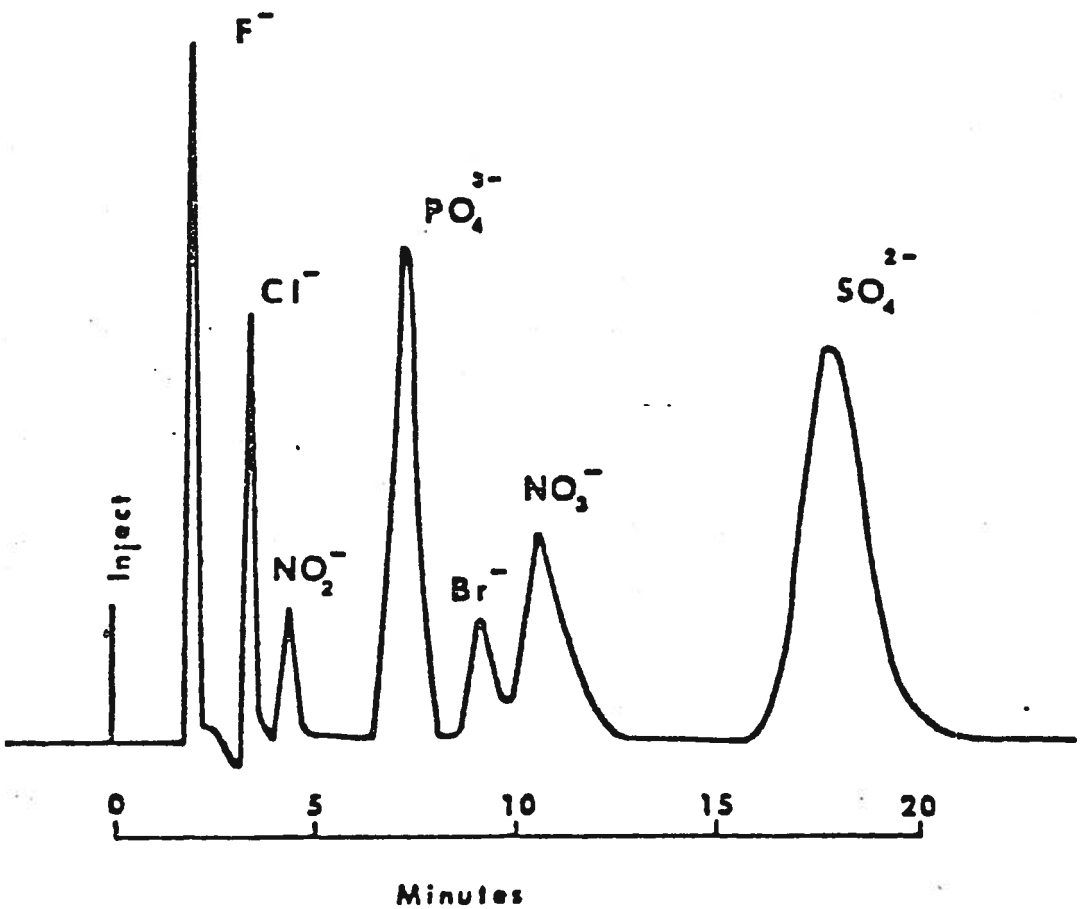
Schemetic of Ion Chromatograph



1. Eluent Reservoir
2. Pump
3. Precolumn
4. Separator Column
5. Suppressor Column
6. Detector
7. Recorder and/or Integrator

Figure 2

Typical Anion Profile



REFERENCES

(1) Small, H., Stevens, T. S., and Bauman, W. C., "Novel Ion Exchange Chromatographic Method Using Conductimetric Detection," Anal. Chem. 47, 1801 (1975).

(2) Stevens, T. S., Turkelson, V. T., and Alve, W. R., "Determination of Anions in Boiler Blow Down Water with Ion Chromatography," Anal. Chem. 49 1176 (1977).

(3) Sawicki, E., Mulik, J. D., and Wittgenstein, E., Eds., Ion Chromatographic Analysis of Environmental Pollutants, Ann Arbor Science Publishers, Ann Arbor, MI, 1978.

(4) Mulik, J. D. and Sawicki, E., Eds., Ion Chromatographic Analysis of Environmental Pollutants, Vol. No. 2, Ann Arbor Science Publishers, Ann Arbor, MI, 1979.

APPENDIX A

DETERMINATION OF RANGE OF METHOD

The upper range of the method for an injected aliquot varies for each sample type and is limited by the capacity of the separator column. If the ionic strength of the sample to be analyzed exceeds column capacity, the ions of interest will not be separated as shown in Figure 2. Retention times will also decrease as the ionic strength of the sample increases. The upper range of the method for the ion(s) of interest in the sample matrix may be determined by the following procedure. The procedure is defined for currently available separator columns supplied by the appropriate manufacturer.

(1) Bypass the separator column (only the suppressor column is on line) and inject 100 µl of a 5.8 l (0.01 meq) solution of sodium chloride (NaCl). This represents 10% of the separator column capacity which is 0.1 meq. Note the conductivity response.

(2) Inject 100 µl of the sample of interest (separator column bypassed). Note the conductivity response.

(3) If the conductivity response noted in Step (2) is less than or equal to the conductivity response noted in the sodium chloride solution in Step (1), column capacity has not been exceeded.

(4) If the conductivity response noted in Step (2) is greater than the conductivity response noted for the sodium chloride solution in Step (1), the test sample must be diluted prior to injection into the ion chromatograph.

APPENDIX B

CONFIGURATIONS FOR SETTING UP AN ION CHROMATOGRAPH

Table III lists various configurations for setting up an ion chromatograph. Choice of configuration depends primarily upon which ions are of interest. Configurations other than those listed may be used if they successfully resolve all anions of interest, as described in paragraph 7 of the Method D .

TABLE III

PreColumn	Separator Column	Suppressor Column[A]	Flow Rate	Comment
1) 4x50mm[B]	4x250 mm[C]	4x100 mm[D] or 9x100 mm[E]	2.3 ml/min.	Best resolution of all 7 anions
2) 4x50mm[B]	4x250 mm[C]	4x100 mm[D] or 9x100 mm[E]	4.6 ml/min.	Will resolve 6 anions, in about 1/2 time of (1) but will not resolve NO_3^- and Br^-
3) 4x50mm[B]	4x50 mm[C]	4x100 mm[D] or 9x100 mm[E]	2.3 ml/min.	Will resolve NO_3^- and SO_4^- only
4) 4x50mm[B]	4x50 mm[C]	4x100 mm[D] or 9x100 mm[E]	4.6 ml/min.	Will resolve SO_4^- only.

[A] In all cases, either suppressor column is suitable. The 4x100 mm will give a smaller water-dip, but the 9x100 mm will last longer between regenerations.

[B] Dionex Part #30825 or equivalent.

[C] Dionex Part #30827 or equivalent.

[D] Dionex Part #30829 or equivalent.

[E] Dionex Part #30828 or equivalent.

APPENDIX C

A method of eliminating the water dip is to introduce concentrations of carbonate and bicarbonate into the sample which closely approximate that of the eluent used for analysis. Adjustment of sample background may be accomplished in two different ways:

1. Dilute the sample with eluent if sample dilution is required prior to analysis.
2. Add an equivalent of 1.0 ml of a prepared eluent concentrate (solution which is 100 times more concentrated than the eluent used for analysis) per 100 ml of sample.

Standard solutions must be prepared as directed in Step 2 above. It is important to prepare a blank using reagent water and eluent (100:1) to compensate for any anionic impurities present.

1. Tennessee

615 - 741 - 3931 OR 741 - 2220

Have not dealt with it

2. South Carolina

803 - 758 - 5406

Have not dealt with it

3. Texas

512 - 451 - 5711

Mr. Jimmy Randall, Permit Section, Eng.

He has dealt with Army regarding the burning of broken ammunitions boxes which have been preserved with 5% or 20g of pcp per box. They request permission to incinerate them by trench burning. He denied them a permit.

Los Alamos National Laboratory

Los Alamos, New Mexico

Mr. Lee Bourdin

* Mr Harry Stretz

phone: 505 - 667 - 5061

Have a report coming out will send a copy between Mid January

and the first of February.

4. Oregon

503 - 229 - 5696

Mr. Fuller

Call back if can find any information on it.

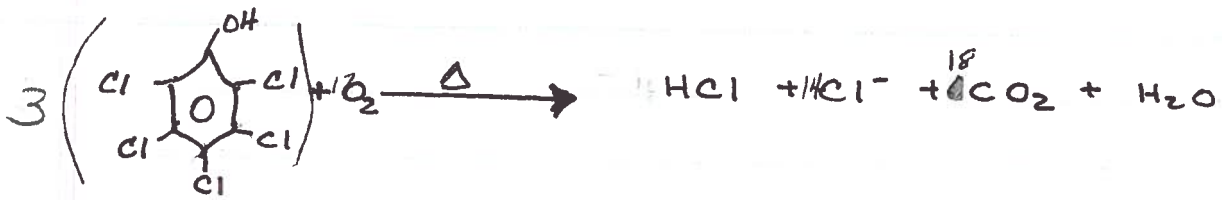
5. Washington

206 - 459 - 6000

(Henry F.)

Mr. Hank Droege

Will call back if can find any information on it.



Pentachlorophenol

Cl = 5(35.5) =	177.5
H = 1(1) =	1.0
O = 16 =	16.0
C = 6(12) =	72.0
	266.5 lb/mole

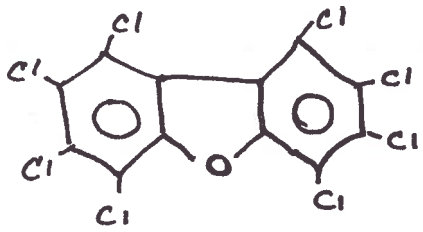




$$\frac{100\ \text{lb PCP}}{\text{hr}}\left(\frac{1\ \text{mole PCP}}{266.5\ \text{lb}}\right)\left(\frac{14\ \text{moles Cl}^-}{3\ \text{mole PCP}}\right)\left(\frac{35.5\ \text{lb}}{1\ \text{mole Cl}^-}\right)$$

$$= 62.2\ \frac{\text{lb}}{\text{hr}} \quad \text{OR} \quad 272.3\ \text{TPY}$$

$$.0036 \frac{lb}{hr} \left(8760 \frac{hr}{yr}\right)\left(\frac{1 Ton}{2000 lb}\right) =$$



Chlorinated
di: benzofuran

furan 

Questions:

1. Contradiction

1 Test pentachlorophenol } ONE Report
2nd Test Cresote

2nd Report!!

30 lb/hr penta + 70 lb/hr creosote
Plus 7000 lb/hr bark

Will this mean 30 lb/hr + 7000 bark AND Sometimes 70 lb/hr Creosote + Bark
Will this be consistant

How will this feed rate be measured?

Test Free Chlorine Cl_2^- 1

Permit Expires Dec. 1, 1982

POHC ?

10% penta 90% Creosote

In stack opacity moniter

State of Mississippi
Air Pollution Control

PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Koppers Company, Inc.
Tie Plant,
Mississippi

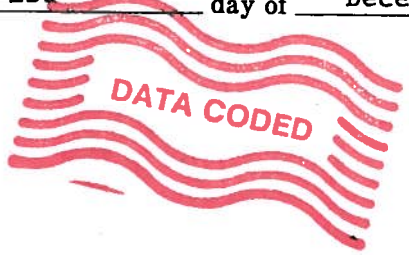
has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et seq.,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

Issued this 11th day of December, 19 79

AIR AND WATER POLLUTION CONTROL PERMIT BOARD

Executive Director

Expires 1st day of December, 19 82.



Permit No. 0960-00012

APC 3-78

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilites is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Air and Water Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Air and Water Pollution Control Commission shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Air and Water Pollution Control Commission declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Air and Water Pollution Control Commission and the Mississippi Air and Water Pollution Control Permit Board and/or their authorized representatives, upon the 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 emission.

8. 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 required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Air and Water Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and 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 Air and Water Pollution Control Commission.

11. 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.

12. 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.

13. This permit is non-transferable.

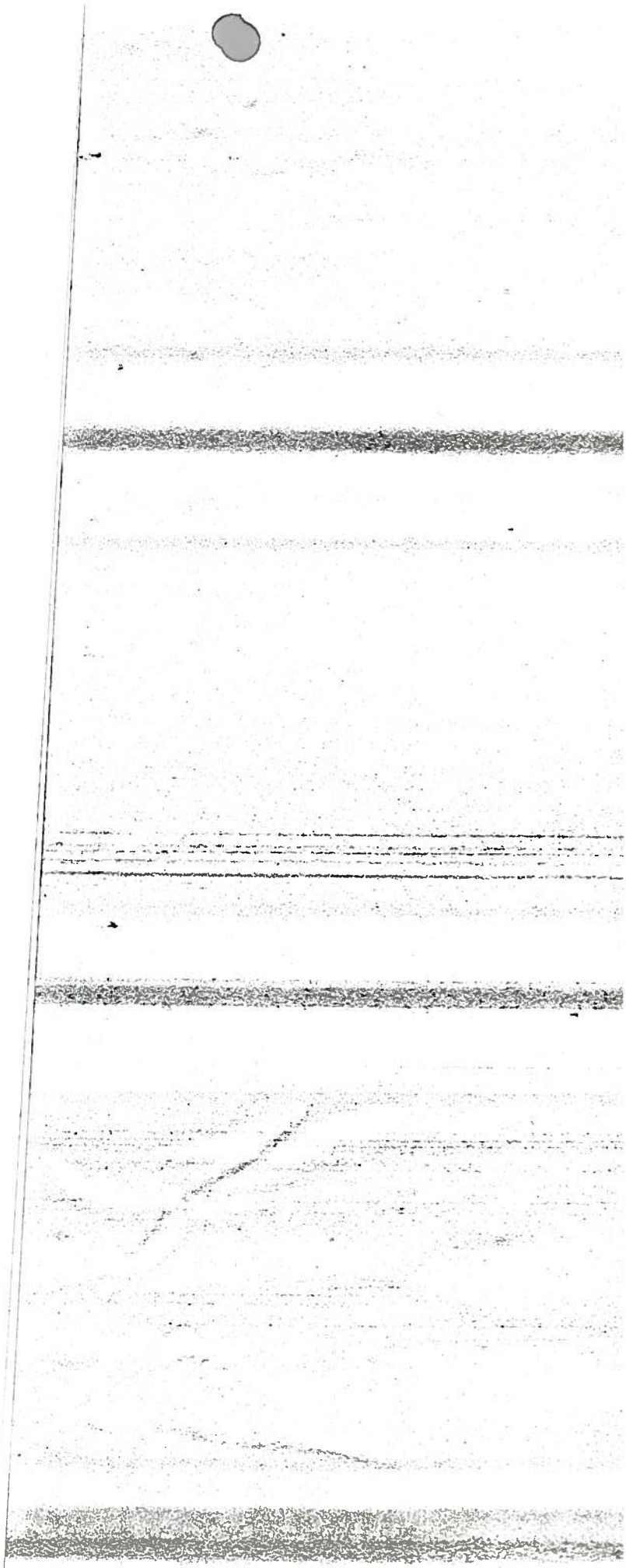
14. This permit is for air pollution control purposed only.

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning December 11, 1979, and lasting until December 1, 1982, the permittee is authorized to operate air emissions equipment and emit air contaminants from wood preserving facility.

Such air emissions equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.

ART III
QUIREMENTS



Koppers Co., Inc.
130-0960-00012
Grenada County

Don Watts
Nov. 28, 1979

The above facility has applied for renewal of their operating permit. A test was required on the new woodwaste boiler before a permit would be issued.

On Oct. 3, 1979, a test was performed by Environmental Protection Systems, Inc. The results of the test show an average emission of 0.0970 grains/dscf or 8.64 lbs/hr. This is well within allowable limits of 0.30 grains/dscf.

Therefore, I recommend the PTO be reissued.

I reviewed the stack test. My review is attached. It appears in order, and the reported figures can be used in emissions data.

Particulate Test Calculation Review (Method 5)

		RUN 1	RUN 2	RUN 3
T_s	: Avg. stack temp; °R	810	815	819
T_m	: Avg. meter temp; °R	546	559	570
ΔH	: Avg. orifice pressure drop; in. H_2O	1.04	1.06	1.05
Y	: Dry gas meter calibration factor; dimensionless	1.01	1.01	1.01
P_{bar}	: Barometric pressure; in. Hg	30.11	30.11	30.11
V_m	: Sample volume (volume metered) at meter conditions; ft^3	31.589	32.311	32.303
V_{mstd}	: Dry gas volume, corrected to std. conditions; dscf $= V_m Y (T_{std}/T_m)[(P_{bar} + (\Delta H/13.6))/P_{std}]$ (correct for leak if leak rate exceeds allowable) See Meth. 5, 6.3, if applicable	31.128	31.100	30.492
V_{lc}	: Vol. of water collected; ml	32.4	42.8	40.5
V_{wstd}	: Vol. of water vapor at std. conditions; scf $= (V_{lc})(.00267)(T_{std}/P_{std})$	1.53	2.02	1.908
B_{ws}	: Moisture content; dimensionless $(V_{wstd}) / (V_{mstd} + V_{wstd})$	0.047	.061	.059
$1 - B_{ws}$	: Dry gas fraction	0.953	.939	.941
C_p	: Pitot tube coefficient; dimensionless check for proper design or calibration (see 4.1.3 Meth. 2)	.83	.83	.83
$(\sqrt{\Delta P})$ avg:	Average square root of ΔP $(\Sigma\sqrt{\Delta P})/n$ [where n = no. of points]	.604	.610	.606
P_s	: Stack pressure; in. Hg $= P_{bar}$ + static pressure (in. Hg)	30.11	30.11	30.11
M_d	: Dry molecular wt. of stack gas; lb/lb mole $= 29.0$ or $(\%\ CO_2)(.44) + (\%\ O_2)(.32) + (\%\ N_2 + CO)(.28)$	30.44	30.60	30.46
M_s	: Wet molecular wt. of stack gas; lb/lb mol $= (M_d)(1 - B_{ws}) + 18B_{ws}$	29.86	29.83	29.72
V_s	: Avg. stack gas velocity; ft/sec. $= (85.49)(C_p)(\sqrt{\Delta P})$ avg. $\sqrt{T_s/(P_s M_s)}$	40.68	41.23	41.14
Q_s	: Volumetric flow rate; dscf/hr $3600\ (1 - B_{ws})(V_s)(A)(T_{std}/T_s)(P_s/P_{std})$	628,971.8	624,269.3	621,172.7
W_a	: Acetone wash blank; mg See Meth. 5 6.6 and 6.7 if applicable	0	0	0
M_n	: Particulate sample wt.; mg filter, wash, blank correction	204.5	1852	1932
C_s	: Particulate concentration; grains/dscf $= (0.0154\ gr/mg)(M_n/V_{mstd})$	.10117	.09171	.09758
Conversion to appropriate units: $\left(\frac{gr}{dscf}\right)\left(\frac{1\ \#}{7000\ gr}\right)(Q_s\ \frac{scf}{hr})$		9.091	8.179	8.659
I	: Isokimetic variation: $= \frac{100\ T_s\ [(.002669)(V_{lc}) + (V_m/T_m)(P_{bar} + \Delta H/13.6)]}{60\ 0\ V_s\ P_s\ A_n}$	98.74	99.42	97.96

MISSISSIPPI AIR & WATER POLLUTION CONTROL COMMISSION
VISIBLE EMISSIONS EVALUATION RECORD
DATE: Oct. 3, 1979

PLANT NAME: KOPPERS Co., INC.
ADDRESS: P.O. Box 160 (Tie Plant)
CITY: Grenada
EMISSION POINT: Wood Waste Boiler
RECEIVED BY: Donald O'Bell

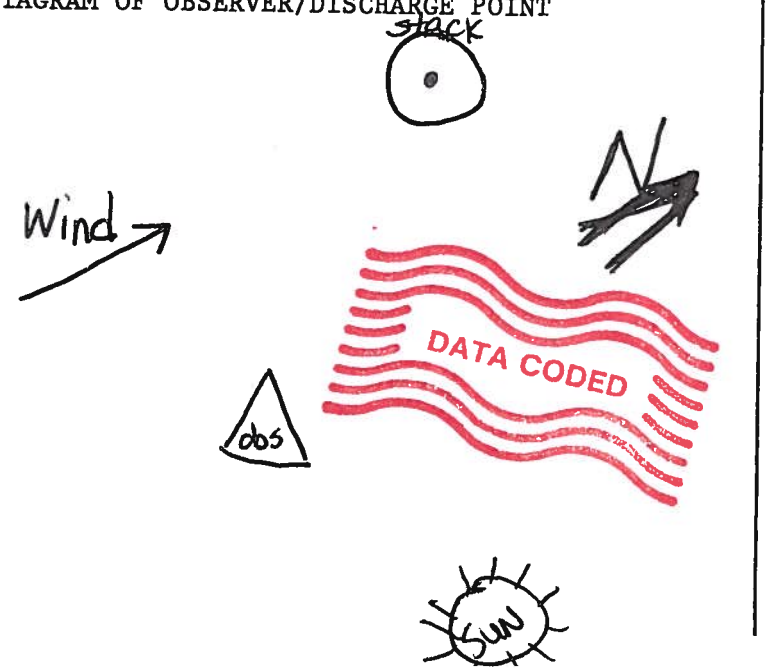
V.E. OBSERVER: DON WATTS
V.E. CERTIFICATION NO.: PC 37
CERTIFICATION EXPIRATION: 3/30/80

	INITIAL	FINAL
DISTANCE TO DISCHARGE	95 ft	95 ft
DIRECTION TO DISCHARGE	West	West
HEIGHT OF OBSERVATION POINT	ground level 0 ft	
HEIGHT OF DISCHARGE	42 ft	42 ft
PLUME COLOR	white	white
PLUME BACKGROUND	blue sky	blue sky
WATER VAPOR IN PLUME?	NO	NO
WIND DIRECTION	South- South East	
WIND SPEED	~10 mph	~10 mph
AMBIENT TEMPERATURE	75° F	75° F
DISCHARGE TEMPERATURE	370° F	370° F
SKY CONDITIONS	Clear	clear

SET NO.	TIME		OPACITY	
	START	END	SUM	AVERAGE
1	10:52	10:58	265	11.04%
2	10:58	11:04	250	10.42%
3	11:04	11:10	255	10.63%

MIN.*	SECONDS* 0	15	30	45
0	10	15	10	15
1	15	15	10	10
2	10	10	10	10
3	10	10	10	10
4	5	10	10	10
5	10	15	15	10
0	15	10	10	10
1	10	15	10	10
2	10	10	10	5
3	5	10	10	10
4	10	15	10	15
5	10	10	10	10
0	15	10	10	10
1	10	10	10	10
2	10	15	10	10
3	10	10	10	10
4	10	10	10	10
5	15	10	10	10

DIAGRAM OF OBSERVER/DISCHARGE POINT



REMARKS: Boiler running at ~~about~~ 90-100% of capacity. No upsets or soot blowing.

