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217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- NSPS SOURCE

PERMITTEE

**Draft**

Kerr-McGee Chemical LLC  
 Attn: Nick Bock  
 #2 Washington Avenue  
 Madison, Illinois 62060

Application No.: 73120119                      I.D. No.: 119065AAG  
Applicant's Designation: KERRMCGEE   Date Received: August 3, 1995  
Subject: Wood Treatment Plant  
Date Issued: July 20, 2001                      Expiration Date: July 20, 2006  
Location: #2 Washington Avenue, Madison

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of a wood treatment plant including four wood treating retorts controlled by a venturi scrubber; four vacuum systems associate with the retorts, controlled by a packed-bed scrubber; various storage and process tanks\*; mills (unloaders No. 1 and 2, each with cyclone, A and B with cyclone, Railfast process (attaching plates to the ties with epoxy) with baghouse and switch tie grading and sorting); a boiler; a wastewater treatment facility (wastewater storage tank, primary oil/water separators\*, a secondary oil/water separator, a biological treatment, biological treatment surge tank, a groundwater oil/water separator\*, and a scrubber surge tank); lift stations\* and other ancillary units, pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):  
 \*Also controlled by the venturi scrubber that serves the four wood treating retorts.

- 1a. This federally enforceable state-operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for criteria pollutants, 10 tons/year for any HAP and 25 tons/year of all combined HAPs). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- d. Even though this permit restrict the overall operation and emissions of the facility so that it is not a major source, this permit does not alter the Permittee's legal obligation under 35 IAC 201.142 to obtain a construction permit prior to commencing construction or modification of

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an emission unit or air pollution control equipment except as specifically exempted pursuant to 35 IAC 201.146.

- 2a i. This boiler is subject to a New Source Performance Standard (NSPS) for small steam institutional boilers, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
- ii. Sulfur dioxide emissions from the boiler shall not exceed the applicable limits, pursuant to the NSPS, 40 CFR 60.42(c).
- iii. Opacity from the boiler shall not exceed the applicable limit, pursuant to the NSPS, 40 CFR 60.43(c), that is 20% opacity (6-minute average) during normal operation except for one 6-minute period per hour of not more than 27% opacity.
- iv. At all times, the Permittee shall to the extent practicable, maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required by the NSPS, 40 CFR 60.11(d).
- b i. The maximum firing of the boiler shall not exceed 33.5 million BTU/hour.
- ii. The only fuel fired in the boiler shall be natural gas and distillate fuel oil. Organic liquid by-products or waste material shall not be used in this boiler.
- iii. The Permittee shall not utilize distillate fuel oil in the boiler with a sulfur content greater than the larger of the following two values, so as to assure compliance with 35 Ill. Adm. Code 214.122. The Permittee shall comply with this requirement by meeting the fuel supplier certification requirements described in 40 CFR 60.48c.
- A. 0.28 weight percent, or
- B. The weight percent given by the formula:
- $$\text{Maximum wt. percent sulfur} = (0.000015) \times (\text{Gross heating value of oil, Btu/lb}).$$
- iv. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- c. Emissions of nitrogen oxide (NOx), carbon monoxide (CO) and sulfur dioxide (SO<sub>2</sub>) shall not exceed the following limits.

Oil Usage		NOx		CO		SO <sub>2</sub>	
<u>gal/Mo</u>	<u>gal/Yr</u>	<u>Lb/Hr</u>	<u>Ton/Yr</u>	<u>Lb/Hr</u>	<u>Ton/Yr</u>	<u>Lb/Hr</u>	<u>Ton/Yr</u>
174,333	523,000	4.78	5.23	1.21	1.31	9.44	10.34

Natural gas emissions			
NOx		CO	
<u>Lb/Hr</u>	<u>Ton/Yr</u>	<u>Lb/Hr</u>	<u>Ton/Yr</u>
4.46	19.55	1.11	4.89

- d. These limits were established based on standard USEPA, AP-42 emission factors for the combustion of natural gas and for the combustion of distillate fuel oil as well as information provided in the permit application. Sulfur dioxide limits were based on compliance with 35 Ill. Adm. Code 214.122(b)(2), which is more stringent than the NSPS. Compliance with these annual limits shall be determined from a running total of 12-month of data, compiled at least semi-annually.
- 3a. Operation of the four wood treating retorts combined, shall not exceed the following. Compliance with the annual limit shall be determined from a running total of 12-month of data.

