● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: Mr. R.E. Nedley Vice President St. Joe Forest Products Co. P.O. Box 190 Port St. Joe, FL 32456	4. Article Number P 702 175 493 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Addressee X Eric McNair	8. Addressee's Address *(ONLY if requested and fee paid)* 202 Monument
6. Signature — Agent X	
7. Date of Delivery 6-6-88 Jr	

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

P 702 175 493

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to: Mr. R.E. NEDLEY, V.P. ~~St. Joe Forest Products Co~~mpany	
Street and No. P.O. Box 190	
P.O., State and ZIP Code Port St. Joe, FL 32456	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 06/03/88 Permits: AC 23-136376, -136377, -136378	

PS Form 3800, June 1985

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. R.E. Nedley, Vice President
St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, Florida 32456

June 3, 1988

Enclosed are permits Nos. AC 23-136376, -136377, and -136378, for St. Joe Forest Products Company, to make several changes at its existing mill in order to achieve compliance with the total reduced sulfur (TRS) regulations contained in Florida Administrative Code Rule 17-2. The changes include replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3). The existing facility is located in Port St. Joe, Gulf County, Florida. These permits are issued pursuant to Section 403, Florida Statutes.

Any Party to these permits has the right to seek judicial review of these permits pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date these permits are filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

Copy furnished to:

E. Middleswart, NE Dist.
L. Taylor, SJFPC
V. L. Hutcheson, P.E., RIC
B. Pittman, Esq., DER
T. Cole, Esq.

Final Determination

St. Joe Forest Products Company
Gulf County
Port St. Joe, Florida

Construction Permit Numbers:
AC 23-136376
23-136377
23-136378

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

May 20, 1988

Final Determination

The construction permit applications and supplementary material have been reviewed by the Department. Public Notice of the Department's Intent to Issue was published in The Star on April 21, 1988. The Technical Evaluation and Preliminary Determination (TE & PD) were available for public inspection at the DER's Northwest District office and Bureau of Air Quality Management office.

Comments were received from Mr. Terry Cole, representing St. Joe Forest Products Company, on May 12, 1988. The comments will be addressed and the responses follow:

A. The expiration date incorporates the 45-day time frame to submit compliance testing results and the 90-day time frame to apply for and obtain operating permits. Therefore, there will be no change in the expiration date.

B. Since the changes requested for the TE & PD will not affect the determination significantly, the TE & PD will not be reissued. The comments are acknowledged. Because of PSD tracking, the following table will be revised:

From:

Table 1

Source	Projected Potential Pollutant Emissions (TPY) PM	TRS	SO_2
Lime Kilns			
No. 1	45.07	12.09	31.0
No. 2	45.07	12.09	31.0
No. 3	45.07	12.09	31.0
Total:	135.21	36.27	93.0

To:

Table 1

Source	Projected Potential Pollutant Emissions (TPY) PM	TRS	SO_2
Lime Kilns			
No. 1	45.07	12.09	
No. 2	45.07	12.09	
No. 3	45.07	12.09	
Nos. 1-3			31.03
Total:	135.21	36.27	31.03

C. The comments related to the construction permits, Nos. AC 23-136373, -136377, and -136378, will be addressed and the Bureau's responses will follow:

1. Since the SO_2 potential emissions were addressed previously, the following condition will be changed:

   Specific Condition

   No. 5:

   From: For PSD tracking purposes, the projected emissions are: a) SO_2: 7.08 lbs/hr, 31.0 TPY

   To: For PSD tracking purposes, the projected emissions are: a) SO_2: 31.03 TPY (total: Lime Kilns 1-3)

2. The Bureau agrees with the request and the following will be changed:

   a. AC 23-136376 and -136377

   Specific Condition

   No. 3:

   From: The No. 6 Fuel Oil firing rate shall not exceed 365 gals/hr (54.7 MMBtu/hr heat input). The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54,600 cubic feet/hr (54.7 MMBtu/hr heat input).

   To: The No. 6 Fuel Oil firing rate shall not exceed 54.7 MMBtu/hr heat input. The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54.7 MMBtu/hr heat input.

   b. AC 23-136378

   Specific Condition

   No. 3:

   From: The No. 6 Fuel Oil firing rate shall not exceed 365 gals/hr (54.7 MMBtu/hr heat input). The sulfur content of the fuel oil shall not exceed 3.0% by weight.

   To: The No. 6 Fuel Oil firing rate shall not exceed 54.7 MMBtu/hr heat input. The sulfur content of the fuel oil shall not exceed 3.0% by weight.