*IF READING TIME INTERVAL NOT AS SHOWN, SPECIFY IN REMARKS

State of Mississippi
Air and Water Pollution Control Commission

PERMIT

To Construct Air Emissions Equipment

This Certifies That

Koppers Company
Tie Plant
Mississippi

has been granted permission to construct Air Emissions Equipment in connection with the operation of the plant or process New woodwaste boiler and associated woodwaste handling equipment

Construction of such equipment shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

Issued this 3rd day of January, 19 78.

AIR AND WATER POLLUTION CONTROL COMMISSION

Executive Director

Expires 3rd day of January, 19 79.

Facility No. 0960-00012-000

No. 1546

MPC FORM

PUBLIC NOTICE

Mississippi Air and Water Pollution
Control Permit Board
P. O. Box 827
Jackson, Mississippi 39205
(601/354-2550)

Public Notice No. 77A-MS-008

NOTICE OF APPLICATION FOR APPROVAL TO CONSTRUCT

Koppers Company, Inc., located in Tie Plant, Mississippi, proposes to add a woodwaste boiler and associated mechanical woodwaste handling equipment to the existing plant equipment for the purpose of producing steam for use in the wood treating process. The applicant currently has operations on site and holds Operating Permit No. 130-0960-00012. The applicant's operation falls generally under Standard Industrial Classification Code 2491. (This facility is also known as Koppers Company, Inc., Grenada plant.)

On the basis of preliminary staff review and application of the Mississippi Air and Water Pollution Control Law (Sections 49-17-1 et seq., Mississippi Code of 1972), and other lawful standards and regulations, the Mississippi Air and Water Pollution Control Permit Board proposes to issue an approval to construct subject to specific emission limitations and special conditions. These proposed determinations are tentative.

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the Permit Board address above, no later than January 2, 1978. All comments received prior to that date will be considered in the formulation of final determinations regarding the application. The facility number should be placed on the envelope next to the above address and also at the top of the first page of comments. A public hearing may be held where the Permit Board finds a significant degree of public interest in a proposed permit or group of permits.

A fact sheet containing additional details about the application and the proposed determinations and additional information on hearing procedure is available by writing or calling the Commission. The fact sheet and comments received are available for review and copying on the 11th floor of the Robert E. Lee Office Building, Jackson, Mississippi, between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday.

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

November 30, 1977

FACT SHEET

APPLICATION FOR

Facility No. 130-0960-00012 Date: November 17, 1977

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

Koppers Company, Inc.
Box 160
Grenada, Mississippi 38960

b. Description of Applicant's Operation (Proposed New Construction)

Installation of a woodwaste boiler system and associated mechanical woodwaste handling equipment.

c. Description of Air Pollution Abatement Facilities

Air pollution abatement will be accomplished by both the design of the boiler firebox as well as an integral dry mechanical flyash collection system.

d. Description of Emissions (as reported by applicant)

Particulate matter emissions from the boiler will not exceed 0.1 grains per standard dry cubic foot of flue gas. This is equivalent to about 11.6 pounds per hour at nominal operation.

2. EMISSION LIMITATIONS

The maximum allowable emission rate for the woodwaste boiler is 0.3 grains per standard dry cubic foot of flue gas as specified in Regulation APC-S-1, Section 3.4(b). This unit must also comply with the opacity limitations specified in Regulation APC-S-1, Sections 3.1 and 3.2.

3. MONITORING REQUIREMENTS

None

4. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EMISSION LIMITATIONS

Not Applicable

5. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE EMISSIONS

None

6. AIR QUALITY STANDARDS AND EMISSION STANDARDS APPLIED

National Ambient Air Quality Standards (Secondary)

(a) 60 micrograms per cubic meter - annual geometric mean - total suspended particulate.

(b) 150 micrograms per cubic meter - maximum 24-hour concentration not to be exceeded more than once per year - total suspended particulate.

State Emission Standard

0.3 grains per standard dry cubic foot of flue gas.

7. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Mississippi Air and Water Pollution Control Permit Board proposes to issue a Construction Permit to this applicant subject to the emission limitations and special conditions outlined above. These determinations are tentative.

Interested persons are invited to submit written comments on the permit application or on the Permit Board's proposed determinations to the following address:

Mississippi Air and Water
Pollution Control Permit Board
P. O. Box 827
Jackson, Mississippi 39205

All comments received prior to January 2, 1978 will be considered in the formulation of final determinations with regard to this application.

b. Public Hearing

The Permit Board may hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits.

Public notice of such a hearing will be circulated in newspapers in the geographical area of the applicant's facility at least thirty days prior to the hearing.

Following the public hearing, the Permit Board may make such modifications in the terms and conditions of the proposed permits as may be appropriate and shall issue or deny the permit. Notice of issuance of denial will be circulated to those who participated in the hearing and to other appropriate persons who request such notification.

c. Issuance of the Permit when no public hearing is held.

If no public hearing is held, and, after review of the comments received, the Permit Board's determinations are substantially unchanged, the permit will issue and become effective immediately.

If no public hearing is held, but there have been substantial changes, public notice of the Permit Board's revised determinations will be made. Following a 30-day comment period, the permit will issue and become effective immediately, unless a public hearing is granted.

SUMMARY OF REVIEW

KOPPERS COMPANY

130-0960-00012

PROPOSED WOOD-WASTE BOILER.

WBA

11/8/7

The design of this boiler is somewhat unique; however the design appears capable of preventing loss of unburned wood particles so compliance will be determined by the units ability to combust &/or collect carbon (soot) & other condensable wood-derived materials.

The boiler has the capability to be a major source i.e. potential emissions of > 100 tons/year; however, since permitting will not be resolved until well after the FY-78 major source list is established, I suggest we consider the facility as major on an in-house basis only.

The boiler's allowable emission rate is in excess of 100 tons/yr. (based on Kopper's stated operational data & 0.3 grain/SDCF emission limit); therefore it is subject to NSR review procedures.

Based on EPA's latest interpretation of the Clean Air Act this source is not subject to PSD. Also since the unit does not have fossil fuel capability of 250 MMBTUH, NSPS does not apply.

Modeling results show virtually no ambient impact. Since the unit is designed to meet 0.1 grains/SDCF, there should be no violation of emission regs or A.Q stds once the boiler is operative.

Action: Recommend [redacted] const. permit for public notice to Permit Board.

Koppers Co.
Proposed wood waste boiler.

11/7/77
WBA

Additional info rec'd 10/31/77 states avg boiler capacity @ 50% for 7200 hr/yr. At this rate total fuel burned is 21,840 tons/yr.

If increase input to continuous operation, fuel requirement would be:

$$21480 \frac{\text{tons}}{\text{yr}} \times \frac{8736 \text{ hr/yr}}{7200 \text{ hr/yr}} = 26,062 \frac{\text{tons}}{\text{yr}}.$$

If increase capacity factor to 100% for 7200 hours per year, fuel requirement would be:

$$21480 \frac{\text{tons}}{\text{yr}} \times \frac{1}{0.5} = 42,960 \frac{\text{tons}}{\text{yr}}.$$

If increase both capacity & hours.

$$21480 \times \frac{8736}{7200} \times \frac{1}{0.5} = 52,124 \frac{\text{ton}}{\text{yr}}.$$

At max. capacity & hours, calc potential
if assume 25 #/ton from AP-42

$$52124 \frac{\text{tons}}{\text{yr}} \times 25 \frac{\#}{\text{ton}} \times \frac{1 \text{ ton}}{2000 \#} = 652 \frac{\text{tons}}{\text{yr}}.$$

if assume 5#/TON

$$652 \times \frac{5}{25} = 130.4.$$

WBA
②
11/7/77

Calculate allowable emission rate per year.

@ Koppers stated conditions will emit 41.8 tons/yr at 0.1 gr/sdcf .°.

$$41.8 \frac{\text{tons}}{\text{yr}} \times \frac{0.3 \text{ gr}}{0.1 \text{ gr.}} = 125.4 \frac{\text{tons.}}{\text{yr}}$$

@ continuous operating conditions:

$$125.4 \times \frac{8736}{7200} = 152.2 \frac{\text{tons}}{\text{yr}}$$

@ max capacity & continuous operation:

$$152.2 \times \frac{1}{0.5} = 304.4$$

(assuming gas rate doubles for a doubling of average fuel rate)

ANNUAL FUEL USE: AVERAGE !

(1) $$W = \left(\frac{30{,}000\ lbs_S}{hr}\right)\left(\frac{1250\ BTU}{lbs_S}\right)\left(\frac{7200\ hrs}{yr}\right)\left(\frac{1\ lb_{fu}}{4500\ BTU}\right)\left(\frac{1\ TON_W}{2000\ lb_W}\right)\left(\frac{1}{.687}\right)(.5)$$

$$W = \boxed{21{,}840\ \frac{TONS}{yr}}\ \text{wet wood}$$

NOTE: THIS ASSUMES

1. STEAM IS 150 PSIG, 100°F SUPERHEAT, $t = 466°F$, $h_g = 1250$ BTU/LB
2. 300 DAY/YR AVERAGE OPERATING SCHEDULE
3. BOILER EFFICIENCY IS 68.7%
4. BOILER AVERAGE CAPACITY FACTOR IS 50%.
5. BOILER FUEL HEATING VALUE IS 4500 $\frac{BTU}{LB}$

(2) PARTICULATE EMISSION LOADING:

MAX GAS FLOW AT INLET TO COLLECTOR

FLOW = 26,800 CFM @ 550°F

A) $$\therefore \frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2} \quad \text{i.e.} \quad \frac{26{,}800\ \frac{ft^3}{min}}{990°R} = \frac{X}{520°R} = 13{,}535.4\ SCFM$$

B) $$(13{,}535\ SCFM)\left(\frac{.1\ GR}{SCF}\right)\left(\frac{1\ LB}{7000\ GR}\right)\left(\frac{1\ TON}{2000\ LBS}\right)\left(\frac{60\ min}{hr}\right)\left(\frac{24\ hrs}{DAY}\right)\left(\frac{300\ DAYS}{yr.}\right) = \boxed{41.8\ \frac{TONS}{YR}}$$

ALL INFORMATION HEREON IS THE EXCLUSIVE PROPERTY OF KOPPERS COMPANY, INC. FOREST PRODUCTS DIVISION

Koppers Co. 10/20/77
Grenada WFA
130-0960-00012-000

Preliminary calculations on proposed wood waste boiler.

Boiler is 37.5×10^6 BTUH on hogged wood waste only (no fossil fuel)

Maximum fuel rate is ~~5.95 tons/hr.~~

@ 4500 BTU/# dry yields 53.6×10^6 BTU/HR.

% overload factor

$$\frac{53.6}{37.5} = 1.43$$

@ 37.5×10^6 BTUH, fuel rate would be

$$\frac{37.5 \times 10^6 \text{ BTUH}}{4500 \text{ BTU/\#}} \times \frac{1 \text{ TON}}{2000 \#} = 4.2 \frac{\text{TONS}}{\text{hr.}}$$

fuel per year = 21,840 tons/yr.

hours operation @ design capacity

$$\frac{21840 \text{ ton/YR}}{4.2 \text{ ton/hr}} = 5200 \frac{\text{hr}}{\text{YR}} \approx 24 \frac{\text{H}}{\text{D}} \times 7 \frac{\text{D}}{\text{W}} \times 31 \frac{\text{wks.}}{\text{YR.}}$$

load factor $\frac{5200 \text{ hr/yr}}{8736 \text{ hr/yr}} = 0.595 \approx 0.6$

hours operation @ max capacity

$$\frac{21840}{5.95} = 3670 \frac{\text{hr}}{\text{YR}} \approx 24 \frac{\text{H}}{\text{D}} \times 7 \frac{\text{D}}{\text{W}} \times 22 \frac{\text{WK}}{\text{YR.}}$$

10/20/77
WBH

Operating schedule lists 24/7/50 normal and 24/7/52 peak ∴ boiler must be operated continuously NEEDS CLARIFICATION !!

Calculate emissions data

Operating rate	Estimated emissions		Allowable emission		Potential Emission @ 25 #/TON		→ @ 5 #/ton	
	#/HR	TON/YR	#/HR	TON/YR	#/HR	TON/YR	#/HR	TON/Y
Case 1	12.43	32.3	37.29	97	105	273	21	54.
Case 2.	12.43	54.3	37.29	163	105	460	21	92
Case 3	17.6	76.9	52.8	230	149	650	29.8	130

Stack gas flow

$$50 \frac{\text{feet}}{\text{sec}} \times \frac{\pi (3\,\text{FT})^2}{4} \times 60 \frac{\text{sec}}{\text{min}} = 21200 \text{ acfm @ } 300^\circ\text{F}$$

or $21200 \text{ acfm} \times \frac{520^\circ\text{R}}{760^\circ\text{R}} = 14500 \text{ scfm @ std } 60^\circ\text{F per APC-S-1}$

since don't know moisture have to assume zero for calc.

CALCULATIONS OF DATA ON PAGE 2

10/20/77
WBA

Case 1

21,840 $\frac{\text{TONS}}{\text{YR}}$ @ 37.5×10^6 $\frac{\text{BTU}}{\text{HR}}$ rate, i.e. 5200 $\frac{\text{HR}}{\text{YR}}$

actual @ 0.1 grain / SDCF

$$0.1 \frac{\text{gr}}{\text{SCF}} \times 14500 \frac{\text{scf}}{\text{min}} \times \frac{1\#}{7000 \text{gr}} \times 60 \frac{\text{min}}{\text{hr}} = 12.43 \frac{\#}{\text{hr}}$$

$$12.43 \frac{\#}{\text{HR}} \times 5200 \frac{\text{HR}}{\text{YR}} = 64,636 \frac{\#}{\text{YR}} \Rightarrow 32.3 \frac{\text{TONS}}{\text{YR}}$$

allowable @ 0.3 gr/SDCF

$$0.3 \times 14500 \times \frac{1}{7000} \times 60 = 37.29 \frac{\#}{\text{HR}}$$

$$37.29 \frac{\#}{\text{HR}} \times 5200 = 193,908 \Rightarrow 97.0 \frac{\text{TON}}{\text{YR}}$$

potential @ 25 #/TON FROM AP-42

$$4.2 \frac{\text{TON}}{\text{HR}} \times 25 \frac{\#}{\text{TON}} = 105 \#/\text{HR}$$

$$105 \times 5200 = 546,000 \frac{\#}{\text{YR}} \Rightarrow 273 \frac{\text{TON}}{\text{YR}}$$

Case 2

4.2 TONS/HR (37.5×10^6 BTU/H) @ 8736 HR/YR

actual

$$0.1 \times 14500 \times \frac{1}{7000} \times 60 = 12.43 \frac{\#}{\text{HR}}$$

$$12.43 \times 8736 = 108,590 \frac{\#}{\text{YR}} \Rightarrow 54.3 \frac{\text{TON}}{\text{YR}}$$

10/20/77

UBA

allowable

$0.3 \times 14500 \times \frac{1}{7000} \times 60 = 37.29 \frac{\#}{HR.}$

$37.29 \times 8736 = 325,765 \frac{\#}{YR} \Rightarrow 163 \frac{TON}{YR}$

potential

$4.2 \times 25 = 105 \frac{\#}{HR}$

$105 \times 8736 = 917,280 \frac{\#}{YR} \Rightarrow 460 \frac{TON}{YR}$

Case 3

5.95 TON/HR (max firing rate) @ 8736 HR/YR

adjust stack gas volume by factor of 5.95/4.2

$14,500 \times \frac{5.95}{4.2} = 20540$ scfm

actual

$0.1 \times 20540 \times \frac{1}{7000} \times 60 = 17.60 \frac{\#}{HR.}$

$17.6 \times 8736 = 153,754 \frac{\#}{YR} \Rightarrow 76.9 \frac{TON}{YR}$

allowable

$0.3 \times 20540 \times \frac{1}{7000} \times 60 = 52.80 \frac{\#}{HR}$

$52.8 \times 8736 = 461,261 \Rightarrow 230 \frac{TON}{YR}$

potential

$5.95 \times 25 = 149$ #/HR

$149 \times 8736 = 1,301,664 \Rightarrow 650$ TPY

WASTE CALC

10/20/77

WBR

$(4.2)(4500) = X(8000)$

$X = \frac{(4.2)(4500)}{8000}$

$X = 2.36$ TPH is combustible

4.20

− 2.36

1.84 TPH IS MOIST. & ASH

ASH IS SUPPOSEDLY 1.0% OF TOTAL

$(4.2)(0.01) = 0.042$ TPH ASH

1.840

− .042

1.798 → 1.8 TPH IS MOIST.

$1.8 \frac{T}{H} H_2O \times 2000 \frac{\#}{TON} \times \frac{359 SFT^3}{18\#} \times \frac{760°R}{492°R} = 110{,}910$ ACFH

↓

~ 1850 ACFM @ 300°F

STACK DATA YIELDS 21200 ACFM TOTAL GAS @ 300°F

% MOIST. % = $\frac{1850}{21200} \times 100 = 8.7\%$ FROM INCOMING MOISTURE

10/20/

ESTIMATE MOISTURE FROM PROD. OF COMBUSTION

ASSUME WASTE WILL HAVE A CARBON-HYDROGEN RATIO EQUIVALENT TO CELLULOSE – $C_6H_{10}O_5$

$$C_6H_{10}O_5 + 6O_2 \rightarrow 6CO_2 + 5H_2O$$

ON A WT. BASIS

$C_6 = 6 \times 12 = 72$

$H_{10} = 10 \times 1 = 10$

$O_5 = 5 \times 16 = 80$

162

$C_6H_{10}O_5 \triangleq 5H_2O$

$H_{10}O_5 \triangleq 5H_2O$

$H \triangleq H$

$$W/W\ H = \frac{10}{162} = 0.062$$

USING DATA CALC. ON COMBUSTIBLE PORTION OF WASTE:

2.36 TPH IS COMBUSTIBLE

$\therefore$ $2.36 \times 0.062 = 0.146$ TPH IS HYDROGEN

$H \triangleq \frac{1}{2} H_2O$

$H_2 \triangleq 1 H_2O$

$$0.146 \frac{\text{TON}}{\text{HR}} H_2 \times \frac{18\ T H_2O}{2\ T H_2} = 1.31 \frac{\text{TON}}{\text{HR}} H_2O$$

$$1.31 \frac{\text{TON}}{\text{HR}} \times \frac{359\ \text{FT}^3}{18\#} \times \frac{2000\#}{\text{TON}} \times \frac{760^\circ R}{492^\circ R} = 80{,}718 \frac{\text{ACF}}{\text{HR}}$$

$\downarrow\downarrow$

1345 ACFM

10/20/77

WBA

°o TOTAL THEORETICAL MOISTURE IS

1850
+ 1345
3195 ACFM

℄ MOIST % = $\frac{3195}{21200} \times 100 = 15.1\%$

CORRECTING GRAIN LOADING

$$0.1 \text{ GR/SCF} \times \frac{21200 \text{ SCF}}{(21200-3195) \text{ SDCF}} = \frac{(0.1)(21,200)}{18005}$$

$$= 0.12 \frac{\text{GR}}{\text{SDCF}}$$

10/21/77

WEA

CALC THEDRETICAL STACK GAS

Wood requires ~ 7.15 # air / 10,000 BTU (@ 0% xs) PERRY'S HNDBK

@ 37.5×10^6 BTU/HR RATE

$$\frac{7.15 \text{ \# air}}{10^4 \text{ BTU}} \times \frac{37.5 \times 10^6 \text{ BTU}}{\text{HR}} = 26812 \frac{\text{\# air}}{\text{HR}} \approx 447 \frac{\text{\#}}{\text{MIN}}$$

converting to actual stack conditions

$$447 \frac{\text{\# air}}{\text{min}} \times \frac{359 \text{ SFT}^3}{29 \text{\#}} \times \frac{760^\circ R}{492^\circ R} = 8548 \text{ ACFM}$$

WOOD ITSELF

$$4.2 \frac{\text{TON}}{\text{HR}} \times \frac{0.99 \text{ \# combustable}}{1 \text{ \# total}} \times \frac{2000 \text{\#}}{\text{TON}} = 8316 \frac{\text{\# combustable}}{\text{hr.}}$$

Assume mol. wt = cellulose = 162 #/MOLE

$$\therefore \quad 8316 \frac{\text{\#}}{\text{HR}} \times \frac{359 \text{ SFT}^3}{162 \text{\#}} \times \frac{760^\circ R}{492^\circ R} = 28467 \frac{\text{ACF}}{\text{HR}} \Rightarrow 474 \text{ ACFM}$$

TOTAL = 8548 + 474 = 9022 ACFM

PREVIOUSLY CALC FLUE GAS RATE @ 300°F IS 21,200 ACFM

∴ DIFFERENCE IS 21,200 - 9022 = 12178 ACFM

10/21/77

WBA

FROM THIS

$$\text{EXCESS AIR \%} = \frac{\text{EXCESS GAS}}{\text{AIR REQUIRED}} \times 100 =$$

$$= \frac{12178}{8548} \times 100 = 142\%$$

RECEIVED
SEP - 9 1977
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

RESUBMITTED
10/20/77
to WBA

STATE OF MISSISSIPPI

AIR AND WATER POLLUTION CONTROL COMMISSION

AIR DIVISION

P.O. Box 827

JACKSON, MISSISSIPPI 39205

APPLICATION FOR PERMIT

THIS SPACE FOR OFFICE USE ONLY.