Charge		
<u>Charge/month</u>	<u>Charges/year</u>	<u>Cft/year</u>
372	4,380	12,176,400

Note: one average charge is approximately 2780 cubic feet

- b i. The VOM emission associated with operating of the retort doors for unloading and recharging shall not exceed the following limits:

Emission factor	Emission limits	
<u>Lb/charge</u>	<u>Lb/month</u>	<u>Tons/year</u>
<u>1.5</u>	<u>558</u>	<u>3.24</u>

These limits are based on the maximum number of charges for the four retorts, operating at 8,760 hours/year, and site-specific emission factors, as provided in the permit application.

- ii. This permit is issued based on VOM emissions from operating the retorts doors qualifying for the exclusion from control requirements in 35 IAC 219.980 (d), so that use of add-on control is not required.
- c i. The wood treating retorts shall be operated in accordance with good air pollution control practices to minimize emission of VOM, these practices shall be kept in writing, reviewed at least every two years or if significant changes are made to wood treating process. These practices shall include the following measures as a minimum. (See also Condition 12(a)).

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- A. Maintenance of the retorts seals.
- B. Appropriate stacking of the charge in the retorts.
- C. Maintain adequate vacuum.
- D. Identification of Maximum pressure and temperature setting during impregnation.
- E. Coordination of retorts operation to avoid overloading the scrubber system, e.g., limits on the number of vacuum pumps operating at the same time.
- F. Correct draining prior to operation of retorts.
- G. Prompt collection of any spill.
- H. Correction of problems before reassuming operation.

ii. The Permittee shall operate the scrubbers in accordance with written operating procedures. These procedures shall identify acceptable ranges for scrubber operating parameters as related to control of VOM emissions, including a schedule for replacement of scrubber oil.

iii. The Permittee shall maintain the records required by 35 IAC 219.991(a)(2) for the scrubbers.

iv. The operation of the retorts, which include the vacuum systems, shall be controlled to achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, pursuant to 35 IAC 219.986(a).

v A. The VOM emission associated with operation of the retorts, not including the vacuum system, shall not exceed the following limits. These limits also account for VOM emission from tanks that are controlled by the venturi scrubber

<u>Lb/Hr</u>	<u>Tons/year</u>
<u>0.50</u>	<u>2.20</u>

B. The VOM emission associated with operation of the vacuum system on the wood treating retorts, which are controlled by a packed-bed scrubber, shall not exceed the following limits.

<u>Lb/Hr</u>	<u>Tons/year</u>
<u>0.50</u>	<u>2.20</u>

4. Leaks from components (valves, pumps, flanges, etc) in VOM service, shall be subject to the following control measures pursuant to 35 IAC 219.986(e).

a. Repair any component from which a leak of VOM can be observed. The repair shall be completed no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the next process unit shutdown, in which case the leaking component must be repaired before the unit is restarted.

b. For any leak, which cannot be readily repaired within one hour after

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detection, records shall be kept. These records shall be maintained by the owner or operator for a minimum of two years. Copies of the records shall be made available to the Agency or USEPA upon verbal or written request.