3. The Bureau agrees with the request and the following will be changed:

a. AC 23-136376 and -136377

Specific Condition

No. 4:

From: The maximum pollutant emissions shall not exceed:

a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
b) Visible Emissions (VE): less than 20% opacity
c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)

To: The maximum pollutant emissions shall not exceed:

a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
b) Visible Emissions (VE):
If the Department observes visible emissions using EPA Method 9 pursuant to FAC Rule 17-2.700(6)(b)9 in excess of 20% opacity, it shall be considered good reason to believe that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.
c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (2.67 lbs/hr, 11.7 TPY)

b. AC 23-136378

Specific Condition

No. 4:

From: The maximum pollutant emissions shall not exceed:

a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
b) Visible Emissions (VE): less than 20% opacity
c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.76 lbs/hr, 12.1 TPY)

To: The maximum pollutant emissions shall not exceed:

a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
b) Visible Emissions (VE):
If the Department observes visible emissions using EPA Method 9 pursuant to FAC Rule 17-2.700(6)(b)9 in excess of 20% opacity, it shall be considered good reason to believe that the applicable mass emission standard is in danger of

being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.

c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (2.76 lbs/hr, 12.1 TPY)

4. The Bureau does not agree with the request for Specific Condition No. 6. The Specific Condition is only stipulating the required EPA test method that would have to be performed pursuant to Specific Condition No. 5. However, because the test method is now part of Specific Condition No. 5, the reference to the test method contained in Specific Condition No. 6 will be deleted. Therefore, the following will be changed:

   a. AC 23-136376, -136377, and -136378

   Specific Condition

   No. 6:

   From: Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:

   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources

   b) EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources

   c) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

   To: Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:

   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources
   b) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

5. Comments on Specific Condition No. 12 required no response.

6. The Bureau agrees with the request and the following will be changed:

   a. AC 23-136376, -136377, and -136378

Specific Condition

No. 14: 1st Paragraph

From: To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results and the Certificate of Completion, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. (FAC Rules 17-2 and 17-4)

To: To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results and the Certificate of Completion, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date in accordance with FAC Rules 17-2 and 17-4.

Attachment to be Incorporated:

A. AC 23-136376, -136377, and -136378

12. Mr. Terry Cole's letter dated and received May 12, 1988.

The Bureau will incorporate the changes in the appropriate construction permits, as reflected above in the final determination. It is recommended that the construction permits be issued as drafted, with the above revisions and attachments incorporated.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor . Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136376
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 1 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 1 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 1 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil or Natural Gas with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln 3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136376

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.
12. Mr. Terry Cole's letter dated and received May 12, 1988.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136376
Expiration Date: March 27, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- ( ) Determination of Best Available Control Technology (BACT)
- ( ) Determination of Prevention of Significant Deterioration (PSD)
- ( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 54.7 MMBtu/hr heat input. The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54.7 MMBtu/hr heat input.

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE):
      If the Department observes visible emissions using EPA Method 9 pursuant to FAC Rule 17-2.700(6)(b)9 in excess of 20% opacity, it shall be considered good reason to believe that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicablity of this permit condition.
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 31.03 (total: Lime Kilns 1-3)

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:
   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources
   b) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operations-Problems; 17-2.710(3)(b): Continuous Monitoring; 17-2.710(4): Quarterly Reporting Requirements; 17-4.140: Reports; and, 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136376
Expiration Date: March 27, 1990

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit in accordance with FAC Rules 17-2 and 17-4.

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this 24 day of May, 1988

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor   Dale Twachtmann, Secretary   John Shearer, Assistant Secretary

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136377
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 2 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 2 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 2 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil or Natural Gas with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln   3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln   3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136377

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.
12. Mr. Terry Cole's letter dated and received May 12, 1988.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 54.7 MMBtu/hr heat input. The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54.7 MMBtu/hr heat input.

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE):
   If the Department observes visible emissions using EPA Method 9 pursuant to FAC Rule 17-2.700(6)(b)9 in excess of 20% opacity, it shall be considered good reason to believe that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 31.03 TPY (total: Lime Kilns 1-3)

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:
   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources
   b) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operations-Problems; 17-2.710(3)(b): Continuous Monitoring; 17-2.710(4): Quarterly Reporting Requirements; 17-4.140: Reports; and, 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136377
Expiration Date: March 27, 1990

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit in accordance with FAC Rules 17-2 and 17-4.

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this 24 day of May, 1988.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136378
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 3 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 3 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 3 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln 3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136378

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.
12. Mr. Terry Cole's letter dated and received May 12, 1988.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- ( ) Determination of Best Available Control Technology (BACT)
- ( ) Determination of Prevention of Significant Deterioration (PSD)
- ( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 54.7 MMBtu/hr heat input. The sulfur content of the fuel oil shall not exceed 3.0% by weight.