APPLICATION FOR:

EXISTING FACILITY

RENEWAL OF PERMIT TO OPERATE

APPROVAL TO CONSTRUCT

GENERAL INSTRUCTIONS FOR ALL APPLICANTS:

1. The majority of this form must be completed by all applicants; specific instructions regarding type of permit applied for are given where needed.

2. For applications on Permit to Operate renewals, separate forms must be completed for each defined process, emission point, etc., previously holding a distinct and separate Permit to Operate.

INSTRUCTIONS

NOTE: ALL THIS INFORMATION MUST BE PROVIDED.

1. Name of Facility - give the name of the plant, mill, factory or business for which this application is made.

2. Location of Facility - give street, road or highway, address and UTM or Lat-Long. of facility.

4. Name of Owner - give name of person(s) or corporation which has day-to-day responsibility for ownership of facility.

6. In-plant person to be contacted on pollution matters- give the name of an individual who is usually at the facility who is responsible for knowing about pollution matters.

7-8. Corporate Address - to be filled in for Mississippi facilities with main offices at locations other than that of facility listed in Nos. 1,2, & 3. If none, so indicate.

10. Major Activity - define type of operation and products, show Standard Industrial Classification Number.

11. Operating Schedule - must be provided as stated. If additional description of sporadic operation is needed, attach a sheet of explanation.

FOR ALL APPLICANTS:

This application is made under and in full accord with the provisions of Chapter 238, Mississippi Laws of 1966.

1. Name of Facility - factory, mill, plant, etc. -	Telephone
Koppers Company, Inc. Grenada Plant	601-226-4584

2. Location of Facility	Town	County
Tie Plant	Grenada	

3. Mailing address of Facility	City	Zip
P. O. Box 160	Grenada	38960

4. Name of Owner	Telephone
Koppers Company, Inc.	412-391-3300

5. Mailing address of Owner	City	Zip
Koppers Building	Pittsburgh, PA	15219

6. In-plant person to be contacted on pollution matters	Title
Ray Ohlis	Plant Manager

7. Does facility have a corporate or main office elsewhere? X Yes ___ No

8. If yes, complete corporate name and mailing address City State Zip

Koppers Company, Inc., Koppers Building, Pittsburgh, PA 15219

9. Correspondence to be sent to (1) 4 6 8 above.
(circle one)

10. Major activity of facility: Wood Preserving

Type of operation and products: Railroad Ties, Lumber

S.I.C. Number: 2491

11. Operating Schedule

	Hours per day	Days per week	Weeks per year
Normal	24	5	50
Seasonal or peak operation period	24	7	52

FOR EXISTING FACILITIES AND RENEWAL OF PERMIT TO OPERATE ONLY:

Facility Permit Status (permits regarding air emissions only)

What permits are presently held by facility: (list)

TYPE PERMIT	EXPIRATION DATE	FACILITY NO.	PROCESS OR EQUIPMENT PERMITTED
Operating	1980	209-24-00-00097	2-00 Facility

FOR EXISING FACILITY PERMIT RENEWAL ONLY: (NOT APPLICABLE)

Please answer all the following:

1. Has the facility been modified in any way (including fuel and/or raw material changes) during period covered by the Operating Permit _____Yes ____No

2. If No. 1 is yes, was modification made in accordance with permit requirements specified in Regulation APC-S-2?
   ____Yes ____No ____If no, explain _____

   _____

   _____

   _____

3. Have the emission rates from the facility been tested within the last 6 months? _____Yes _____No

   If yes, please attach a copy of the stack test report(s).

   NOTE: If no stack emissions test has been made, you may be required to have one performed and submitted in order to prove compliance with emission regulations.

4. Is this facility still operating at the location given in previous applications? ____Yes ____No

5. If No. 4 is no, complete the following:

New location: _____

_____

New Mailing Address: _____

_____

Was a request for approval to move made for this new location? ____Yes ____No

Was approval granted? _____Yes ____No

FOR ALL APPLICANTS, WHETHER NEW CONSTRUCTION, EXISTING FACILITY, OR RENEWAL

Control Equipment covered under this application-Please check all applicable and indicate number of units

PARTICULATE EMISSIONS CONTROL EQUIPMENT

1. Cyclone(s)_____
2. Water Scrubber_____
3. Baghouse_____
4. Electrostatic Precipitator_____
5. Venturi Scrubber_____
6. Cyclonic Baghouse_____
7. Cyclonic Scrubber_____
8. Other Multi-Clone, 60 each 8 inch tubes

GASEOUS EMISSIONS CONTROL EQUIPMENT

1. Water Scrubber_____
2. Activated Carbon Bed_____
3. Other _____

WASTE DISPOSAL SYSTEMS

1. Solid Waste Incinerator_____
2. Liquid Waste Incinerator_____
3. Wood or other waste fuel recovery boiler X
4. Gaseous Waste Flare_____
5. Liquid Waste Flare_____
6. Other _____

Pneumatic Conveying System NO

Other (please describe)

FOR ALL APPLICANTS

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

This form has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment. Reasons should be given explaining any data not filled in.

Page 1

1. Fill in company name and address, plus year for which data is given (if existing facility) at top of page. Use data for most recent calendar year available.

2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc., and use the same reference number on each of the three pages to identify information for the same unit.

3. Manufacturer and Model Number. Nameplate date for boiler, furnace, kiln, etc. Waste gas flares should also be included on this form and stationary internal combustion engines over 3000 horsepower.

4. Rated Capacity in Millions of BTU per hour.

5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.

6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.

7. Heat Usage. Percent of heat used for process and percent for space heating.

Page 2

8. Reference Number. Continue reference numbers from Page 1, using same number to identify information for same unit.

9. Stack Parameters.
   Stack Height in feet from ground.
   Stack Inside Exit Diameter in feet.
   Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used.)
   Exit Gas Gemperature in degrees F.

10. Fuel Data
    Fuel Type. Coal, Gas, #2 Oil, #6 Oil, etc.
    Maximum Capacity burned per hour. Gallons, pounds, cubic feet, etc. Specify. Average amount burned per year. Gallons, Tons, Million cubic feet, etc. Specify. Heat Content of Fuel. BTU per Gallon, pound cubic foot, etc., Specify.
    Average Percent Sulfur Content.

Average Percent Ash Content.
(If percent sulfur and percent ash are not known, list fuel type and supplier's name at bottom of page in spaces provided so that information may be obtained.)

Page 3

11. Reference Number. Use same numbers as on Page 1 and 2 to identify information for same unit.

12. Air Pollution Control Equipment.
Manufacturer and Model Number. Information from nameplate. Type. Use Table 1, Page 16. If a wet scrubber, specify gallons per minute of water flow and water pressure if known. Efficiency. Percent design control on pollutants and actual percent control if known.

13. Emission Rates.
Specify tons per year of each of the listed pollutants emitted per year.
Give basis of estimates of pollutants emitted (Material Balance, Stack Tests, Emission Factors, etc.)
(If unit is a kiln or similar unit in which combustion products and process losses vent through a common stack, emissions may be totaled and listed under process losses).

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 FACILITY NAME	Address	for Agency use Only
Grenada Plant	Tie Plant, Mississippi	

FACILITY NUMBER	Information for Calender Year	Date
W/F/B 0/1/ / / / /	1977	9-12-77

2	3	4	5	6	7	
Reference Number	Manufacturer and Model Number	Rated Capacity 10^6BTU/hr	Type of Burner Unit (use code 1*)	Usage (use code 2*)	Most Usage % Process	% Space heat
WFB 01	Wellons/Nebraska	37.5	1	1	100	

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FUEL BURNING EQUIPMENT

(FOR AGENCY USE ONLY)

Reference Number	Stack Parameters				Fuel Type	Fuel Data				
	Stack Height Feet	Inside Exit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature Degree F.		Maximum Amount Per Hour (Specify Units)	Amount Per Year (Specify Units)	Heat Content BTU/Gal, etc. (Specify Units)	Percent Sulfur	Percent Ash
WFB 01	41	3'	50	300	Hogged wood waste fuel	5.95 tons/hr.	21,840 tons/yr.	4500 BTU/lb.	0	1.0

FUEL SUPPLIERS:

Fuel Type	Supplier
Pine, Sawmill Waste	Koppers, Durant, MS
Pine, Sawmill Waste	Koppers, Louisville, MS
Pine, Sawmill Waste	Koppers, Grenada, MS
Pine, Sawmill Waste	Hankins Lmbr., Grenada, MS

(FOR AGENCY USE ONLY)

FUEL BURNING EQUIPMENT

11	12				13			
Reference Number	Air Pollution Control Equipment: Manufacturer and Model Number	Type* (Use Table 1)	Efficiency: Design	Efficiency: Actual	Emissions (Tons/Year): Particulate	Emissions (Tons/Year): So_2	Emissions (Tons/Year): Other (specify)	Basis of Estimate
WFB 01	Wellons, Inc.	32 & 31	90%	90%	0.1 grain/SCFM	0	Particulate 41.8	Calculated & Guaranteed by Mfr.

*For Wet Scrubber give Gallons per minute Water Flow and Water Pressure if known.

FOR ALL APPLICANTS

MANUFACTURING PROCESS OPERATIONS

Page 1

1. Company Name and Address, plus year for which information is given (if existing facility) at top of page. Use data for must recent calendar year available.

2. Reference Number. Use an identifying number for each manufacturing process which emits matter to the air and use the same number on all three pages of this form to identify information for the same operation.

3. Process or Unit Operation Name. Identify the unit or process section for which information is given by name.

4. Rates Process Capacity. Give in tons per hour the maximum rated capacity of the process or unit identified, wet weight.

5. Feed Input. Process rate in wet tons per hour and wet tons per year of materials fed to the operation.

6. Number of Emissions Points to Air. Number of stacks, vents, etc., which emit materials to air.

7. Product Output. Product rate in wet tons per hour and wet tons per year from the operation.

Page 2

8. Reference Number. Use same number as on Page 1 of form to identify information for same process or operation.

9. Stack Data (or outlet of air cleaning device)
   Stack Height in feet above groung.
   Stack Inside Diameter in Feet.
   Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used)
   Exit Gas Temperature in degrees F.

10. Air Pollution Control Equipment.
    Manufacturer and Model Number. Nameplate Data.
    Type. Use Table 1, Page 16. If a wet scrubber, give water flow in GPM and water pressure.
    Collection efficiency. Design and actual collection efficiency if known.

11. Reference Number. Use same number as on Pages 1 & 2 of form to identify information for same process or operation.

12. Process Emissions. Give in pounds per hour and tons per year the amount of emissions from the process or operation of each of the two pollutant categories so that process rates versus emission rates may be compared with Regulations. Identify the units of measure used.
Give the basis of the estimates of pollutants emitted (stack tests, Material Balance, emission factors, ect.)

MANUFACTURING PROCESS OPERATIONS

Company Name	Address	FOR AGENCY USE
Koppers Company, Inc. Forest Products Division	P. O. Box 160 Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calendar Year	Date
209-24-00-000972-00 / / / / / / / / / / / /	19 77	9-12-77

Reference Number	Process or Unit Operation Name	Rated Process Capacity Tons/Hour	Feed Input		Number of Emission Points To Air	Product Output*	
			Quantity Per Hour	Quantity Per Year		Quantity Per Hour	Quantity Per Year
1	Wood Preserving	24		4 Million C.F. of wood products 4 Millon gallons of preservative	Storage Tanks		4 Million C.F. of wood produc

*Specify Units of Measure Used

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

Reference Number	Stack Data				Air Pollution Control Equipment			
	Height Feet	Inside Unit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature °F	Manufacturer and Model Number	Type* (use Table 1)	Collection Efficiency	
							Design	Actual
1	NONE							

*For Wet Scrubbers Give Gallons per minute Water Flow and Water Pressure if known.

MANUFACTURING PROCESS OPERATIONS

(FOR AGENCY USE ONLY)

11 12

Reference Number	Process Emissions*			Basis for Estimation	(Agency Comments Only)
	Particulates	Sulfur Oxides	Others (Specify by chemical composition)		
1	25.6 tons of	fugitive emissions		API	
	from storage	tank breathing and		storage tank	
	filling			Breathing & Filling losses	
	Creosote vapors.				
	No. 2 oil				

*Please Express Emissions as Tons per Year and Pounds per Hour and Identify Units Being Used.

FOR ALL APPLICANTS

REFUSE DISPOSAL AND INCINERATION

A. Company Name & Address plus year for which information is given if for renewal of permit, at top of page.

B. Type Waste. Describe type of waste materials (paper, garbage, wood crates, sawdust, coal refuse, etc.)

C. Maximum amount per day in pounds.

D. Average amount per year in tons.

D. Method of Disposal. Use codes at bottom of Form (1*).

INCINERATION

1. Type of Incinerator. Check which applies.

2. Manufacturer, Model Number, Capacity in Pounds per Hour and type waste on which Capacity is based (Nameplate Data).

3. Average Quantity Burned in Pounds per Year.

4. Operating Schedule for Incinerator. Hours per Day and Days per Year incinerator is in operation.

5. Auxiliary Fuel Date.
   Type. (Natural Gas, #2 Oil, etc.)
   Amount per year. Specify Gallons, Cubic Foot, etc.
   Heat Content of Fuel. BTU per Gallon, Cubic Foot, etc.
   Percent Sulfur. Average Sulfur Content of Auxiliary Fuel.
   Percent Ash. Average Ash Content of Auxiliary Fuel.
   Fuel Supplier's Name if Ash and Sulfur Content are not known.

6. Pollution Control Eqipment on Incinerator.
   Manufacturer of Control Device.
   Model Number of control Device.
   Percent efficiency of Control if known.
   Type. Venturi Scrubber, Baghouse, etc. as outlined on other forms.
   GPM Water Flow if Control Device is a Wet Scrubber.

7. Stack Data.
   Height in Feet above Ground.
   Inside Exit Diameter in Feet.
   Exit Gas Velocity in Feet per Second.
   Exit Gas Volume if Velocity not known.
   Exit Gas Temperature in Degrees F if known.

8. Estimated Emission from Refuse Incineration. Give amounts in tons per year and basis of estimates for each of the five listed pollutants.

REFUSE DISPOSAL AND INCINERATION

A

Company Name	Information for Year	(Agency Use Only)
Koppers Company, Inc. Forest Products Division	1977	
Address	**Date**	
P. O. Box 160 Tie Plant, MS 38960	9-12-77	

B — Description of Waste Materials

Type (Describe)	C Maximum Amount Per Day (Pounds)	D Amount Per Year (Tons)	E Method of Disposal 1*
Pine Sawdust & Bark	60,000	7,500	5

If Waste Disposal is by Incineration, Specify the Following:

1. Type of Incinerator:

(NOT APPLICABLE)

- single chamber ☐
- multiple Chamber ☐
- Modified (describe) ☐
- Other (describe) ☐
- Rotary ☐
- Flue Fed ☐

2. Manufacturer's Name: _____
   Model Number _____
   Rated Capacity _____ Pounds / Hour _____ Type Waste
3. Quantity Burned: _____ Pounds / Day
   _____ Tons / Year
4. Operating Schedule _____ Hours / Day
   _____ Days / Year

*1 Disposal Method Codes

1. Open Burning
2. Landfill (No Burning)
3. Incinerator (Complete rest of Form)
4. Conical Burner (TeePee)
5. Burned in Boiler or Furnance
6. Other (Specify)

(AGENCY USE ONLY)

(NOT APPLICABLE)

5. Auxiliary Fuel:
   - Type _____
   - Amount/Year (Specify Units) _____
   - Heat Content _____
   - Percent Sulfur _____
   - Percent Ash _____
   - Supplier's Name _____

6. Pollution Control Equipment:
   - Manufacturer _____
   - Model Number _____
   - % Efficiency _____
   - Type _____
   - GPM Water Flow (If Wet Scrubber) _____

7. Stack Data:
   - Height _____ Feet
   - Inside Exit Diameter _____ Feet
   - Exit Gas Velocity _____ Feet/Sec.
   - Exit Gas Volume _____ SCFM
   - Exit Gas Temp. _____ $^{o}F.$

8. Estimated Emissions From Refuse Incineration:

Name:			Basis of Estimates:
Particulates	_____	Tons/Year	_____
Sulfur Oxides	_____	"	_____

ADDITIONAL INFORMATION REQUIRED FOR APPROVAL TO CONSTRUCT.

The following additional information must be submitted. Failure to submit any of the additional information or to conform to the instructions will result in initial denial of the application.

1. Site Plan – The drawing or sketch submitted must be to scale and show at least the following:

   A. The property involved and outlines and heights of all buildings. Identify property lines plainly.

   B. Location and identification of all existing or proposed points of discharge of air contaminant to the atmosphere.

   C. Location of streets and all adjacent properties. Show location of all buildings outside the property that are within 150 feet of the equipment involved in the application. Identify all such buildings (as a residence, apartment, warehouse, etc.), specifying number of stories. Indicate north, and prevailing wind direction.

II. Drawings of Equipment (See Note Below) - Supply an assembly drawing, dimensioned and to scale, in plan, elevation and as many sections as are needed to show clearly the design and operation of the equipment and the means by which air contaminants are controlled. The following must be shown:

   A. Size and shape of equipment. Show exterior and interior dimensions and features.

   B. Locations, sizes, and shape details of all features which may affect the production, collection, conveying or control of air contaminants of any kind; location, size and shape details concerning all materials handling equipment.

   C. All data and calculations used in selecting or designing the equipment.

   D. Horsepower rating of all motors driving the equipment.

   NOTE. Structural design calculations and details are not required.

ADDITIONAL INFORMATION MAY BE REQUIRED.

III. Description of Process and Control Equipment - The application must be accompanied by two copies of a written description of each process to be carried out in the facility and the function of the equipment used in the process. The descriptions must be complete and particular attention must be given to explaining all stages in the process where the discharge of any materials might contribute in any way to air pollution. Control procedures must be described insufficient detail to show the extent of control of air contaminants anticipated in the design, specifying the expected efficiency of the control devices. All obtainable data must be supplied concerning the nature, volumes, particle size, weights, chemical composition and concentrations of all types of air contaminants.

IV. Two copies of a block flow diagram showing the steps of the process and the flow of materials through the process and any control devices must be supplied.

NOTE: The application form, site plan, and equipment must be signed and stamped by an engineer registered in the State of Mississippi.

ADDITIONAL INFORMATION

I. Two copies of construction site plot plan.

II. Two copies of detailed equipment drawings.

III. Two copies of a detailed explanation of the process and control equipment.

IV. Two copies of a flow diagram of the process or operation showing control devices.

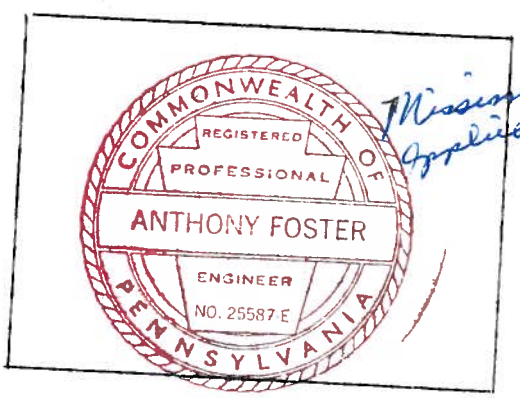
SIGNATURES: If for construction, the application must be submitted in duplicate and both copies signed and stamped by an engineer registered in the State of Mississippi, and signed by a duly authorized legal representative of the company who accepts the responsibility for the application. If for Existing Facility or Renewal of Permit to Operate, registered engineer's signature not required. All signatures and stamps must be originals on all copies, not photocopies.

Anthony Foster
Signature of Engineer registered in Mississippi

Thomas A. Marr
Signature of person accepting responsibility for this application.