- 5a. The annual throughput of material of the source shall not exceed 36.2 million cubic feet based on amount of untreated wood received at the source (approx. 10,000,000 railroad tie equivalents at 3.62 cubic feet per railroad tie).
- b i. Emissions of Particulate matter into the atmosphere, other than fugitive emissions as defined in 35 IAC 211.2490 from any process emission unit shall not exceed 0.03 gr/scf during any one hour period, or there shall be no visible emission from such unit, except for fugitive particulate matter, pursuant to 35 IAC 212.324(b) and (d).
- ii. In no case shall emission of fugitive particulate matter from any process emission unit, exceed 20 percent opacity pursuant to 35 IAC 212.316(f).
- c i. The Permittee shall follow good air pollution control practices to minimize emission of particulate matter from process units, as further specified in 35 IAC 213.324(f).
- ii. The Permittee shall maintain the records required by 35 IAC 212.324(g) to demonstrate use of good air pollution practice.
- 6a i. Fugitive particulate matter emission from roadway or parking area shall not exceed 10 percent opacity pursuant to 35 IAC 212.316(c).
- ii. Emission of fugitive particulate matter from any process, including any material handling or storage activity, shall not be visible by an observer looking generally toward the zenith at a point beyond the property line of the source, pursuant to 35 IAC 212.301.
- b i. The Permittee shall carry out measures to minimize emission of fugitive particulate from vehicle traffic on roadways and other fugitive emission units in accordance with written fugitive dust operating program. This program shall provide for all normal traffic pattern roads and parking facilities which are located at the source to be paved or treated with water, oils or chemical dust suppressants, pursuant to 35 IAC 212.306.
- ii. The Permittee shall prepare and design this operating program, consistent with the requirements set forth in 35 IAC 212.310 and 212.312 to significantly reduce fugitive particulate matter emissions. Such operating program shall be submitted to the Agency for its review.
- 7a i. This permit is issued based on negligible emissions of volatile organic material from the wastewater treatment facility. For this purpose, emissions from the wastewater treatment facility shall not exceed nominal emission rate of 0.44 tons/year.

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- ii. The vapor pressure of effluent handled by effluent water separator in the wastewater treatment facility shall not exceed 2.5 psia at 70 °F. This limit is imposed to address 35 IAC 219.141. Note: Effluent water separator that receives effluent water containing 200 gal/day or more of organic material from any equipment processing, refining, treating, storing, or handling material equipped with air pollution control equipment capable of reducing by 85% or more the uncontrolled organic material emitted to the atmosphere, unless the vapor pressure of the organic material is below (2.5 psia at 70 °F).
- b. This permit is issued based on negligible emissions of volatile organic material, directly associated with the storage tanks, work tanks and reclaim tank. For this purpose, emissions from these tanks that are not exhausted to the venturi scrubber shall not exceed a nominal emission rate of 0.44 tons/year.
- c i. New storage tanks including the new creosote storage tanks built pursuant to Permit 98040024, that have capacity that is equal or greater 40 m<sup>3</sup> (approx. 10,570 gallons) are subject to New Source Performance Standards (NSPS), 40 CFR 60 Subpart Kb. the Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
- ii. As each tank has a capacity greater than 151 m<sup>3</sup> (approx. 39,890 gallons) and is only used to store volatile organic liquid with maximum true vapor pressure that is less than 3.5 kPa (approx. 51 psia), the only requirement under the NSPS that apply to each tank is;
- iii. The Permittee shall keep records of the dimensions and maximum design capacity of the storage vessel in m<sup>3</sup> and gallons in accordance with 40 CFR 60.116b(a) and (b). This record shall be kept for the life of the tank.
8. Upon written request from the Illinois EPA, the Permittee shall at his own expense, conduct test for VOM emission in accordance with the applicable test methods and procedures specified in 35 IAC 219.105.
- 9a. The Permittee shall monitor the following parameters for the venturi scrubber
- Gas Side: Temperature at the inlet and the outlet of the scrubber.
- Scrubbant: Temperature, pressure and flow rate at the inlet to the scrubber.
- b. The Permittee shall monitor the following parameters for the packed-bed scrubber.
- i. Oil flow rate.
- ii. Oil and gas inlet temperature.

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iii. Pressure drop across the scrubber.