Anthony Foster
Typed name and Mississippi Registration Number

Thomas A. Marr
Typed Name



Mississippi registration Applied for

Seal of Engineer Registered in Mississippi

CALLED BRD. OF REGIST. 10/21/77 - 10 13 AM
THEY CONFIRMED APPL FOR REGISTRATION REC'D.

TABLE 1

CODE NUMBERS FOR CONTROL DEVICES

Vapor Control Equipment

00 Group – CONTROL BY COMBUSTION

01 catalytic combustion
02 furnace combustion
03 boiler firebox
04 steam injection flare
05 venturi flare
06 direct flame combustion (afterburner)

10 Group – ADSORBERS

10 activated carbon – nonregenerative
11 activated carbon – regenerative
12 silica gel – nonregenerative
13 silica gel – regenerative
14 lithium chloride
15 activated alumina
16 activated bauxite

20 Goup – ABSORBERS

20 sieve plate tower
21 bubble-cap tower
22 packed tower

Particulate Matter – Liquid Mist Control Equipment

30 Group – DRY SEPARATORS AND FILTERS

30 simple cyclones
31 high efficiency cyclones
32 settling chamber
33 simple filters
34 baghouse (shaking)
35 baghouse (reverse jet)
36 dry collector (dynamic)

40 Group – WET COLLECTORS

40 spray chamber – no baffles
41 spray chamber – with baffles
42 wet cyclones – rotoclone
43 wet dynamic precipitator
44 venturi scrubber
45 spray tower (not absorption – scrubbers)
46 packed tower (not absorption – scrubbers)
47 condensors (tube and shell); air
48 barometric condensor with hot wells

50 Group – ELECTRICAL PRECIPITATORS

50 single stage
51 double stage
52 precipitron

60 Group

60 Counteractant

70 Group – SPECIAL

71 Jet exhausters (air dilution)
72 Mist eliminators

80 Group – Other
Specify

WOOD WASTE BOILER COMPLEX

GRENADA, MISSISSIPPI

DESCRIPTION

The boiler plant proposed for Grenada, Mississippi, is to be an entirely new facility specifically designed to utilize locally produced wood waste as fuel. It will generate process steam and electrical power for the Grenada plant. The boiler plant will be designed for automatic, unattended firing. It will include all appropriate electronic controls, interlocks, and safety circuits to accomplish this. It will meet all ASME codes; FIA requirements; local, state and federal requirements pertaining to the facility. The boiler plant will utilize a new shop assembled, Nebraska water-tube boiler, specifically designed for solid fuel firing. The wood waste combustion system will be selected to reflect the latest "state-of-the-art" of wood waste combustion system designs on the market today. This system will provide a very wide range of firing rates that will allow it to perform satisfactorily throughout the extreme load changes that this treating plant imposes upon the boiler. The air pollution control system proposed for this boiler plant will be a low maintenance, simple dry mechanical fly-ash separation system that will be well within the requirements of the State of Mississippi. The electrical generation system will consist of a used steam

turbine generator set, supplying 750 KW of electrical power for use throughout the entire plant. It is sized to supply the entire electrical load of the plant, but will most likely be operated one shift per day during our peak electrical load periods.

WOOD WASTE HANDLING SYSTEM

The wood waste handling system will provide facilities to mechanically unload inbound trucks of purchased wood waste material and also material brought from remote portions of our plant. Seventy-two hours of storage capability will be provided. The storage bin unloading, conveying, metering and firing systems for this wood waste fuel will be completely automatic and will not require any personnel in attendance.

WELLONS CYCLO-BLAST FIRING

FURNACE OPERATION

The Wellons Cyclo-Blast Firing System utilizes the best features of the older "dutch oven" and the modern "suspension" burning. The dutch oven can fire an extreme variation in fuel, but is very difficult to control automatically. Suspension burning is very controllable if the fuel is consistent, but has the disadvantage that the ash from the fuel fired in suspension is also carried in suspension and very difficult to remove from the gas stream in compliance with the emission standards of the air pollution regulations.

Combustion takes place in a vertical refractory tube. The furnace shell has an air space between refractory tube and shell. This space carries the preheated air for combustion to the grates and tuyeres in the cell lining. Two seals between the shell and tube divide the space into 3 zones, each controlled by separate damper, giving a primary, secondary and tertiary air supply. The lowest section has vertical and horizontal water-cooled grates; the second section has 30 to 50 tuyeres holes in the lining; the top section has two blast tuyeres. A small continuous amount of fuel is fed into the side of the cell. The major portion of the fuel forms a small pile on the bottom. The high temperature of the refractory tube plus a very low draft in the bottom of the cell gasifies the wood and as the gas rises into the center section of the cell, the high pressure tuyeres in the middle section cause rapid combustion.

Wood ash varies from .1% to 3%, depending on species and product and slags at generally low temperature (1700°F. - 2500°F.).

Therefore, in most instances, a wet wall is developed on the cell lining. Fine ash from the small wood particles is trapped and slagged on the wet surface of the cell. This slag runs to the bottom of the cell and is chilled by water-cooled grates. Since a good portion of the ash and dirt is captured in the cell, far less material is placed in transit to the boiler stack and stack emissions are substantially reduced. Grate cleaning is manual and can be accomplished in a matter of minutes. Procedure is: 1) allow the small fuel pile to burn down; 2) rake ash from bottom and side grates out clean-out door; 3) close ash door and start fuel feed. Refractory will re-ignite pile. In most cases, only a momentary steam pressure drop occurs during cell cleaning.

Metered fuel is fed by an inclined helicoid conveyor. This keeps the trough full and reduces the uncontrolled air in the system to a minimum. The helicoid feeds into a refractory chute that deposits the fuel into the cell in the middle of the second zone. The tangential tuyeres cause a cyclonic action so fine material caught in suspension will have a relatively long dwelling time in the hottest part of the cell. The coarse particles will fall to the bottom and be gasified. (See Drawing 1-B-2192 for typical section through Cyclo-Blast Cell.)

CONTROL SYSTEM

A pressure signal is received from the steam drum. This signal is translated into a control air pressure signal by a Hagen

pneumatic controller. The firing rate of the boiler is increased or decreased according to the signal pressure.

This is not much different than most pneumatic combustion control systems; however, a time control orifice is added to slow the control reaction time as wood fuel does not have as rapid heat response as gas, oil or powdered coal. The Wellons Cyclo-Blast Cell does have a more rapid heat response than a dutch oven firing because the fuel pile encased in the refractory tube will respond to the forced draft almost immediately. The rate of destructive distillation or wood gasification follows the forced draft.

The normal control response time from low to high firing in common combustion control systems is 30 seconds, and the boiler can be put on the line in a very short time. With the Wellons wood firing system, it takes an hour to heat the boiler and setting, and control time from low to high firing is approximately 2 minutes. With dryer fuel, the response time is shorter as there is a smaller pile and consequently faster reactions. Under normal demand fluctuations of steam pressure can be held within 5% of control pressure setting.

The control pressure signal actuates a Hagen Positioner that is linked to the forced draft dampers. This linkage is adjustable to obtain the proper relationship between the dampers of various zones. The forced draft positioner also actuates a potientometer that controls the D. C. Drive on the fuel feed. Adjustable linkages are provided between the F. D. Positioner and the

potientometer to make the primary adjustments. The D. C. Drive is also provided with a trim pot that allows a change in air-fuel ratio to be used for changes in fuel. This is a simple adjustment, and once the range of fuel is determined, it is easy to keep the furnace in proper balance.

A constant negative pressure is maintained in the combustion chamber with a Hagen draft control that senses the furnace pressure and translates the furnace pressure into a signal pressure. The signal pressure controls a positioner on the induced draft fans and positions the damper to maintain a -.2" to -.4" H_2O negative.

The Induced Draft and Forced Draft Controls have manual-automatic stations allowing manual over-ride to control set points. Added control on the forced draft system permits a manual biasing of firing rates to automatic control set points.

When reducing a high firing rate, the heat in the refractory can cause a small boiler pressure surge; but with the safety valves set a few pounds above the operating pressure, over-ride is unlikely. With a complete drop-off of load and fuel cutoff, the small fuel reserve in the cell soon dissipates and the response to a shutdown is quite rapid.

WELLONS, INC.

BOILER PLANT SYSTEM AND STORAGE BIN INSTALLATIONS

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1963	PLACERVILLE LUMBER COMPANY Placerville, California	Wet Sawdust	Existing
1963	BENNETT LUMBER COMPANY Princeton, Idaho	Wet Sawdust	80 Units
1963	DILLARD LUMBER COMPANY Dillard, Oregon (formerly Hult Lbr. Co.)	Shavings	Existing
1964	EUGENE BURRILL LUMBER COMPANY White City, Oregon	Bark	80 Units
1964	SPALDING & SONS, INC. Grants Pass, Oregon	Bark & Sawdust	80 Units
1965	COMMANDER INDUSTRIES Elk Creek, California (formerly Glenco Forest Products)	Wet Sawdust	110 Units
1965	BROUGHTON LUMBER COMPANY Underwood, Washington	Planer Shavings	80 Units
1965	ARCATA REDWOOD COMPANY Arcata, California	Sawdust & Shavings	160 Units
1965	ERICKSON LUMBER COMPANY Marysville, California	Bark Sawdust Trim (Hogged)	80 Units
1966	PLUMAS LUMBER COMPANY Crescent Mills, California	Shavings	80 Units
1967	CONE LUMBER COMPANY Goshen, Oregon	Wet Sawdust	80 Units
1967	PAUL BUNYAN LUMBER COMPANY Anderson, California	Wet Sawdust	160 Units
1968	IDAHO STUD MILL St. Anthony, Idaho	Shavings	50 Units
1968	AMERICAN FOREST PRODUCTS Foresthill, California (Stockton Div.)	Wet Sawdust	110 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1968	LAYMAN LUMBER COMPANY Naches, Washington	Bark & Sawdust	80 Units
1968	HINES LUMBER COMPANY Saratoga, Wyoming	Shavings	80 Units
1968	AMERICAN FOREST PRODUCTS North Fork, California	Wet Sawdust	160 Units
1968	WESTERN WOOD MFG. COMPANY Lake Oswego, Oregon	Shavings & Sanderdust	50 Units
1969	MICHIGAN RIVER TIMBER COMPANY Walden, Colorado (Div. of Edward Hines)	Shavings	62 Units
1969	COMMANDER INDUSTRIES Red Bluff, California (M.B.& C. Div.)	Wet Sawdust	160 Units
1969	YELLOWSTONE PINE LUMBER COMPANY Belgrade, Montana	Shavings	80 Units
1969	AGNEW TIMBER PRODUCTS Brookings, Oregon	Bark	60 Units
1969	SIERRA-PACIFIC INDUSTRIES Happy Camp, California	Wet Sawdust Shavings	60 Units 80 Units
1970	KREMMLING TIMBER COMPANY Kremmling, Colorado (Div. of Edward Hines)	Shavings	43 Units
1970	C & C PLYWOOD CORPORATION (partial) Kalispell, Montana	General Waste	None
1972	STUCKART LUMBER COMPANY Lyons, Oregon	Bark	36 Units
1972	SUPERIOR LUMBER COMPANY Glendale, Oregon	Bark	20 Units
1972	MURPHY VENEER COMPANY Florence, Oregon	Bark	80 Units
1972	SIERRA-PACIFIC INDUSTRIES Inyokern, California	Wet Sawdust	110 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1972	BINGEN PLYWOOD COMPANY Bingen, Washington	Hogged Plywood Trim & Sanderdust	Existing
1973	WETSEL-OVIATT LUMBER COMPANY Eldorado Hills, California	General Waste Sawdust & Bark Fines	160 Units
1973	ARDEN LUMBER COMPANY (partial) Colville, Washington	General Waste	53 Units
1973	KONKOLVILLE LUMBER COMPANY Orofino, Idaho	General Waste	None
1973	AMERICAN FOREST PRODUCTS Foresthill, California (Stockton Div.)	Wet Sawdust	110 Units
1973	KANE HARDWOOD Kane, Pennsylvania (Div. of Collins Pine)	Hardwood Bark & Sawdust	160 Units
1973	TAYLOR LUMBER SALES Sheridan, Oregon	Bark & Sawdust	160 Units
1973	COIN LUMBER COMPANY Susanville, California	Combination Bark & Wet Sawdust	160 Units
1973	MASONITE CORPORATION Cloverdale, California	Green Redwood Planer Shavings	64 Units
1973	HOMESTAKE FOREST PRODUCTS Spearfish, South Dakota (2 boilers)	.Combination Bark & Wet Sawdust	120 Units
1973	VAAGEN BROS. LUMBER COMPANY Colville, Washington	Combination Bark & Wet Sawdust	52 Units
1974	SIERRA-PACIFIC INDUSTRIES Susanville, California	Combination Bark & Wet Sawdust	160 Units
1974	PINE MOUNTAIN LUMBER COMPANY Yreka, California	Combination Bark & Wet Sawdust	160 Units
1974	SIMONSON LUMBER COMPANY Smith River, California	Combination Bark & Wet Sawdust	160 Units
1974	JELD-WEN, INC. Klamath Falls, Oregon	Combination Bark & Wet Sawdust	160 Units

DATE	COMPANY NAME AND LOCATION	FUEL FIRED	BIN CAPACITY
1974	HAMBRO FOREST PRODUCTS Crescent City, California	Hogged Wood & Plywood Trim	None
1974	LOUISIANA PACIFIC CORPORATION Lakeview, Oregon	Combination Bark & Wet Sawdust	160 Units
1974	ROUND PRAIRIE LUMBER COMPANY Dillard, Oregon	Combination Bark & Wet Sawdust	160 Units
1974	BRANDT & WICKLUND FOREST PRODUCTS Fox Park, Wyoming	Combination Bark & Wet Sawdust	50 Units
1975	PICKERING LUMBER COMPANY Standard, California	Combination Bark & Wet Sawdust	510 Units
1975	AMERICAN WALNUT COMPANY Kansas City, Kansas	Hogged Wood & Bark with Wet Sawdust (Walnut)	50 Units
1975	CAMBRIA FOREST INDUSTRIES, INC. Newcastle, Wyoming	Combination Bark & Wet Sawdust	60 Units
1975	HAMMERMILL PAPER COMPANY Frank Purcell Walnut Lumber Div. Kansas City, Kansas	Hogged Wood & Bark with Wet Sawdust (Walnut)	50 Units
1975	SIERRA PACIFIC INDUSTRIES Central Valley, California	Wet Sawdust	175 Units
1975	SIERRA PACIFIC INDUSTRIES Arcata, California	Hogged Wood & Bark	35 Units
1976	AMERICAN TIMBER COMPANY Olney, Montana	Hogged Bark	105 Units
1976	TOMCO, INC. Sweet Home, Oregon	Hogged Bark	58 Units
1976	NEIMAN SAWMILL, INC. Hulett, Wyoming	Combination Bark & Wet Sawdust	35 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1976	MIDWEST WALNUT COMPANY Willow Springs, Missouri	Hardwood sawdust & hogged bark	51 Units
1976	MIDWEST WALNUT COMPANY Council Bluffs, Iowa	Hardwood sawdust & hogged bark	51 Units
1976	PACIFIC WOOD TREATING CORP. Ridgefield, Washington	Combination wood, bark, wet and dry sawdust	120 Units (Two Bins)
1976	ALLEN LOGGING COMPANY Forks, Washington	Hogged bark & wet sawdust	
1976	IDAHO VENEER COMPANY Post Falls, Idaho	Hogged bark	160 Units
1976	WOOD MOSAIC Louisville, Kentucky	Hardwood sawdust & hogged bark	105 Units
1976	PYRAMID MTN. LUMBER COMPANY Seeley Lake, Montana	Hogged bark	67 Units
1976	BOISE CASCADE CORPORATION Goldendale, Washington	Hogged bark & wet sawdust	55 Units
1976	LITTLE LAKE INDUSTRIES Willits, California	hogged bark	34 Units
1977	WARRENTON LUMBER COMPANY Warrenton, Oregon	hogged bark	145 Units (2 bins)
1977	TEX-O-CAL HARDWOODS, INC. Temple, Texas	dry shavings	50 Units
1977	BOISE CASCADE CORPORATION Willamina, Oregon	hogged bark	46 Units
1977	SCHMIDBAUER LUMBER COMPANY Eureka, California	hogged bark	20 Units

TEST RESULTS - PLANTS BY WELLONS, INC.

WITH CYCLONES	Tested	Maximum Allowable
Arcata Redwood Company Arcata, California	0.12 Grains/SCF	0.2 Grains/SCF
Stuckart Lumber Company Lyons, Oregon	0.082 Grains/SCF	0.1 Grains/SCF
Superior Lumber Company Glendale, Oregon	0.10 Grains/SCF	0.1 Grains/SCF
Coin Lumber Company Susanville, California	0.10 Grains/SCF	0.3 Grains/SCF
Pine Mountain Lumber Company Yreka, California	0.075 Grains/SCF	0.3 Grains/SCF
Brandt and Wicklund Forest Products Fox Park, Wyoming	0.1 Lb./mm BTU input	0.1 Lb./mm BTU input
Cambria Forest Industries Newcastle, Wyoming	0.098 Lb./mm BTU input	" " "
WITH MULTI-CONE COLLECTORS		
Jeld-Wen, Inc. Klamath Falls, Oregon	0.098 Grains/SCF	0.1 Grains/SCF
Sierra Pacific Industries Eagle Lake Division Susanville, California	0.069 Grains/SCF	0.3 Grains/SCF
Round Prairie Lumber Company Dillard, Oregon	0.078 Grains/SCF	0.1 Grains/SCF
Kane Hardwood Kane, Pennsylvania	0.2 Lb./mm BTU input	0.4 Lb./mm BTU input

(Continued)

WITH MULTI-CONE COLLECTORS - Continued

Hammermill Paper Company Kansas City, Kansas	0.16 Lb./mm BTU input	0.41 Lb./mm BTU input
Sierra Pacific Industries Arcata, California	0.048 Grains/SCF	0.1 Grains/SCF
Louisiana Pacific Corp. Lakeview, Oregon	0.098 Grains/SCF	0.1 Grains/SCF
Sierra Pacific Industries Central Valley, Calif.	**0.075 Grains/SCF**	**0.1 Grains/SCF**

State of Mississippi
Air and Water Pollution Control Commission

PERMIT

To Operate Air Emissions Equipment

This Certifies That

Koppers Company, Incorporated
W. Tie Plant,
Mississippi

has been granted permission to operate Air Emissions Equipment in connection with the operation of the plant or process Wood Preserving Plant

Operation of such a facility shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

The Mississippi Air and Water Pollution Control Commission reserves the right to withdraw this permit, after due notice, if it is found that additional equipment or alterations are necessary to prevent pollution of the air of the state as defined in the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the regulations or standards adopted and promulgated thereunder.

Issued this 8th day of March, 19 77.

AIR AND WATER POLLUTION CONTROL COMMISSION

Glen Wood Jr.
Executive Director

Expires 8th day of March, 19 80.

Facility No. 0960-00012-000

№ 2372

ADDITIONAL CONDITION IS ATTACHED

MPC FORM

ADDITIONAL CONDITION

ISSUED TO

Koppers Company, Inc.
P. O. Box 160
Tie Plant, Mississippi 38960

Facility No. 0960 00012 000

14. If odors from this facility should ever result in justifiable and verifiable complaints being filed with the Mississippi Air and Water Pollution Control Commission, this facility may be required to control emissions of odorous substances to a degree greater than is now being achieved.



2/10/97

KOPPERS, INC.
0960-00012
PTO Renewal
Wood Preserving Plant

Operating Schedule: 24 hr/day, 5 day/wk, 52 wk/yr.

PROCESS CAPACITY: 24 T/HR wood preserved

FEED INPUT (Yearly Basis): 96,000 T/YR wood
20,000 T/YR preservative

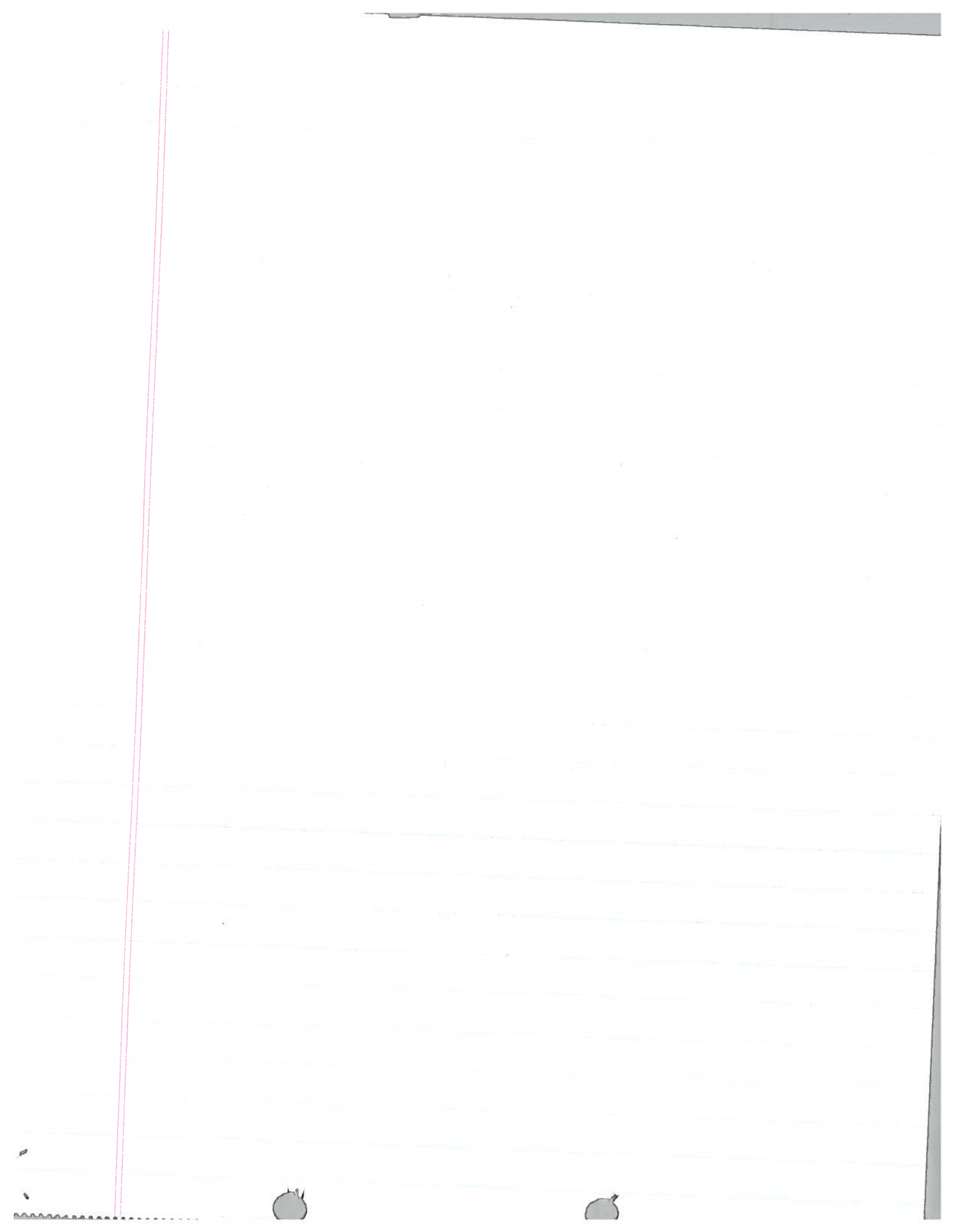
Allowable Emissions: 34.5 #/HR particulates

PROCESS
One, steam heating boiler, 20 million BTUH, natural gas or #2 oil.

Five, pressure treating cylinders, all closed systems, no emission points.

One, large diameter cyclone that collects wood-waste from cut-off saws. One, large diameter cyclone that collects shavings from the planer mill.

EMISSIONS
Only emissions result from the two,



large diameter cyclones. The inspection reports states that there are no visible emissions from the cyclones. This is feasible since the woodwaste handled comes from cut-off saws and a planer. Most of this material should be large enough to be collected very efficiently.

I recommend PTO be renewed.

DMK

Grenada

RECEIVED
JAN 11 19??

*** INSPECTION ACTION INFORMATION ***

DATE SCHEDULED 01/31/77
COMPANY NAME KOPPERS CO INC
ADDRESS W TIE PLANT
CITY-STATE-ZIP GRENADA MS 38901
DESCRIPTION WOOD PROCESSING

TELEPHONE 601 2264584
CONTACT R S OHLIS JR
ENGINEER MIKE KENNEDY

AGCY CODE (1-3)	COUNTY CODE (4-7)	SOURCE NUM (8-12)	EM. PT. NUM (13-15)	ACTION NUM (16-17)	CARD TYPE (18)	ACTION TYPE (52-53)	ACTION DESCRIPTION
130	0960	00012	000	11	7	08	INSPECTION

DATE PERFORMED (MO/DAY/YR) (54-59)	COMPLETED ACTION RESULTS (69-70)	HOURS TAKEN TO COMPLETE (71-72)	UPDATE CODE (80)
1-13-77			C

********** ADDITIONAL INFORMATION **********
(DO NOT WRITE IN THIS SPACE)

1 PTO RENEWAL. WOOD PRESERVING. TWO
2 CYCLONES.BOILER.

********** FOR ENGINFERING USE ONLY **********

NEXT-ACTION NUMBER (16-17)	CARD TYPE (18)	NEXT-ACTION DATE (MO/DAY/YR) (60-65)	STAFF MEMBER (66-68)	NEXT-ACTION TYPE (73-74)	HRS TO COMPLETE (75-76)	LETTER CODE (77-78)	UPDATE CODE (80)
XX	7						N

********** ENGINEERING COMMENTS **********

CARD TYPE (18)	LINE NUMBER (19)	COMMENTS (20-54)	UPDATE CODE (80)
8	1	JAN 10 1977 out WBD	N
8	2		N
8	3		N
8	4		N
8	5		N
8	6		N
8	7		

NO. & YR.
SERIE
DATE

012577

MISSISSIPPI AIR & WATER POLLUTION CONTROL COMMISSION

CERTIFICATION OF INSPECTION

This is to certify that _____ Inspector

has inspected _____ Facility

located at _____ Street _____ City _____ County

on the date of _____ Month _____ Day _____ Year

for the purpose of determining compliance with the rules and regulations of the Mississippi Air and Water Pollution Control Commission.

_____ Signature of person contacted

_____ Title

_____ Inspector (Signature)

_____ Division

Type of Inspection

_____ 18 Month Schedule

_____ Complaint Investigation

_____ Performance Evaluation



WOOD WASTE BOILER COMPLEX

GRENADA, MISSISSIPPI

DESCRIPTION

The boiler plant proposed for Grenada, Mississippi, is to be an entirely new facility specifically designed to utilize locally produced wood waste as fuel. It will generate process steam and electrical power for the Grenada plant. The boiler plant will be designed for automatic, unattended firing. It will include all appropriate electronic controls, interlocks, and safety circuits to accomplish this. It will meet all ASME codes; FIA requirements; local, state and federal requirements pertaining to the facility. The boiler plant will utilize a new shop assembled, Nebraska water-tube boiler, specifically designed for solid fuel firing. The wood waste combustion system will be selected to reflect the latest "state-of-the-art" of wood waste combustion system designs on the market today. This system will provide a very wide range of firing rates that will allow it to perform satisfactorily throughout the extreme load changes that this treating plant imposes upon the boiler. The air pollution control system proposed for this boiler plant will be a low maintenance, simple dry mechanical fly-ash separation system that will be well within the requirements of the State of Mississippi. The electrical generation system will consist of a used steam

turbine generator set, supplying 750 KW of electrical power for use throughout the entire plant. It is sized to supply the entire electrical load of the plant, but will most likely be operated one shift per day during our peak electrical load periods.

WOOD WASTE HANDLING SYSTEM

The wood waste handling system will provide facilities to mechanically unload inbound trucks of purchased wood waste material and also material brought from remote portions of our plant. Seventy-two hours of storage capability will be provided. The storage bin unloading, conveying, metering and firing systems for this wood waste fuel will be completely automatic and will not require any personnel in attendance.

WELLONS CYCLO-BLAST FIRING

FURNACE OPERATION

The Wellons Cyclo-Blast Firing System utilizes the best features of the older "dutch oven" and the modern "suspension" burning. The dutch oven can fire an extreme variation in fuel, but is very difficult to control automatically. Suspension burning is very controllable if the fuel is consistent, but has the disadvantage that the ash from the fuel fired in suspension is also carried in suspension and very difficult to remove from the gas stream in compliance with the emission standards of the air pollution regulations.

Combustion takes place in a vertical refractory tube. The furnace shell has an air space between refractory tube and shell. This space carries the preheated air for combustion to the grates and tuyeres in the cell lining. Two seals between the shell and tube divide the space into 3 zones, each controlled by separate damper, giving a primary, secondary and tertiary air supply. The lowest section has vertical and horizontal water-cooled grates; the second section has 30 to 50 tuyeres holes in the lining; the top section has two blast tuyeres. A small continuous amount of fuel is fed into the side of the cell. The major portion of the fuel forms a small pile on the bottom. The high temperature of the refractory tube plus a very low draft in the bottom of the cell gasifies the wood and as the gas rises into the center section of the cell, the high pressure tuyeres in the middle section cause rapid combustion.

Wood ash varies from .1% to 3%, depending on species and product and slags at generally low temperature (1700°F. - 2500°F.).

Therefore, in most instances, a wet wall is developed on the cell lining. Fine ash from the small wood particles is trapped and slagged on the wet surface of the cell. This slag runs to the bottom of the cell and is chilled by water-cooled grates. Since a good portion of the ash and dirt is captured in the cell, far less material is placed in transit to the boiler stack and stack emissions are substantially reduced. Grate cleaning is manual and can be accomplished in a matter of minutes. Procedure is: 1) allow the small fuel pile to burn down; 2) rake ash from bottom and side grates out clean-out door; 3) close ash door and start fuel feed. Refractory will re-ignite pile. In most cases, only a momentary steam pressure drop occurs during cell cleaning.

Metered fuel is fed by an inclined helicoid conveyor. This keeps the trough full and reduces the uncontrolled air in the system to a minimum. The helicoid feeds into a refractory chute that deposits the fuel into the cell in the middle of the second zone. The tangential tuyeres cause a cyclonic action so fine material caught in suspension will have a relatively long dwelling time in the hottest part of the cell. The coarse particles will fall to the bottom and be gasified. (See Drawing 1-B-2192 for typical section through Cyclo-Blast Cell.)

CONTROL SYSTEM

A pressure signal is received from the steam drum. This signal is translated into a control air pressure signal by a Hagen

pneumatic controller. The firing rate of the boiler is increased or decreased according to the signal pressure.

This is not much different than most pneumatic combustion control systems; however, a time control orifice is added to slow the control reaction time as wood fuel does not have as rapid heat response as gas, oil or powdered coal. The Wellons Cyclo-Blast Cell does have a more rapid heat response than a dutch oven firing because the fuel pile encased in the refractory tube will respond to the forced draft almost immediately. The rate of destructive distillation or wood gasification follows the forced draft.

The normal control response time from low to high firing in common combustion control systems is 30 seconds, and the boiler can be put on the line in a very short time. With the Wellons wood firing system, it takes an hour to heat the boiler and setting, and control time from low to high firing is approximately 2 minutes. With dryer fuel, the response time is shorter as there is a smaller pile and consequently faster reactions. Under normal demand fluctuations of steam pressure can be held within 5% of control pressure setting.

The control pressure signal actuates a Hagen Positioner that is linked to the forced draft dampers. This linkage is adjustable to obtain the proper relationship between the dampers of various zones. The forced draft positioner also actuates a potientometer that controls the D. C. Drive on the fuel feed. Adjustable linkages are provided between the F. D. Positioner and the

potientometer to make the primary adjustments. The D. C. Drive is also provided with a trim pot that allows a change in air-fuel ratio to be used for changes in fuel. This is a simple adjustment, and once the range of fuel is determined, it is easy to keep the furnace in proper balance.

A constant negative pressure is maintained in the combustion chamber with a Hagen draft control that senses the furnace pressure and translates the furnace pressure into a signal pressure. The signal pressure controls a positioner on the induced draft fans and positions the damper to maintain a -.2" to -.4" H_2O negative.

The Induced Draft and Forced Draft Controls have manual-automatic stations allowing manual over-ride to control set points. Added control on the forced draft system permits a manual biasing of firing rates to automatic control set points.

When reducing a high firing rate, the heat in the refractory can cause a small boiler pressure surge; but with the safety valves set a few pounds above the operating pressure, over-ride is unlikely. With a complete drop-off of load and fuel cutoff, the small fuel reserve in the cell soon dissipates and the response to a shutdown is quite rapid.

WELLONS, INC.

BOILER PLANT SYSTEM AND STORAGE BIN INSTALLATIONS

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1963	PLACERVILLE LUMBER COMPANY Placerville, California	Wet Sawdust	Existing
1963	BENNETT LUMBER COMPANY Princeton, Idaho	Wet Sawdust	80 Units
1963	DILLARD LUMBER COMPANY Dillard, Oregon (formerly Hult Lbr. Co.)	Shavings	Existing
1964	EUGENE BURRILL LUMBER COMPANY White City, Oregon	Bark	80 Units
1964	SPALDING & SONS, INC. Grants Pass, Oregon	Bark & Sawdust	80 Units
1965	COMMANDER INDUSTRIES Elk Creek, California (formerly Glenco Forest Products)	Wet Sawdust	110 Units
1965	BROUGHTON LUMBER COMPANY Underwood, Washington	Planer Shavings	80 Units
1965	ARCATA REDWOOD COMPANY Arcata, California	Sawdust & Shavings	160 Units
1965	ERICKSON LUMBER COMPANY Marysville, California	Bark Sawdust Trim (Hogged)	80 Units
1966	PLUMAS LUMBER COMPANY Crescent Mills, California	Shavings	80 Units
1967	CONE LUMBER COMPANY Goshen, Oregon	Wet Sawdust	80 Units
1967	PAUL BUNYAN LUMBER COMPANY Anderson, California	Wet Sawdust	160 Units
1968	IDAHO STUD MILL St. Anthony, Idaho	Shavings	50 Units
1968	AMERICAN FOREST PRODUCTS Foresthill, California (Stockton Div.)	Wet Sawdust	110 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1968	LAYMAN LUMBER COMPANY Naches, Washington	Bark & Sawdust	80 Units
1968	HINES LUMBER COMPANY Saratoga, Wyoming	Shavings	80 Units
1968	AMERICAN FOREST PRODUCTS North Fork, California	Wet Sawdust	160 Units
1968	WESTERN WOOD MFG. COMPANY Lake Oswego, Oregon	Shavings & Sanderdust	50 Units
1969	MICHIGAN RIVER TIMBER COMPANY Walden, Colorado (Div. of Edward Hines)	Shavings	62 Units
1969	COMMANDER INDUSTRIES Red Bluff, California (M.B.& C. Div.)	Wet Sawdust	160 Units
1969	YELLOWSTONE PINE LUMBER COMPANY Belgrade, Montana	Shavings	80 Units
1969	AGNEW TIMBER PRODUCTS Brookings, Oregon	Bark	60 Units
1969	SIERRA-PACIFIC INDUSTRIES Happy Camp, California	Wet Sawdust Shavings	60 Units 80 Units
1970	KREMMLING TIMBER COMPANY Kremmling, Colorado (Div. of Edward Hines)	Shavings	43 Units
1970	C & C PLYWOOD CORPORATION (partial) Kalispell, Montana	General Waste	None
1972	STUCKART LUMBER COMPANY Lyons, Oregon	Bark	36 Units
1972	SUPERIOR LUMBER COMPANY Glendale, Oregon	Bark	20 Units
1972	MURPHY VENEER COMPANY Florence, Oregon	Bark	80 Units
1972	SIERRA-PACIFIC INDUSTRIES Inyokern, California	Wet Sawdust	110 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1972	BINGEN PLYWOOD COMPANY Bingen, Washington	Hogged Plywood Trim & Sanderdust	Existing
1973	WETSEL-OVIATT LUMBER COMPANY Eldorado Hills, California	General Waste Sawdust & Bark Fines	160 Units
1973	ARDEN LUMBER COMPANY (partial) Colville, Washington	General Waste	53 Units
1973	KONKOLVILLE LUMBER COMPANY Orofino, Idaho	General Waste	None
1973	AMERICAN FOREST PRODUCTS Foresthill, California (Stockton Div.)	Wet Sawdust	110 Units
1973	KANE HARDWOOD Kane, Pennsylvania (Div. of Collins Pine)	Hardwood Bark & Sawdust	160 Units
1973	TAYLOR LUMBER SALES Sheridan, Oregon	Bark & Sawdust	160 Units
1973	COIN LUMBER COMPANY Susanville, California	Combination Bark & Wet Sawdust	160 Units
1973	MASONITE CORPORATION Cloverdale, California	Green Redwood Planer Shavings	64 Units
1973	HOMESTAKE FOREST PRODUCTS Spearfish, South Dakota (2 boilers)	.Combination Bark & Wet Sawdust	120 Units
1973	VAAGEN BROS. LUMBER COMPANY Colville, Washington	Combination Bark & Wet Sawdust	52 Units
1974	SIERRA-PACIFIC INDUSTRIES Susanville, California	Combination Bark & Wet Sawdust	160 Units
1974	PINE MOUNTAIN LUMBER COMPANY Yreka, California	Combination Bark & Wet Sawdust	160 Units
1974	SIMONSON LUMBER COMPANY Smith River, California	Combination Bark & Wet Sawdust	160 Units
1974	JELD-WEN, INC. Klamath Falls, Oregon	Combination Bark & Wet Sawdust	160 Units

DATE	COMPANY NAME AND LOCATION	FUEL FIRED	BIN CAPACITY
1974	HAMBRO FOREST PRODUCTS Crescent City, California	Hogged Wood & Plywood Trim	None
1974	LOUISIANA PACIFIC CORPORATION Lakeview, Oregon	Combination Bark & Wet Sawdust	160 Units
1974	ROUND PRAIRIE LUMBER COMPANY Dillard, Oregon	Combination Bark & Wet Sawdust	160 Units
1974	BRANDT & WICKLUND FOREST PRODUCTS Fox Park, Wyoming	Combination Bark & Wet Sawdust	50 Units
1975	PICKERING LUMBER COMPANY Standard, California	Combination Bark & Wet Sawdust	510 Units
1975	AMERICAN WALNUT COMPANY Kansas City, Kansas	Hogged Wood & Bark with Wet Sawdust (Walnut)	50 Units
1975	CAMBRIA FOREST INDUSTRIES, INC. Newcastle, Wyoming	Combination Bark & Wet Sawdust	60 Units
1975	HAMMERMILL PAPER COMPANY Frank Purcell Walnut Lumber Div. Kansas City, Kansas	Hogged Wood & Bark with Wet Sawdust (Walnut)	50 Units
1975	SIERRA PACIFIC INDUSTRIES Central Valley, California	Wet Sawdust	175 Units
1975	SIERRA PACIFIC INDUSTRIES Arcata, California	Hogged Wood & Bark	35 Units
1976	AMERICAN TIMBER COMPANY Olney, Montana	Hogged Bark	105 Units
1976	TOMCO, INC. Sweet Home, Oregon	Hogged Bark	58 Units
1976	NEIMAN SAWMILL, INC. Hulett, Wyoming	Combination Bark & Wet Sawdust	35 Units

DATE	COMPANY NAME & LOCATION	FUEL FIRED	BIN CAPACITY
1976	MIDWEST WALNUT COMPANY Willow Springs, Missouri	Hardwood sawdust & hogged bark	51 Units
1976	MIDWEST WALNUT COMPANY Council Bluffs, Iowa	Hardwood sawdust & hogged bark	51 Units
1976	PACIFIC WOOD TREATING CORP. Ridgefield, Washington	Combination wood, bark, wet and dry sawdust	120 Units (Two Bins)
1976	ALLEN LOGGING COMPANY Forks, Washington	Hogged bark & wet sawdust	
1976	IDAHO VENEER COMPANY Post Falls, Idaho	Hogged bark	160 Units
1976	WOOD MOSAIC Louisville, Kentucky	Hardwood sawdust & hogged bark	105 Units
1976	PYRAMID MTN. LUMBER COMPANY Seeley Lake, Montana	Hogged bark	67 Units
1976	BOISE CASCADE CORPORATION Goldendale, Washington	Hogged bark & wet sawdust	55 Units
1976	LITTLE LAKE INDUSTRIES Willits, California	hogged bark	34 Units
1977	WARRENTON LUMBER COMPANY Warrenton, Oregon	hogged bark	145 Units (2 bins)
1977	TEX-O-CAL HARDWOODS, INC. Temple, Texas	dry shavings	50 Units
1977	BOISE CASCADE CORPORATION Willamina, Oregon	hogged bark	46 Units
1977	SCHMIDBAUER LUMBER COMPANY Eureka, California	hogged bark	20 Units

TEST RESULTS - PLANTS BY WELLONS, INC.

WITH CYCLONES	Tested	Maximum Allowable
Arcata Redwood Company Arcata, California	0.12 Grains/SCF	0.2 Grains/SCF
Stuckart Lumber Company Lyons, Oregon	0.082 Grains/SCF	0.1 Grains/SCF
Superior Lumber Company Glendale, Oregon	0.10 Grains/SCF	0.1 Grains/SCF
Coin Lumber Company Susanville, California	0.10 Grains/SCF	0.3 Grains/SCF
Pine Mountain Lumber Company Yreka, California	0.075 Grains/SCF	0.3 Grains/SCF
Brandt and Wicklund Forest Products Fox Park, Wyoming	0.1 Lb./mm BTU input	0.1 Lb./mm BTU input
Cambria Forest Industries Newcastle, Wyoming	0.098 Lb./mm BTU input	" " "
WITH MULTI-CONE COLLECTORS		
Jeld-Wen, Inc. Klamath Falls, Oregon	0.098 Grains/SCF	0.1 Grains/SCF
Sierra Pacific Industries Eagle Lake Division Susanville, California	0.069 Grains/SCF	0.3 Grains/SCF
Round Prairie Lumber Company Dillard, Oregon	0.078 Grains/SCF	0.1 Grains/SCF
Kane Hardwood Kane, Pennsylvania	0.2 Lb./mm BTU input	0.4 Lb./mm BTU input

(Continued)

WITH MULTI-CONE COLLECTORS - Continued

Hammermill Paper Company Kansas City, Kansas	0.16 Lb./mm BTU input	0.41 Lb./mm BTU input
Sierra Pacific Industries Arcata, California	0.048 Grains/SCF	0.1 Grains/SCF
Louisiana Pacific Corp. Lakeview, Oregon	0.098 Grains/SCF	0.1 Grains/SCF
Sierra Pacific Industries Central Valley, Calif.	**0.075 Grains/SCF**	**0.1 Grains/SCF**

State of Mississippi
Air and Water Pollution Control Commission

PERMIT

To Operate Air Emissions Equipment

This Certifies That

Koppers Company, Incorporated
W. Tie Plant,
Mississippi

has been granted permission to operate Air Emissions Equipment in connection with the operation of the plant or process Wood Preserving Plant

Operation of such a facility shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

The Mississippi Air and Water Pollution Control Commission reserves the right to withdraw this permit, after due notice, if it is found that additional equipment or alterations are necessary to prevent pollution of the air of the state as defined in the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the regulations or standards adopted and promulgated thereunder.