10a. The Permittee shall maintain records of the following items for the boiler:

i. Record of the Sulfur content of the fuel oil received at the facility, e.g. Supplier certification of fuel oil sulfur content in each fuel oil shipment.

ii. NSPS daily records for the amounts of each fuel combusted during each day as required in 40 CFR 60.48c(g).

iii. Volume of fuel oil fired and volume of natural gas fired in the boiler, monthly and 12-month running totals.

iii. Emissions for NOx, CO and SO<sub>2</sub> from the boiler, monthly and 12-month running total compiled at least semi-annually.

b. The Permittee shall maintain records of the following items related to the wood treating process.

i. Material Safety Data Sheet (MSDS) or other supplier information providing the HAP content of the wood treatments used at the plant.

ii. The Permittee shall keep an engineering analysis for each scrubber, which analysis shall include an assessment of worst-case loadings to the scrubber (flow rate concentration), the theoretical removal efficiency of VOM achieved by the scrubber, given the normal operating conditions of the scrubber (scrubbant flow rate, residual VOM concentration, process temperature, number of stage, etc.) and the VOM emission to the atmosphere. This analysis shall be kept current, being revise whenever a significant change is made to the loading of the scrubbers or reduce removal efficiencies.

iii. Treating reports, which include operating Log for the retorts.

iv. Usage of wood-treatments by type.

v. Monthly and 12-month running total number of charges and cubic feet on the retorts.

vi. Throughput of untreated wood in cubic feet of material of the source on a monthly basis.

vii. Monthly and 12-month running total of VOM emissions from the retorts doors.

c. The Permittee shall keep written records of the application of control measures as needed to comply with the opacity limitations of Condition 6(a), in accordance with 35 IAC 212.316(g)(2), including the following information.



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(a)(3)(A).

ii. If there is any other exceedance of the requirements of this permit as determined by the records required by this permit or by other means, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

13. Two copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
209 Mall Street  
Collinsville, Illinois 62234

If you have any questions on this, please call Ricardo Ng at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:RNG:psj

cc: Illinois EPA, FOS Region 3  
Illinois EPA, Compliance Section

Attachment A - Emission Summary

Process Units	PM	PM-10	CO	SO <sub>2</sub>	NO <sub>x</sub>	VOM
	<u>T/Yr</u>	<u>T/Yr</u>	<u>T/Yr</u>	<u>T/Yr</u>	<u>T/Yr</u>	<u>T/Yr</u>
Boiler (Oil Usage)	0.52	0.52	1.31	10.34	5.23	0.05
Boiler (Gas Usage)	0.35	0.35	4.89	0.08	19.55	0.39
Retorts-Doors	---	---	---	---	---	3.24
Retort-Operation (Venturi Scrubber)*	---	---	---	---	---	2.20
Retort-Operation (Packed-Bed Scrubber)**	---	---	---	---	---	2.20
Unloader N#1 (Cyclone)	2.45	1.22	---	---	---	---
Unloader N#2 (Cyclone)	2.45	1.22	---	---	---	---
A&B Mill (Cyclone)	1.27	0.64	---	---	---	---
RailFast (Baghouse)	8.45	4.23	---	---	---	---
Switch Tie Grading and Sorting	3.30	1.65	---	---	---	---
Wastewater Treatment Facility	---	---	---	---	---	0.44
Tanks***	---	---	---	---	---	0.44
Piping components(Valves, pumps, etc.)	---	---	---	---	---	11.41
Roadways, parking areas, etc.	8.0	8.0	---	---	---	---
Total Emissions	26.8	17.8	6.2	10.4	24.8	20.37

\* Includes operation of retorts and various tanks as controlled by the venturi scrubber.

\*\* Includes operation of vacuum system on retorts as controlled by the packed-bed scrubber.

\*\*\*Addresses direct emissions not exhausted to scrubber.

This attachment provides a summary of the maximum emissions from wood treatment plant, operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the maximum annual, oil and gas usage in the boiler; raw material usage

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in the four retorts combined of 5,840-charge/year scenario, which results in maximum emissions from such a plant. The Illinois EPA also allowed for firing of the boiler for up to three month each year on oil (maximum 523,000 gal/year of oil usage). The resulting maximum emissions are well below the levels, e.g., 100 tons per year for criteria pollutants, at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, there is less operating hours and control measures are more effective than required in this permit.

As related to emissions of hazardous air pollutant(HAP) this permit relies upon data in the application that indicates that naphthalene the HAP emitted in the greatest amount by the plant makes up about 40 percent of the volatile organic material (VOM) emissions of the plant. As a result, emission of each HAP individually is less than 10 tons per year so that this plant is not considered a major source for HAP.

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