Issued this 8th day of March, 19 77.

AIR AND WATER POLLUTION CONTROL COMMISSION

Glen Wood Jr.

Executive Director

Expires 8th day of March, 19 80.

Facility No. 0960-00012-000

ADDITIONAL CONDITION IS ATTACHED

MPC FORM

№ 2372

ADDITIONAL CONDITION

ISSUED TO

Koppers Company, Inc.
P. O. Box 160
Tie Plant, Mississippi 38960

Facility No. 0960 00012 000

14. If odors from this facility should ever result in justifiable and verifiable complaints being filed with the Mississippi Air and Water Pollution Control Commission, this facility may be required to control emissions of odorous substances to a degree greater than is now being achieved.

2/10/77

KOPPERS, INC.
0960-00012
PTO Renewal
Wood Preserving Plant

Operating Schedule: 24 hr/day, 5 day/wk, 52 wk/yr.

PROCESS CAPACITY: 24 T/HR wood preserved

FEED INPUT (Yearly Basis): 96,000 T/YR wood
20,000 T/YR preservative

Allowable Emissions: 34.5 #/HR particulates

PROCESS

One, steam heating boiler, 20 million BTUH, natural gas or #2 oil.

Five, pressure treating cylinders, all closed systems, no emission points.

One, large diameter cyclone that collects wood-waste from cut-off saws. One, large diameter cyclone that collects shavings from the planer mill.

EMISSIONS

Only emissions result from the two,

large diameter cyclones. The inspection reports state that there are no visible emissions from the cyclones. This is feasible since the materials handled comes from cut-off saws and a planer. Most of this material should be large enough to be collected very efficiently.

I recommend PTO be renewed.

MK

Grenada

RECEIVED
JAN 11 19

*** INSPECTION ACTION INFORMATION ***

DATE SCHEDULED	01/31/77	TELEPHONE	601 2264584
COMPANY NAME	KOPPERS CO INC	CONTACT	R S OHLIS JR
ADDRESS	W TIE PLANT	ENGINEER	MIKE KENNEDY
CITY-STATE-ZIP	GRENADA MS 38901		
DESCRIPTION	WOOD PROCESSING		

AGCY CODE (1-3)	COUNTY CODE (4-7)	SOURCE NUM (8-12)	EM. PT. NUM (13-15)	ACTION NUM (16-17)	CARD TYPE (18)	ACTION TYPE (52-53)	ACTION DESCRIPTION
130	0960	00012	000	11	7	08	INSPECTION

DATE PERFORMED (MO/DAY/YR) (54-59)	COMPLETED ACTION RESULTS (69-70)	HOURS TAKEN TO COMPLETE (71-72)	UPDATE CODE (80)
1-13-77			C

********** ADDITIONAL INFORMATION **********
(DO NOT WRITE IN THIS SPACE)

1 PTO RENEWAL. WOOD PRESERVING. TWO
2 CYCLONES.BOILER.

********** FOR ENGINEERING USE ONLY **********

NEXT-ACTION NUMBER (16-17)	CARD TYPE (18)	NEXT-ACTION DATE (MO/DAY/YR) (60-65)	STAFF MEMBER (66-68)	NEXT-ACTION TYPE (73-74)	HRS TO COMPLETE (75-76)	LETTER CODE (77-78)	UPDATE CODE (80)
XX	7						N

********** ENGINEERING COMMENTS **********

CARD TYPE (18)	LINE NUMBER (19)	COMMENTS (20-54)	UPDATE CODE (80)
8	1		N
8	2	JAN 1 0 1977 out WBS	N
8	3		N
8	4		N
8	5		N
8	6		N
8	7		N

NPDES
SERIAL
DATE

012577

STATE OF MISSISSIPPI

AIR AND WATER POLLUTION CONTROL COMMISSION

AIR DIVISION

P.O. Box 827

JACKSON, MISSISSIPPI 39205

APPLICATION FOR PERMIT

THIS SPACE FOR OFFICE USE ONLY.

APPLICATION FOR:

EXISTING FACILITY

RENEWAL OF PERMIT TO OPERATE

APPROVAL TO CONSTRUCT

GENERAL INSTRUCTIONS FOR ALL APPLICANTS:

1. The majority of this form must be completed by all applicants; specific instructions regarding type of permit applied for are given where needed.

2. For applications on Permit to Operate renewals, separate forms must be completed for each defined process, emission point, etc., previously holding a distinct and separate Permit to Operate.

INSTRUCTIONS

NOTE: ALL THIS INFORMATION MUST BE PROVIDED.

1. Name of Facility - give the name of the plant, mill, factory or business for which this application is made.

2. Location of Facility - give street, road or highway, address and UTM or Lat-Long. of facility.

4. Name of Owner - give name of person(s) or corporation which has day-to-day responsibility for ownership of facility.

6. In-plant person to be contacted on pollution matters- give the name of an individual who is usually at the facility who is responsible for knowing about pollution matters.

7-8. Corporate Address - to be filled in for Mississippi facilities with main offices at locations other than that of facility listed in Nos. 1,2, & 3. If none, so indicate.

10. Major Activity - define type of operation and products, show Standard Industrial Classification Number.

11. Operating Schedule - must be provided as stated. If additional description of sporadic operation is needed, attach a sheet of explanation.

FOR ALL APPLICANTS:

This application is made under and in full accord with the provisions of Chapter 238, Mississippi Laws of 1966.

1. Name of Facility - factory, mill, plant, etc. -	Telephone
Koppers Company, Inc.	226-4584

2. Location of Facility	Town	County
Lat 33° 44'04", N.Long 89° 47'19" W. Tie Plant, Grenada		

3. Mailing address of Facility	City	Zip
P. O. Box 160	Tie Plant	38960

4. Name of Owner	Telephone
Koppers Company, Inc.	412/391-3300

5. Mailing address of Owner	City	Zip
927 Koppers Building	Pittsburgh, PA	15219

6. In-plant person to be contacted on pollution matters	Title
R. S. Ohlis, Jr.	Plant Manager

7. Does facility have a corporate or main office elsewhere? X Yes ___ No

8. If yes, complete corporate name and mailing address City State Zip

Koppers Co., Inc. 927 Koppers Bldg., Pittsburgh, PA 15219

9. Correspondence to be sent to 1 4 (6) 8 above. (circle one)

10. Major activity of facility: Pressure Treating Wood Products

Type of operation and products: Treating crossties, lumber, poles, posts, piling, and switch ties

S.I.C. Number: 2491

11. Operating Schedule

	Hours per day	Days per week	Weeks per year
Normal	24	5	52
Seasonal or peak operation period	24	6	52

FOR EXISTING FACILITIES AND RENEWAL OF PERMIT TO OPERATE ONLY:

Facility Permit Status (permits regarding air emissions only)

What permits are presently held by facility: (list)

TYPE PERMIT	EXPIRATION DATE	FACILITY NO.	PROCESS OR EQUIPMENT PERMITTED
Operating	2-21-77	209-24-00-000972-00	Facility

FOR EXISING FACILITY PERMIT RENEWAL ONLY:

Please answer all the following:

1. Has the facility been modified in any way (including fuel and/or raw material changes) during period covered by the Operating Permit _____Yes X No

2. If No. 1 is yes, was modification made in accordance with permit requirements specified in Regulation APC-S-2?
   ___Yes ___No ___If no, explain _____

   _____

   _____

   _____

3. Have the emission rates from the facility been tested within the last 6 months? _____Yes X No

   If yes, please attach a copy of the stack test report(s).

   NOTE: If no stack emissions test has been made, you may be required to have one performed and submitted in order to prove compliance with emission regulations.

4. Is this facility still operating at the location given in previous applications? X Yes ___No

5. If No. 4 is no, complete the following:

New location: _____

_____

New Mailing Address: _____

_____

Was a request for approval to move made for this new location? ____Yes ____No

Was approval granted? _____Yes ____No

FOR ALL APPLICANTS, WHETHER NEW CONSTRUCTION, EXISTING FACILITY, OR RENEWAL

Control Equipment covered under this application-Please check all applicable and indicate number of units

PARTICULATE EMISSIONS CONTROL EQUIPMENT

1. Cyclone(s) 2
2. Water Scrubber_____
3. Baghouse_____
4. Electrostatic Precipitator_____
5. Venturi Scrubber_____
6. Cyclonic Baghouse_____
7. Cyclonic Scrubber_____
8. Other _____

GASEOUS EMISSIONS CONTROL EQUIPMENT

1. Water Scrubber_____
2. Activated Carbon Bed_____
3. Other _____

WASTE DISPOSAL SYSTEMS

1. Solid Waste Incinerator_____
2. Liquid Waste Incinerator_____
3. Wood or other waste fuel recovery boiler _____
4. Gaseous Waste Flare_____
5. Liquid Waste Flare_____
6. Other _____

Pneumatic Conveying System _____

Other (please describe)

FOR ALL APPLICANTS

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

This form has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment. Reasons should be given explaining any data not filled in.

Page 1

1. Fill in company name and address, plus year for which data is given (if existing facility) at top of page. Use data for most recent calendar year available.

2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc., and use the same reference number on each of the three pages to identify information for the same unit.

3. Manufacturer and Model Number. Nameplate date for boiler, furnace, kiln, etc. Waste gas flares should also be included on this form and stationary internal combustion engines over 3000 horsepower.

4. Rated Capacity in Millions of BTU per hour.

5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.

6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.

7. Heat Usage. Percent of heat used for process and percent for space heating.

Page 2

8. Reference Number. Continue reference numbers from Page 1, using same number to identify information for same unit.

9. Stack Parameters.
   Stack Height in feet from ground.
   Stack Inside Exit Diameter in feet.
   Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used.)
   Exit Gas Gemperature in degrees F.

10. Fuel Data
    Fuel Type. Coal, Gas, #2 Oil, #6 Oil, etc.
    Maximum Capacity burned per hour. Gallons, pounds, cubic feet, etc. Specify. Average amount burned per year. Gallons, Tons, Million cubic feet, etc. Specify. Heat Content of Fuel. BTU per Gallon, pound cubic foot, etc., Specify.
    Average Percent Sulfur Content.

Average Percent Ash Content.
(If percent sulfur and percent ash are not known, list fuel type and supplier's name at bottom of page in spaces provided so that information may be obtained.)

11. Reference Number. Use same numbers as on Page 1 and 2 to identify information for same unit.

12. Air Pollution Control Equipment.
Manufacturer and Model Number. Information from nameplate. Type. Use Table 1, Page 16. If a wet scrubber, specify gallons per minute of water flow and water pressure if known. Efficiency. Percent design control on pollutants and actual percent control if known.

13. Emission Rates.
Specify tons per year of each of the listed pollutants emitted per year.
Give basis of estimates of pollutants emitted (Material Balance, Stack Tests, Emission Factors, etc.)
(If unit is a kiln or similar unit in which combustion products and process losses vent through a common stack, emissions may be totaled and listed under process losses).

FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 FACILITY NAME	Address	for Agency use Only
Koppers Company, Inc. Forest Products	P. O. Box 160 Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calender Year	Date
209-24-00-000972-00 / / / / / / / / / / / /	19 75	11-4-76

2 Reference Number	3 Manufacturer and Model Number	4 Rated Capacity 10^6BTU/hr	5 Type of Burner Unit (use code 1*)	6 Usage (use code 2*)	7 Most Usage % Process	7 Most Usage % Space heat
1	B & W Boiler Model 200-BR-1	20x10^6BTU/hr	7	1	100	0

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FUEL BURNING EQUIPMENT

(FOR AGENCY USE ONLY)

Reference Number	Stack Parameters				Fuel Type	Fuel Data				
	Stack Height Feet	Inside Exit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature Degree F.		Maximum Amount Per Hour (Specify Units)	Amount Per Year (Specify Units)	Heat Content BTU/Gal, etc. (Specify Units)	Percent Sulfur	Percent Ash
1	130	5			Natural Gas	25000 cf/hr	101,521 MCF	1039 BTU/cf	0	0

FUEL SUPPLIERS:

Fuel Type	Supplier
Natural Gas	Miss. Valley Gas

(FOR AGENCY USE ONLY)

FUEL BURNING EQUIPMENT

11	12				13			
Reference Number	Air Pollution Control Equipment				Emissions (Tons/Year)			Basis of Estimate
	Manufacturer and Model Number	Type* (Use Table 1)	Efficiency		Particulate	So_2	Other (specify)	
			Design	Actual				
1	None				1.04	.02		HEW

*For Wet Scrubber give
Gallons per minute Water
Flow and Water Pressure if known.

FOR ALL APPLICANTS

MANUFACTURING PROCESS OPERATIONS

Page 1

1. Company Name and Address, plus year for which information is given (if existing facility) at top of page. Use data for must recent calendar year available.

2. Reference Number. Use an identifying number for each manufacturing process which emits matter to the air and use the same number on all three pages of this form to identify information for the same operation.

3. Process or Unit Operation Name. Identify the unit or process section for which information is given by name.

4. Rates Process Capacity. Give in tons per hour the maximum rated capacity of the process or unit identified, wet weight.

5. Feed Input. Process rate in wet tons per hour and wet tons per year of materials fed to the operation.

6. Number of Emissions Points to Air. Number of stacks, vents, etc., which emit materials to air.

7. Product Output. Product rate in wet tons per hour and wet tons per year from the operation.

Page 2

8. Reference Number. Use same number as on Page 1 of form to identify information for same process or operation.

9. Stack Data (or outlet of air cleaning device)
Stack Height in feet above groung.
Stack Inside Diameter in Feet.
Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used)
Exit Gas Temperature in degrees F.

10. Air Pollution Control Equipment.
Manufacturer and Model Number. Nameplate Data.
Type. Use Table 1, Page 16. If a wet scrubber, give water flow in GPM and water pressure.
Collection efficiency. Design and actual collection efficiency if known.

11. Reference Number. Use same number as on Pages 1 & 2 of form to identify information for same process or operation.

12. Process Emissions. Give in pounds per hour and tons per year the amount of emissions from the process or operation of each of the two pollutant categories so that process rates versus emission rates may be compared with Regulations. Identify the units of measure used.
Give the basis of the estimates of pollutants emitted (stack tests, Material Balance, emission factors, ect.)

MANUFACTURING PROCESS OPERATIONS

Company Name	Address	FOR AGENCY USE
Koppers Company, Inc. Forest Products Division	P. O. Box 160 Tie Plant, MS 38960	

FACILITY NUMBER	Information for Calendar Year	Date
209-24-00-000972-00 / / / / / / / / / /	19 75	11-4-76

Reference Number	Process or Unit Operation Name	Rated Process Capacity Tons/Hour	Feed Input		Number of Emission Points To Air	Product Output*	
			Quantity Per Hour	Quantity Per Year		Quantity Per Hour	Quantity Per Year
1	Wood Preserving	24		4 Million cf of wood ~~products~~ 4 million gallons of Preservative 96,000 T/yr wood 20,000 T/yr pres.	Storage Tanks		4 million cf of wood ~~products~~

*Specify Units of Measure Used

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

Reference Number	Stack Data				Air Pollution Control Equipment			
	Height Feet	Inside Unit Dia. Feet	Exit Gas Velocity Feet/Sec.	Exit Gas Temperature °F	Manufacturer and Model Number	Type* (use Table 1)	Collection Efficiency	
							Design	Actual
1	None							

*For Wet Scrubbers Give Gallons per minute Water Flow and Water Pressure if known.

PAGE 3

(FOR AGENCY USE ONLY)

MANUFACTURING PROCESS OPERATIONS

11 12

Reference Number	Process Emissions*			Basis for Estimation	(Agency Comments Only)
	Particulates	Sulfur Oxides	Others (Specify by chemical composition)		
1	25.6 Tons of storage tank	fugitive emissions from breathing and filling		API Storage TK and filling losses	

*Please Express Emissions as Tons per Year and Pounds per Hour and Identify Units Being Used.

FOR ALL APPLICANTS

REFUSE DISPOSAL AND INCINERATION

A. Company Name & Address plus year for which information is given if for renewal of permit, at top of page.

B. Type Waste. Describe type of waste materials (paper, garbage, wood crates, sawdust, coal refuse, etc.)

C. Maximum amount per day in pounds.

D. Average amount per year in tons.

D. Method of Disposal. Use codes at bottom of Form (1*).

INCINERATION

1. Type of Incinerator. Check which applies.

2. Manufacturer, Model Number, Capacity in Pounds per Hour and type waste on which Capacity is based (Nameplate Data).

3. Average Quantity Burned in Pounds per Year.

4. Operating Schedule for Incinerator. Hours per Day and Days per Year incinerator is in operation.

5. Auxiliary Fuel Date.
   Type. (Natural Gas, #2 Oil, etc.)
   Amount per year. Specify Gallons, Cubic Foot, etc.
   Heat Content of Fuel. BTU per Gallon, Cubic Foot, etc.
   Percent Sulfur. Average Sulfur Content of Auxiliary Fuel.
   Percent Ash. Average Ash Content of Auxiliary Fuel.
   Fuel Supplier's Name if Ash and Sulfur Content are not known.

6. Pollution Control Eqipment on Incinerator.
   Manufacturer of Control Device.
   Model Number of control Device.
   Percent efficiency of Control if known.
   Type. Venturi Scrubber, Baghouse, etc. as outlined on other forms.
   GPM Water Flow if Control Device is a Wet Scrubber.

7. Stack Data.
   Height in Feet above Ground.
   Inside Exit Diameter in Feet.
   Exit Gas Velocity in Feet per Second.
   Exit Gas Volume if Velocity not known.
   Exit Gas Temperature in Degrees F if known.

8. Estimated Emission from Refuse Incineration. Give amounts in tons per year and basis of estimates for each of the five listed pollutants.

REFUSE DISPOSAL AND INCINERATION

A

Company Name	Information for Year	(Agency Use Only)
Koppers Company, Inc. Forest Products Division	1975	
Address	**Date**	
P. O. Box 160 Tie Plant, MS 38960	11-4-76	

B — Description of Waste Materials

Type (Describe)	C Maximum Amount Per Day (Pounds)	D Amount Per Year (Tons)	E 1* Method of Disposal
Sawdust, chips, bands	2000	200	2

If Waste Disposal is by Incineration, Specify the Following:

1. Type of Incinerator:
   - single chamber ☐
   - multiple Chamber ☐
   - Modified (describe) ☐
   - Other (describe) ☐
   - Rotary ☐
   - Flue Fed ☐

2. Manufacturer's Name: _____
   Model Number _____
   Rated Capacity _____ Pounds / Hour _____ Type Waste
3. Quantity Burned: _____ Pounds / Day
   _____ Tons / Year
4. Operating Schedule _____ Hours / Day
   _____ Days / Year

*1 Disposal Method Codes

1. Open Burning
2. Landfill (No Burning)
3. Incinerator (Complete rest of Form)
4. Conical Burner (TeePee)
5. Burned in Boiler or Furnance
6. Other (Specify)

(AGENCY USE ONLY)

5. Auxiliary Fuel:

Type	#2 Burner Oil
Amount/Year (Specify Units)	21,000 Gallons
Heat Content	
Percent Sulfur	
Percent Ash	
Supplier's Name	Southland Oil Company

6. Pollution Control Equipment:

Manufacturer	None
Model Number	
% Efficiency	
Type	
GPM Water Flow (If Wet Scrubber)	

7. Stack Data:

Height	130	Feet
Inside Exit Diameter	5	Feet
Exit Gas Velocity		Feet/Sec.
Exit Gas Volume		SCFM
Exit Gas Temp.		^{o}F.

8. Estimated Emissions From Refuse Incineration:

Name:			Basis of Estimates:
Particulates		Tons/Year	
Sulfur Oxides		"	

ADDITIONAL INFORMATION REQUIRED FOR APPROVAL TO CONSTRUCT.

The following additional information must be submitted. Failure to submit any of the additional information or to conform to the instructions will result in initial denial of the application.

1. Site Plan – The drawing or sketch submitted must be to scale and show at least the following:

   A. The property involved and outlines and heights of all buildings. Identify property lines plainly.

   B. Location and identification of all existing or proposed points of discharge of air contaminant to the atmosphere.

   C. Location of streets and all adjacent properties. Show location of all buildings outside the property that are within 150 feet of the equipment involved in the application. Identify all such buildings (as a residence, apartment, warehouse, etc.), specifying number of stories. Indicate north, and prevailing wind direction.

II. Drawings of Equipment (See Note Below) - Supply an assembly drawing, dimensioned and to scale, in plan, elevation and as many sections as are needed to show clearly the design and operation of the equipment and the means by which air contaminants are controlled. The following must be shown:

   A. Size and shape of equipment. Show exterior and interior dimensions and features.

   B. Locations, sizes, and shape details of all features which may affect the production, collection, conveying or control of air contaminants of any kind; location, size and shape details concerning all materials handling equipment.

   C. All data and calculations used in selecting or designing the equipment.

   D. Horsepower rating of all motors driving the equipment.

   NOTE. Structural design calculations and details are not required.

ADDITIONAL INFORMATION MAY BE REQUIRED.

III. Description of Process and Control Equipment - The application must be accompanied by two copies of a written description of each process to be carried out in the facility and the function of the equipment used in the process. The descriptions must be complete and particular attention must be given to explaining all stages in the process where the discharge of any materials might contribute in any way to air pollution. Control procedures must be described insufficient detail to show the extent of control of air contaminants anticipated in the design, specifying the expected efficiency of the control devices. All obtainable data must be supplied concerning the nature, volumes, particle size, weights, chemical composition and concentrations of all types of air contaminants.

IV. Two copies of a block flow diagram showing the steps of the process and the flow of materials through the process and any control devices must be supplied.

NOTE: The application form, site plan, and equipment must be signed and stamped by an engineer registered in the State of Mississippi.

ADDITIONAL INFORMATION

I. Two copies of construction site plot plan.

II. Two copies of detailed equipment drawings.

III. Two copies of a detailed explanation of the process and control equipment.

IV. Two copies of a flow diagram of the process or operation showing control devices.

SIGNATURES: If for construction, the application must be submitted in duplicate and both copies signed and stamped by an engineer registered in the State of Mississippi, and signed by a duly authorized legal representative of the company who accepts the responsibility for the application. If for Existing Facility or Renewal of Permit to Operate, registered engineer's signature not required. All signatures and stamps must be originals on all copies, not photocopies.

Signature of Engineer registered in Mississippi

R. S. Ohlis, Jr.

Signature of person accepting responsibility for this application.

Typed name and Mississippi Registration Number

R. S. Ohlis, Jr.

Typed Name

Seal of Engineer Registered in Mississippi

TABLE 1

CODE NUMBERS FOR CONTROL DEVICES

Vapor Control Equipment

00 Group – CONTROL BY COMBUSTION

01 catalytic combustion
02 furnace combustion
03 boiler firebox
04 steam injection flare
05 venturi flare
06 direct flame combustion (afterburner)

10 Group – ADSORBERS

10 activated carbon – nonregenerative
11 activated carbon – regenerative
12 silica gel – nonregenerative
13 silica gel – regenerative
14 lithium chloride
15 activated alumina
16 activated bauxite

20 Goup – ABSORBERS

20 sieve plate tower
21 bubble-cap tower
22 packed tower

Particulate Matter – Liquid Mist Control Equipment

30 Group – DRY SEPARATORS AND FILTERS

30 simple cyclones
31 high efficiency cyclones
32 settling chamber
33 simple filters
34 baghouse (shaking)
35 baghouse (reverse jet)
36 dry collector (dynamic)

40 Group – WET COLLECTORS

40 spray chamber – no baffles
41 spray chamber – with baffles
42 wet cyclones – rotoclone
43 wet dynamic precipitator
44 venturi scrubber
45 spray tower (not absorption – scrubbers)
46 packed tower (not absorption – scrubbers)
47 condensors (tube and shell); air
48 barometric condensor with hot wells

50 Group – ELECTRICAL PRECIPITATORS

50 single stage
51 double stage
52 precipitron

60 Group

60 Counteractant

70 Group – SPECIAL

71 Jet exhausters (air dilution)
72 Mist eliminators

80 Group – Other
Specify

LDB - NRO

G E N E R A L

1. Is the facility located in a residential, commercial, industrial, or rural area? Are there many people around?

rural, no

2. Is the facility operating at time of inspection? If not, is it closed for good, for seasonal shutdown, or what?

yes

3. Is the facility operating normally? If not, why not?

yes

4. Does the facility openburn?

NO

5. Does the facility have a permit, prominently displayed? What kind of permit, when does it expire?

Tolerance Permit 17 May 74

6. What is the facility's business?

Wood treating

railroad ties
fence posts
telephone poles
Etc.

7. What is the facility's location? Give street or road address or direction to facility from a prominent land mark.

The Plant community Just off Hwy 515 East of Hwy 51

8. Report all emission points, type and amount of observed emissions.

Boiler used for power & heat

1 - Babcock & Wilcox Boiler w/ Cleaver Brooks burner:
burner model # WT 293X-BR1
Serial # BL-1080
maximum input 31,000 M Btu/hr.
Natural gas fired w/ No. 2 oil for standby

Planer Mill — 1 small L.E. Cyclone + 1 large L.E. cyclone to collect sawdust and chips - Chips are blown into a trailer for transporting to U.S. Plywood in Oxford, sawdust is put in landfills.

There is one other Large L.E. Cyclone for collecting sawdust from cutoff saws

This plant covers appox. 150 acres. I see no problems here and would recommend an operating permit

Lonnie D. Bailey

REQUEST FOR TRANSFER OF FILE

FILE NAME: KOPPERS DATE: 4/10/7

GRENADA

COUNTY: GRENADA

KEY DATA: 1/3/0 (Region) 0/9/6/0 (County) 0/0/0/1/2 (Source Number) 0/0/0 (Em. Pt.)

PRESENT STATUS:

___ - Active File

___ - Out of Business

✓ - No Permit Required

NEW STATUS:

✓ - Active File

___ - Out of Business

___ - No Permit Required

REASON FOR CHANGE

___ - Source Reactivation

___ - Change of Name

___ - Non-Permittable Source, Excluded Due to:

___ - Plant or Process Type

___ - Plant or Process Size

___ - Absence of Emissions

___ - Source Expansion or Modification

___ - Change of Location

___ - Source Deactivation

✓ - Other, Explain: Need permit, have O.P. now. have cyclones - air exhausts

EMS CODING COMPLETE?: ✓ YES ___ NO; If "NO", explain. ___

TRANSFER REQUESTED BY: MBA

TRANSFER COMPLETED: ___
File Clerk Initial

___
Date

GRENADA

File NPR

NR

*** INSPECTION ACTION INFORMATION ***

DATE SCHEDULED 08/21/75
COMPANY NAME KOPPERS CO INC
ADDRESS PO BOX 160
CITY-STATE-ZIP GRENADA MS 38901
DESCRIPTION WOOD PROCESSING

TELEPHONE 601 2264584
CONTACT R S OHLIS JR
ENGINEER MIKE KENNEDY

AGCY CODE (1-3)	COUNTY CODE (4-7)	SOURCE NUM (8-12)	EM. PT. NUM (13-15)	ACTION NUM (16-17)	CARD TYPE (18)	ACTION TYPE (52-53)	ACTION DESCRIPTION
130	0960	00012	000	08	7	16	18-MONTH INSPECTION

DATE PERFORMED (MO/DAY/YR) (54-59): July 30, 1975

COMPLETED ACTION RESULTS (69-70):

HOURS TAKEN TO COMPLETE (71-72):

RECEIVED
JUL 29 1975

UPDATE CODE (80): C

********** ADDITIONAL INFORMATION **********
(DO NOT WRITE IN THIS SPACE)

NO COMMENTS

********** FOR ENGINEERING USE ONLY **********

NEXT-ACTION NUMBER (16-17)	CARD TYPE (18)	NEXT-ACTION DATE (MO/DAY/YR) (60-65)	STAFF MEMBER (66-68)	NEXT-ACTION TYPE (73-74)	HRS TO COMPLETE (75-76)	LETTER CODE (77-78)	UPDATE CODE (80)
XX	7						N

********** ENGINEERING COMMENTS **********

CARD TYPE (18)	LINE NUMBER (19)	COMMENTS (20-54)	UPDATE CODE (80)
8	1		N
8	2		N
8	3		N
8	4		N
8	5		N
8	6		N
8	7		N

RECEIVED
JUL 25 1975
AIR & WATER POLLUTION CONTROL COMMISSION
STATE OF MISSISSIPPI

KP & VR
SERRIE
DATE 08 08 75

SIPPI AIR & WATER POLLUTION CONTROL COMMISSION

CERTIFICATION OF INSPECTION

o certify that _____ Inspector

pected _____ Facility

d at _____ Street _____ City _____ County

e date of _____ Month _____ Day _____ Year

the purpose of determining compliance with the rules and regulations of
Mississippi Air and Water Pollution Control Commission.

_____ Signature of person contacted

_____ Title

_____ Inspector (Signature)

_____ Division

Type of Inspection

_X_ 18 Month Schedule

_____ Complaint Investigation

_____ Performance Evaluation

RECEIVED

AUG 6 1975

AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

NRO
6 18 Dec 73

*** INSPECTION ACTION INFORMATION ***

DATE SCHEDULED: 01/03/74
COMPANY NAME: KOPPERS CO INC
ADDRESS: PO BOX 160
CITY-STATE-ZIP: GRENADA MS 38901
DESCRIPTION: WOOD PROCESSING

Grenada

TELEPHONE: 601 2264584
CONTACT: R S OHLIS JR
ENGINEER: CAREY STARK

AGCY CODE (1-3)	COUNTY CODE (4-7)	SOURCE NUM (8-12)	EM. PT. NUM (13-15)	ACTION NUM (16-17)	CARD TYPE (18)	ACTION TYPE (52-53)	ACTION DESCRIPTION
130	0960	00012	000	06	7	08	INSPECTION

DATE PERFORMED (MO/DAY/YR) (54-59)	COMPLETED ACTION RESULTS (69-70)	HOURS TAKEN TO COMPLETE (71-72)	UPDATE CODE (80)
1-25-74			C

********** ADDITIONAL INFORMATION **********
(DO NOT WRITE IN THIS SPACE)

1 NORTH-GENERAL INSPECTION; IS THERE
2 OPEN BURNING? COMPLETE ATTACHED

RECEIVED
JAN 28 1974
AIR & WATER POLLUTION CONTROL COMMISSION
STATE OF MISSISSIPPI

********** FOR ENGINEERING USE ONLY **********

NEXT-ACTION NUMBER (16-17)	CARD TYPE (18)	NEXT-ACTION DATE (MO/DAY/YR) (60-65)	STAFF MEMBER (66-68)	NEXT-ACTION TYPE (73-74)	HRS TO COMPLETE (75-76)	LETTER CODE (77-78)	UPDATE CODE (80)
XX	7						N

********** ENGINEERING COMMENTS **********

CARD TYPE (18)	LINE NUMBER (19)	COMMENTS (20-54)	UPDATE CODE (80)
8	1		N
8	2		N
8	3		N
8	4		N
8	5		N
8	6		N
8	7		N

KP & VR
SERRIE
DATE 1/28/74

CTS

State of Mississippi
Air and Water Pollution Control Commission

PERMIT

To Operate Air Emissions Equipment

This Certifies That

Koppers, Incorporated
Hwy. 51 South
Grenada, Mississippi

has been granted permission to operate Air Emissions Equipment in connection with the operation of the plant or process Wood Treating Plant

Operation of such a facility shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

The Mississippi Air and Water Pollution Control Commission reserves the right to withdraw this permit, after due notice, if it is found that additional equipment or alterations are necessary to prevent pollution of the air of the state as defined in the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the regulations or standards adopted and promulgated thereunder.

Issued this 21st day of February, 19 74.

AIR AND WATER POLLUTION CONTROL COMMISSION

Glen Wood Jr.
Executive Director

Expires 21st day of February, 19 77.

Facility No. 0960-00012-000

ADDITIONAL CONDITION IS ATTACHED 704

MPC FORM

ADDITIONAL CONDITION

ISSUED TO

Koppers, Incorporated
Hwy. 51 South
Grenada, Mississippi

Facility No: 0960-00012-000

14. If odors from this facility should ever result in justifiable and verifiable complaints being filed with the Mississippi Air & Water Pollution Control Commission, this facility may be required to control emissions of odorous substances to a degree greater than is now being achieved.

EMISSIONS SUMMARY FOR PERMIT DETERMINATION

KEY DATA 1130 09610 0001 21 10101
Agency County Source EmPt

PLAN REVIEW ENGINEER Carey Stark

FACILITY NAME Koppers Inc.

ADDRESS Box 160 Grenada, MS 38901

SITE LOCATION Hwy 51 S

TYPE PLANT OR PROCESS Creosoting.

NO. EMISSION POINTS 3

TYPE EMISSIONS: (X) PM ( ) SO_2 ( ) H_2S ( ) HC
( ) CO (X) Other (specify) Odor

ALLOWABLE EMISSIONS: ≈ 10 #/hr

APPLICABLE REGULATION(S): APC-S-1-3-6a

HOW EMISSIONS DETERMINED: (X) Source Test ( ) Calculation
( ) Estimate

WHO DETERMINED EMISSIONS: (X) MAWPCC ~~Engineer (Attach Calculations)~~ Inspector
( ) Facility making application
( ) Outside Consultant

AIR QUALITY IMPACT:
(To be completed by AQM Engineer) AQM Engineer _____

If total emissions are greater than 0.25 tons/day, what are:

Max. ground level concentration? _____

At what distance? _____

Percent contribution to total ambient levels caused by this source _____

If new or modified source, what is percent change in emissions inventory caused by this source:

County _____ AQCR: _____ State: _____

COMMENTS: Pneumatic system operating without V.E., but odor could be a problem. See add'l cond.

DQH

State of Mississippi

Air and Water Pollution Control Commission

PERMIT

To Operate Air Emissions Equipment

This Certifies That

Koppers Company, Inc.
Tie Plant
Mississippi

has been granted permission to operate Air Emissions Equipment in connection with the operation of the plant or process Facility

Operation of such a facility shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1966, ch. 258) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

Issued this 1st day of December, 1972.

AIR AND WATER POLLUTION CONTROL COMMISSION

Executive Director

Expires 17th day of May, 1974.

Facility No. 209-24-00-000972-00

MPC FORM 101

CONDITION NO. 15 ADDED TO TOLERANCE PERMIT

COMPLIANCE SCHEDULE
ISSUED TO

Koppers Company, Inc.
Tie Plant, Mississippi

This Compliance Schedule is issued to the above named company and is made a part of the Tolerance Permit as additional condition Number Fifteen (15). This action is taken as allowed in Section 7106-116, of the Mississippi Air and Water Pollution Control Act.

This Compliance Schedule is issued in accordance with Mississippi Air and Water Pollution Control Commission Regulation APC-S-2, Section 1.4.6. The above named company must achieve compliance under the Mississippi Air and Water Pollution Control Commission Air Quality Regulations according to the schedule set forth below.

If you do not agree to this schedule, you may request a hearing before the Commission, in writing. If no hearing is requested within thirty (30) days after receipt of this letter, this schedule shall become final and legally enforceable.

COMPLIANCE ACTION	DATE OF COMPLETION
1. Submission of plans for control	4/1/73
2. Equipment ordered	6/1/73
3. Equipment delivery and construction startup	12/17/73
4. Construction complete	2/17/74
5. Compliance proven	5/17/74

PERMIT SYSTEM VIOLATORS
INSPECTION REPORT

	COUNTY CODE	SOURCE NO.
KEY DATA	100	0209 00002

COMPANY NAME Keppers Co (Tie Mill)

ADDRESS P.O. 160
Grenada, MS.

I. General Information

(A) Person contacted Doug Meadows (Name) AST Plant Manager (Title)

(B) Was industry operating at the time of your visit? ✓ Yes ___ No

(C) Has industry ever operated under another name? ___ Yes ✓ No

(1) If Yes, what name and address:

(2) When did the name change occur?

II. Questions about Application:

(A) Does industry say they made application on time? ✓ Yes ___ No

(1) If Yes, could they show you a copy

What was the date on the application ___/___/___

(2) If No, why did they not apply?

III. Permit Information

(A) Could industry show you any type of permit from the Air Division of the Mississippi Air and Water Pollution Control Commission ✓ Yes ____ No

(1) If Yes, what type:
(a) Construction ____
(b) Performance Evaluation ____
(c) Tolerance Evaluation ✓
(d) Operate ____
(e) Temporary ____

(2) What was the date of issuance on the permit they showed you 1st / Dec / 1972.

Date of expiration 17th / May / 1974.

Permit Number 209-24-00-0009 72-00 732

IV. Emissions to the atmosphere:

(A) Does industry have

Equip.	Yes	No	Largest Size	Quantity
Boilers	✓		* 1 Btu/hr	* 20x10⁶ Btu/hr
Furnace		✓	* Btu/hr	*
Cyclone	✓	Elec		*
Scrubber		✓		*
Bag House		✓		*
Elec. Precip.		✓		*
Teepee Burner		✓		*
Incinerator	✓		* lb/hr	*
Open Burn	✓			
Air Convey. Sys.	✓			
Stacks	✓			*
Fugitive Dust		✓		
Other		✓		

V. Recommendations and Conclusions of Inspector

(A) In your opinion does the industry fall within the Permit regulations of the Air Division of the Mississippi Air and Water Pollution Control Commission ✓ Yes ____ No

(B) Below make any comments which may be helpful in proving guilt if industry is called in for a hearing.

Have Tolerance Permit - Compliance Schedule ect.

I. Check list before leaving

(A) Check below the forms given to client. Give everyone you visit a copy of the following:

(a) Permit Regulations APC-S-2 ✓

(b) Air Quality Regulations APC-S-1 ✓

(c) Emergency Episode Regulations ✓

Bill Dixon
Signature of Inspector

1/19/73
Date Inspected

(a) Source Number	(b) Waste Material Type	Percent Combustible	Amount Per Year	Units	Method of Disposal	Capacity Lb/Hr	Rate, Pounds Average	Rate, Pounds Maximum	Auxiliary Fuel Used
1	Wood Waste	100%	750	tons	Land Fill				
2	Bands	Not			" "				

(a) Give a different number to represent each source and then give stack, control, and emission data opposite the same number on Section V.
(b) Rubbish, garbage, mixed garbage and rubbish, waste paper, wood chips or sawdust, etc.
(c) Tons, pounds, or gallons/year.
(d) Open burning dump; incinerator, single chamber; multiple chamber; rotary, conical burner.
(e) Indicate whether auxiliary fuel is used in incinerators and pit burning, and the amount.

SECTION V AIR CLEANING EQUIPMENT, STACK DATA AND CONTAMINANTS

Please list future equipment: none
Cost for running control equipment (if applicable):
Cost for disposing of collected pollutant (if this is a credit, so indicate):

(a) Source Number	(b) Type of Air Cleaning Equipment	Installation Date	Pollutant Removed	(c) Efficiency Design	(c) Efficiency Operating	Stack Height	Inside Diam. Top-Ft.	(d) Velocity Ft./Sec.	Temp °F	(e) Flow CMF	(f) (g) Amount of Contaminants
										)	Fugitive Tons/Yr
										)	Emission 25.4
										)	
										)	Calculated from
										)	vapor pressure
										)	curves and volum
										)	utilized
										)	
										)	
										)	

(a) Give numbers corresponding to each source referred to in Sections II, III, and IV.
(b) High, medium or low efficiency; wet scrubber, gravity collector, centrifugal collector, electrostatic precipitator: gas scrubber: mist eliminator; high or low velocity: fabric filter; high, medium or low temperature: after burner; catalytic or direct flame: desulfurization.
(c) Give efficiency in terms of pollutant removed.
(d) Values should be representative of average flow conditions for hours of operation.
(e) At actual flow conditions.
(f) Particulate, sulfur oxides, nitrogen oxides, carbon monoxide, hydrocarbons, etc.

SECTION III PROCESS EMISSIONS

Normal operating schedule: 24 Hours per day 6 Days per week 52 Weeks per year
Seasonal and/or peak operating period: N/A
Dates of annually occurring shutdowns: None
Indicate future increase or decrease in operations: None
If intermittent operation only, give average hours per week:

(a) Source Number	(b) Processes or Operations Relating Contaminants To the Atmosphere	Installation Date	Raw Materials Used For Process Type (c)	Quantity/Wet Basis Annual (d)	Units	Finished Products of Process Type (e)	Quantity/Wet Basis Annual	Units	Process Rate Lbs/Hr Design Maximum
						Cross Ties			
						Poles		Approx.	
						Lumber			48,000
						Piling			
	Wood Preserving	1906	4 million Cu.Ft. of Wood Products						Actual D
			4 million gallons of preservative						

If additional pages are required, duplicate this form.
(a) Give a different number to represent each source and then give stack, control, and emissions data opposite the same number on Section V.
(b) Sulfuric acid-chamber, aluminum smelting-crucible furnace, iron smelting-cupola, cement manufacture-dry process, solvent cleaning, etc.
(c) Lime consumed, tons; ore processed, tons; acid used, gallons; fuel used, gallons; etc.
(d) Pounds, tons, or gallons.
(e) Steel produced, tons; cement produced, bbl; number of automobiles manufactured; etc. For intermittent processes, indicate average number of hours per week of operation so that estimates of yearly emissions may be obtained.

SECTION IV SOLID WASTES DISPOSAL

Refuse disposed of: ___ On site x Off site-Location of disposal site and/or name of hauler:
Normal on-site combustion operating schedule: ___ Hours per day 0 Days per week 0 Weeks per year
Seasonal and/or peak operation period: (Specify) N/A
Indicate increase or decrease in solid wastes disposal rate: None at present
List proposed new equipment: None at present

AIR QUALITY SURVEY -- QUESTIONNAIRE TYPE C

SECTION I GENERAL INFORMATION

Firm, institution, or establishment name: Koppers Company, Inc. - Forest Products Division

Description or type of industry: Wood Treating

Person to contact regarding this report: R. J. Ohlis, Jr. Title Plant Manager Telephone 226-4584

Mailing address: P.O. Box 160 (Street or Box Number) Grenada (City) Grenada (County) Mississippi (State) 38901 (Zip)

Plant, institution, or establishment address: Tie Plant (Street or Box Number) Grenada (City) (County) Miss. (State) 38901 (Zip)

Information is to be representative of calendar year: 1970 Number of employees: 130

Approximate land area at plant location: 150 acres

Enclose a sketch of layout if there is more than one building and a sketch to indicate flow of raw materials to combustion or process equipment to collectors to stacks.

SECTION II FUEL COMBUSTION FOR GENERATION OF HEAT, STEAM, AND POWER

Normal operating schedule for fuel use: 24 Hours per day 6 Days per week 52 Weeks per year 5

Dates of annually occurring shutdowns: None

Delivered cost of each fuel: $/quantity:

List separately future fuel combustion equipment and expected date of installation:

(a) Source Number	(b) Type of Unit	(c) Rated Input	Instal-lation Date	(d) Type of Fuel	(e) Quantity Per Year	(f) Units	% For Space Heating	Heat (g) Content BTU/Quan	(gh) % Sulfur	(gh) % Ash
1	Boiler	20,000 lbs./hr.		Natural Gas	96821	MCF		Miss. Valley Gas		
2	Boiler	"		Wood Waste*	240	Tons				

*Should be eliminated in a few months.

If additional pages are required, duplicate this form.

(a) Give a different number to represent each source and then give the required data opposite the same number, for stack, control, and emission data on Section V.

(b) Hand-fired; underfeed, traveling-grate or spreader stoker; cyclone furnace, pulverized, wet or dry bottom with or without fly ash reinjection; rotary or gun type oil burner; etc.

(c) Nameplate data are sufficient (give rated or maximum capacity, which ever is greater).

(d) Coke, bituminous coal, anthracite coal; No. 1, 2, 4, 5, and 6 fuel oil; natural gas; LPG; refinery or coke oven gas; wood; etc.

(e) Fuel data are to be reported on an "as burned" basis.

(f) Solid fuel, tons; liquid fuel, gallons; gaseous fuel, 1000 cubic feet.

(g) If unknown, please give name and address of fuel supplier.

DQH

Air and Water Pollution Control Commission

PERMIT

To Operate Air Emissions Equipment

This Certifies That

Koppers Company, Incorporated

Tie Plant, Mississippi

has been granted permission to operate Air Emissions Equipment in connection with the operation of the plant or process Facility

Operation of such a facility shall be in accordance with the provisions of the Mississippi Air and Water Pollution Control Act, (Mississippi Laws, 1968, ch. 250) and the rules adopted and promulgated thereunder, or this permit may be revoked by the Mississippi Air and Water Pollution Control Commission. The plans, specifications, schedules, dates and other data submitted to the Commission are filed with and considered as a part of this permit.

Issued this 1st day of November, 19 72.

AIR AND WATER POLLUTION CONTROL COMMISSION

Executive Director

Expires 27th day of April, 19 74.

Facility No. 209-24-00-0009972-00

MPC FORM

late

Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

COMMISSIONERS
JAMES W. CARRAWAY, CHAIRMAN
BASSFIELD
OIL & GAS BOARD
QUINCY R. HODGES
BOARD OF HEALTH
JOE D. BROWN
MARINE CONSERVATION
COMMISSION
W. J. DEMORAN
W. E. GUPTON
JACKSON
HERMIT A. JONES
CANTON
RAY TRIBBLE
MONEY

COMMISSIONERS
GAME & FISH COMMISSION
AVERY WOOD
BOARD OF WATER
COMMISSIONERS
JACK PEPPER
CHARLES W. ELSE
YAZOO CITY

ASSOCIATE MEMBERS
STATE PARK SYSTEM
DR. JOHN M. KING
A & I BOARD
PAUL BURT
GEOLOGICAL SURVEY
W. H. MOORE

Glen Wood, Jr.
EXECUTIVE DIRECTOR
POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING
JACKSON, MISSISSIPPI 39205

A Compliance Schedule
for the
Attainment and Maintenance
of the
Emission Standards as Set Forth in Regulations APC-S-1 of the
Mississippi Air and Water Pollution Control Commission

****

STEP I: TEST AND EVALUATION--Evaluate existing emissions by source test as prescribed by the Mississippi Air and Water Pollution Control Commission, and submit results to this agency.

Date by which STEP I must be completed
4 / 73.
Month Year

STEP II: DETERMINE PERCENT REDUCTION--Calculate the percent of emission reduction that is required from the following formula.

$$\% \text{ Reduction Required} = \frac{(e-s)}{e} \times 100 = \_\_\_\_\_.$$

Where e=existing emissions
s=allowable emissions as set forth in Regulation APC-S-1.

STEP III: MODIFICATION--You are hereby required to design and construct or obtain and install, the necessary control equipment or to implement new techniques such that you shall realize the above calculated percent reduction in your emissions to the atmosphere on or before 4 / 74.
Month Year

STEP IV: PROGRESS REPORTS--You are further required to submit progress reports on the following dates:

Month	Year	
4	93	Progress Report I
10	93	Progress Report II
4	94	Progress Report III

Should any portion of this Compliance Schedule be violated, you will be considered in violation of the rules and regulations of the Mississippi Air and Water Pollution Control Commission and subject to fines up to $3,000.00 per day for the operation of your facility.

This Compliance Schedule is hereby issued to:

Facility Name: Koppers Co., Inc

Facility Address: Tie Plant, Miss.

as required by Regulation APC-S-2, Section 1.4.6, for the specific purpose of reducing the amount of air contaminants being emitted from the above named facility.

Date issued: 10 / 27 / 92.
Month / Day / Year

JAN 15 1973

MISSISSIPPI
AIR AND WATER POLLUTION CONTROL COMMISSION
P. O. Box 827
JACKSON, MISSISSIPPI 39205

APPLICATION FOR PERMIT TO OPERATE EXISTING FACILITY

RECEIVED
AUG 24 1972
AIR & WATER POLLUTION CONTROL COMMISSION
STATE OF MISSISSIPPI

DIVISION OF AIR POLLUTION

This Space For Use By Approving Agency

Date Received: _____

Facility No.: 2092400000097299

AQCR: _____

FORM A GENERAL INFORMATION

1. Owner of Source. Company and Division Name.

2. Mailing Address.
Address for plant location--not address of company headquarters. County in which plant is located. Location by UTM coordinates or by latitude and longitude.

3. City or Town, State, Zip Code; and Telephone Number of Person Completing Form.

4. Name and Title of Person Completing Form.

5. Person to Contact on Air Pollution Matters.
Name, title, and telephone number of person on plant site to contact about Air Pollution matters.

6. Major Activity. Give Standard Industrial Classification (4 digits) number. Check type of business.

7. Signature of Owner or Authorized Company Official.
Name, title, and telephone number of official who accepts responsibility for the accuracy of information submitted on the forms.

FORM B FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

Form B has 3 pages; each is a continuation of the equipment information from the page before. Please fill in as completely as possible, listing all fuel burning equipment of capacity greater than 350,000 BTU's per hour.

1. Fill in company name, address, operating schedule, and year for which data is given at top of page. Use data for most recent calendar year available.

2. Reference Number. Use an identifying number for each boiler, furnace, kiln, etc. and use the same reference number on each of the three pages to identify information for the same unit.

3. Manufacturer and Model Number. Nameplate data for boiler, furnace, kiln, etc. Waste gas flares should also be included on this form and stationary internal combustion engines over 3000 horsepower.

4. Rated Capacity in Millions of BTU per hour.

5. Type of Burner Unit. Use Codes (1*) at bottom of form. If not listed put (11) and specify.

6. Usage. Type of fuel burning equipment. Use codes (2*) at bottom of form. If not listed put (5) and specify.

7. Heat Usage. Percent of heat used for process and percent for space heating.

Page 2, Form B

8. Reference Number. Continue reference numbers from Page 1, using same number to identify information for same unit.

9. Stack Parameters.
Stack Height in feet from ground.
Stack Inside Exit Diameter in feet.
Exit Gas Velocity in feet per second. (SCFM may be used if velocity is not known; specify units as SCFM if used.)
Exit Gas Temperature in degrees F.

10. Fuel Data.
Fuel Type. Coal, Gas, #2 Oil, #6 Oil, etc.
Maximum Capacity burned per hour. Gallons, pounds, cubic feet, etc. Specify. Average amount Burned per Year. Gallons, Tons, Million cubic feet, etc. Specify. Heat Content of Fuel. BTU per Gallon, pound, cubic foot, etc. Specify.
Average Percent Sulfur Content.
Average Percent Ash Content.
(If percent sulfur and percent ash are not known, list fuel type and supplier's name at bottom of page in spaces provided so that information may be obtained.)

FORM B FUEL BURNING EQUIPMENT
(Except for Refuse Disposal)

1 Company Name	Address	for Agency use Only
Koppers Company, Inc. Forest Products Division	P. O. Box 160 Grenada, Ms. 38901	

Operating Schedule	Information for Calender Year	Date
24 Hours / Day 6 Days / Week 52 Weeks / Year	19 71	8-21-72

2 Reference Number	3 Manufacturer and Mobel Number	4 Rated Capacity 10^6BTU/hr	5 Type of Burner Unit (use code 1*)	6 Usage (use code 2*)	7 Most Usage % Process	7 Most Usage % Space heat
1	B & W Boiler Model 200-BR-1	20x10^6BTU/hr.	7	1	100	0

1* BURNER CODES

1. Cyclone furnace
2. Pulverized coal
3. Spreader Stoker
4. Hand fired
5. Other stoker (specify)
6. Multiple port gas
7. Forced draft gas
8. Atomizing Oil (Stove of Air)
9. Atomizing Oil (Mechanical)
10. Rotary Cup Oil
11. Others (specify)

2* USAGE CODES

1. Boiler, Steam
2. Boiler, Other (specify)
3. Air Heating for Space Heating
4. Air Heating for Process Usage
5. Others (specify)

FORM B PAGE 3

(FOR AGENCY USE ONLY)

11	12				13			
Reference Number	Air Pollution Control Equipment				Emissions (Tons/Year)			Basis of Estimate
	Manufacturer and Model Number	Type* (Use Table 1)	Efficiency		Particulate	So_2	Other (specify)	
			Design	Actual				
1	NONE				1.04	.02		HEW

*For Wet Scrubber give
Gallons per minute Water
Flow and Water Pressure if known.

11. Reference Number. Use same number as on Pages 1 & 2 of form to identify information for same process or operation.

12. Process Emissions. Give in pounds per hour and tons per year the amount of emissions from the process or operation of each of the two pollutant categories so that process rates versus emission rates may be compared with Regulations. Identify the units of measure used.
Give the basis of the estimates of pollutants emitted (stack tests, Material Balance, emission factors, etc.)

FORM D REFUSE DISPOSAL AND INCINERATION

A. Company Name, Address & Year for which information is given at top of page.

B. Type Waste. Describe type of waste materials (paper, garbage, wood crates, sawdust, coal refuse, etc.)

C. Maximum amount per day in pounds.

D. Average amount per year in tons.

E. Method of Disposal. Use codes at bottom of form (1*).

Page 2, FORM D
INCINERATION

1. Type of Incinerator. Check which applies.

2. Manufacturer, Model Number, Capacity in Pounds per Hour and type waste on which Capacity is based (Nameplate Data).

3. Average Quantity Burned in Pounds per Day and Tons per Year.

4. Operating Schedule for Incinerator. Hours per Day and Days per Year incinerator is in operation.

5. Auxiliary Fuel Date.
   Type. (Natural Gas, #2 Oil, etc.)
   Amount per year. Specify Gallons, Cubic Foot, etc.
   Heat content of Fuel. BTU per Gallon, Cubic Foot, etc.
   Percent Sulfur. Average Sulfur Content of Auxiliary Fuel.
   Percent Ash. Average Ash Content of Auxiliary Fuel.
   Fuel Supplier's Name if Ash and Sulfur Content are not known.

6. Pollution Control Equipment on Incinerator.
   Manufacturer of Control Device.
   Model Number of Control Device.
   Percent efficiency of Control if Known.
   Type. Venturi Scrubber, Baghouse, etc. as outlined on other forms.
   GPM Water Flow if Control Device is a Wet Scrubber.

7. Stack Data.
   Height in Feet above Ground.
   Inside Exit Diameter in Feet.
   Exit Gas Velocity in Feet per Second.
   Exit Gas Volume if Velocity not Known.
   Exit Gas Temperature in Degrees F if known.

8. Estimated Emission from Refuse Incineration. Give amounts in tons per year and basis of estimates for each of the five listed pollutants.

(AGENCY USE ONLY)

5. Auxiliary Fuel:
   - Type _____
   - Amount/Year (Specify Units) _____
   - Heat Content _____
   - Percent Sulfur _____
   - Percent Ash _____
   - Supplier's Name _____

6. Pollution Control Equipment:
   - Manufacturer _____
   - Model Number _____
   - % Efficiency _____
   - Type _____
   - GPM Water Flow (If Wet Scrubber) _____

7. Stack Data:
   - Height _____ Feet
   - Inside Exit Diameter _____ Feet
   - Exit Gas Velocity _____ Feet/Sec.
   - Exit Gas Volume _____ SCFM
   - Exit Gas Temp. _____ ^{o}F.

8. Estimated Emissions From Refuse Incineration:

Name:			Basis of Estimates:
Particulates	_____	Tons/Year	_____
Sulfur Oxides	_____	"	_____





AIR QUALITY SURVEY -- QUESTIONNAIRE TYPE C

SECTION I GENERAL INFORMATION

Firm, institution, or establishment name: Koppers Company, Inc. - Forest Products Division
Description or type of industry: Wood Treating
Person to contact regarding this report: R. J. Ohlis, Jr. Title Plant Manager Telephone 226-4584
Mailing address: P.O. Box 160 (Street or Box Number) Grenada (City) Grenada (County) Mississippi (State) 38901 (Zip)
Plant, institution, or establishment address: Tie Plant (Street or Box Number) Grenada, Miss. (City) (County) (State) (Zip)
Information is to be representative of calendar year: 1970 Number of employees: 130
Approximate land area at plant location: 150 acres
Enclose a sketch of layout if there is more than one building and a sketch to indicate flow of raw materials to combustion or process equipment to collectors to stacks.

SECTION II FUEL COMBUSTION FOR GENERATION OF HEAT, STEAM, AND POWER

Normal operating schedule for fuel use: 24 Hours per day 6 Days per week 52 Weeks per year 52
Dates of annually occurring shutdowns: None
Delivered cost of each fuel: $/quantity:
List separately future fuel combustion equipment and expected date of installation:

(a) Source Number	(b) Type of Unit	(c) Rated Input	Instal-lation Date	(d) Type of Fuel	(e) Quantity Per Year	(f) Units	% For Space Heating	Heat (g) Content BTU/Quan	(gh) % Sulfur	(gh) % Ash
1	Boiler	20,000 lbs./hr.		Natural Gas	96821	MCF		Miss. Valley Gas		
2	Boiler	"		Wood Waste*	240	Tons				
				*Should be eliminated	in a few months.					

If additional pages are required, duplicate this form.
(a) Give a different number to represent each source and then give the required data opposite the same number, for stack, control, and emission data on Section V.
(b) Hand-fired; underfeed, traveling-grate or spreader stoker; cyclone furnace, pulverized, wet or dry bottom with or without fly ash reinjection; rotary or gun type oil burner; etc.
(c) Nameplate data are sufficient (give rated or maximum capacity, which ever is greater).
(d) Coke, bituminous coal, anthracite coal; No. 1, 2, 4, 5, and 6 fuel oil; natural gas; LPG; refinery or coke oven gas; wood; etc.
(e) Fuel data are to be reported on an "as burned" basis.
(f) Solid fuel, tons; liquid fuel, gallons; gaseous fuel, 1000 cubic feet.
(g) If unknown, please give name and address of fuel supplier.
(h) Sulfur and ash content for each fuel should be a weighted average.

Normal operating schedule: 24 Hours per day 6 Days per week 52 Weeks per year
Seasonal and/or peak operating period: N/A
Dates of annually occurring shutdowns: None
Indicate future increase or decrease in operations: None
If intermittent operation only, give average hours per week:

(a) Source Number	(b) Processes or Operations Relating Contaminants To the Atmosphere	Installation Date	Raw Materials Used For Process: Type (c)	Quantity/Wet Basis: Annual (d)	Units	Finished Products of Process: Type (e)	Quantity/Wet Basis: Annual	Units	Process Rate Lbs/Hr Design or Maximum
						Cross Ties			
						Poles		Approx.	
						Lumber			48,000 #/M
						Piling			
	Wood Preserving	1906	4 million Cu.Ft. of Wood Products						Actual Date
			4 million gallons of preservative						

If additional pages are required, duplicate this form.
(a) Give a different number to represent each source and then give stack, control, and emissions data opposite the same number on Section V.
(b) Sulfuric acid-chamber, aluminum smelting-crucible furnace, iron smelting-cupola, cement manufacture-dry process, solvent cleaning, etc.
(c) Lime consumed, tons; ore processed, tons; acid used, gallons; fuel used, gallons; etc.
(d) Pounds, tons, or gallons.
(e) Steel produced, tons; cement produced, bbl; number of automobiles manufactured; etc.
For intermittent processes, indicate average number of hours per week of operation so that estimates of yearly emissions may be obtained.

SECTION IV SOLID WASTES DISPOSAL

Refuse disposed of: ___ On site x Off site-Location of disposal site and/or name of hauler:
Normal on-site combustion operating schedule: ___ Hours per day 0 Days per week 0 Weeks per year
Seasonal and/or peak operation period: (Specify) N/A
Indicate increase or decrease in solid wastes disposal rate: None at present
List proposed new equipment: None at present

(a) Source Number	(b) Type	Percent Combustible	Amount Per Year	Units	Method of Disposal	Capacity Lb/Hr	Rate, Pounds Average	Rate, Pounds Maximum	Auxiliary Fuel Used
1	Wood Waste	100%	750	tons	Land Fill				
2	Bands	Not			" "				

(a) Give a different number to represent each source and then give stack, control, and emission data opposite the same number on Section V.
(b) Rubbish, garbage, mixed garbage and rubbish, waste paper, wood chips or sawdust, etc.
(c) Tons, pounds, or gallons/year.
(d) Open burning dump; incinerator, single chamber; multiple chamber; rotary, conical burner.
(e) Indicate whether auxiliary fuel is used in incinerators and pit burning, and the amount.

SECTION V AIR CLEANING EQUIPMENT, STACK DATA AND CONTAMINANTS

Please list future equipment: none
Cost for running control equipment (if applicable):
Cost for disposing of collected pollutant (if this is a credit, so indicate):

(a) Source Number	(b) Type of Air Cleaning Equipment	Instal-lation Date	Pollutant Removed	(c) Efficiency Design	(c) Efficiency Operating	Stack Height	Inside Diam. @ Top-Ft.	(d) Velocity Ft./Sec.	Temp °F	(e) Flow Rate CMF	(f) (g) Amount of Contaminants Type	Tons/Yr.
										)	Fugitive	
										)	Emission 25.4	
										)		
										)	Calculated from	
										)	vapor pressure	
										)	curves and volume	
										)	utilized	
										)		
										)		
										)		

(a) Give numbers corresponding to each source referred to in Sections II, III, and IV.
(b) High, medium or low efficiency; wet scrubber, gravity collector, centrifugal collector, electrostatic precipitator: gas scrubber: mist eliminator; high or low velocity: fabric filter; high, medium or low temperature: after burner; catalytic or direct flame: desulfurization.
(c) Give efficiency in terms of pollutant removed.
(d) Values should be representative of average flow conditions for hours of operation.
(e) At actual flow conditions.
(f) Particulate, sulfur oxides, nitrogen oxides, carbon monoxide, hydrocarbons, etc.

POINT SOURCE DATA FORM

SOURCE NUMBER	REGION	SIC	SITE	PROCESS CODE	DESCRIPTIVE NAME (a)	COORDINATES KM X	COORDINATES KM Y	POLITICAL
1	13	5281	3	01	KOPPERS CO			0

SOURCE NUMBER	MAXIMUM PROCESS WEIGHT RATE (lb/hr)	NORMAL PROCESS WEIGHT RATE (lb/hr)	COMMENTS (a)	MAXIMUM BOILER CAPACITY (10^6 BTU/hr)	(d) EF	COAL (tons/year)	(d) EF	RESIDUAL OIL (10^3 Gal/year)
1	5341	5341						

SOURCE NUMBER	% ASH COAL	SULFUR CONTENT COAL	SULFUR CONTENT RESID.	SULFUR CONTENT DIST.	SULFUR CONTENT NAT. GAS	CONTROL EFFICIENCY PART	CONTROL EFFICIENCY SO_2	DEVICE INDENT	COMMENTS (a)	HAN PART.	HAN SO_2
1											

SOURCE NUMBER	COMMENTS (a)

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 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

(a) Letters and numbers may be put in these columns
(b) Owner → Private = 1; Local = 2; State = 3; Federal = 4; Utilities = 5.
(c) Type → Process = 1; Fuel Combustion = 2; Solid Waste Disposal = 3.
(d) EF → refers to emission factor set number associated with emission factors on emission factor sheet.

All decimal points are implied and are signified by a ▼ between columns.