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE):
      If the Department observes visible emissions using EPA Method 9 pursuant to FAC Rule 17-2.700(6)(b)9 in excess of 20% opacity, it shall be considered good reason that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with FAC Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (2.76 lbs/hr, 12.1 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 31.03 TPY (total: Lime Kilns 1-3)

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:
   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources
   b) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operations-Problems; 17-2.710(3)(b): Continuous Monitoring; 17-2.710(4): Quarterly Reporting Requirements; 17-4.140: Reports; and, 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit in accordance with FAC Rules 17-2 and 17-4.

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this 24 day of May, 1988.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE	
To:	Loctn:
To:	Loctn:
To:	Loctn:
From:	Date:

TO: Dale Twachtmann

FROM: Howard L. Rhodes

SUBJ: Approval of Construction Permits

State Construction Permit Numbers: AC 23-136376
AC 23-136377
AC 23-136378

DATE: May 20, 1988

Attached for your approval and signature are permits prepared by Central Air Permitting for the above mentioned company to install a wet scrubber system on the existing Nos. 1, 2 and 3 Lime Kilns and to make changes in order to comply with the TRS regulations contained in FAC Rule 17-2. The facility is located in Port St. Joe, Gulf County, Florida. Comments were received during the public notice period.

Day 90, after which these permits will be issued by default, is June 3, 1988.

I recommend your approval and signature. Tues

HLR/aqm/bm

attachments

Check Sheet

Company Name: St Joe Forest Products Company
Permit Number: AC 23-136378, -136377, -136376
PSD Number:
Permit Engineer:

Application:
☒ Initial Application
- ☒ Incompleteness Letters
- ☒ Responses
- ☐ Waiver of Department Action
- ☐ Department Response
- ☐ Other

Cross References:
☐
☐
☐

Intent:
☒ Intent to Issue
☒ Notice of Intent to Issue
☒ Technical Evaluation
☐ BACT or LAER Determination
3 ☒ Unsigned Permit
Correspondence with:
- ☐ EPA
- ☐ Park Services
- ☐ Other

☒ Proof of Publication
- ☐ Petitions - (Related to extensions, hearings, etc.)
- ☐ Waiver of Department Action
- ☐ Other

Final
Determination:
☒ Final Determination
3 ☒ Signed Permit
☐ BACT or LAER Determination
- ☐ Other

Post Permit Correspondence:
- ☐ Extensions/Amendments/Modifications
- ☒ Other

BEST AVAILABLE COPY

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

June 5, 1989

RECEIVED
JUN 6 1989
DER - BAQM

Mr. Clair Fancy
Deputy Bureau Chief
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Enclosed for your information is the first monthly Construction Progress Report for our NCG System. Rust Engineering foresees no problem in meeting the September 12, 1989, compliance date.

Yours very truly,

Lewis W. Taylor
Lewis W. Taylor
Environmental Coordinator

LWT:fg

cc: Mr. Quackenbush
Mr. Nedley
Mr. Allen
Mr. Phillips
Mr. M. Troop
E. Middleswart
M. Harley } 6-13-89 RAL
B. Mitchell
B. Andrews

TRS CONTROL PROJECT
CONSTRUCTION PROGRESS REPORT
JUNE 1, 1989

I. DIGESTER SYSTEMS (BLOW HEAT RECOVERY)

CONSTRUCTION ACTIVITIES	% COMPLETE
VESSEL ERECTION AND HYDRO	95
PROCESS PIPING INSTALLATION	95
SERVICE AND UTILITY PIPING	95
MECHANICAL (PUMPS & EQUIPMENT)	95
ELECTRICAL INSTALLATION	95
INSTRUMENTATION INSTALLATION	90
STRUCTURAL (STEEL AND CONCRETE)	85
INSULATION INSTALLATION	30
FLUSHING AND CHECK-OUT	90

PROJECTED START-UP DATE 6/15/89

II. EVAPORATOR SYSTEMS (BLOW HEAT EVAPORATOR)

CONSTRUCTION ACTIVITIES	% COMPLETE
VESSEL ERECTION AND HYDRO	95
PROCESS PIPING INSTALLATION	80
SERVICE AND UTILITY PIPING	05
MECHANICAL (PUMPS & EQUIPMENT)	95
ELECTRICAL INSTALLATION	45
INSTRUMENTATION INSTALLATION	05
STRUCTURAL (STEEL AND CONCRETE)	99
INSULATION INSTALLATION	20
FLUSHING AND CHECK-OUT	0

PROJECTED START-UP DATE 7/15/89

III. NCG COLLECTION / INCINERATION SYSTEM

CONSTRUCTION ACTIVITIES	% COMPLETE
VESSEL ERECTION AND HYDRO	05
PROCESS PIPING INSTALLATION	35
SERVICE AND UTILITY PIPING	35
MECHANICAL (PUMPS & EQUIPMENT)	05
ELECTRICAL INSTALLATION	40
INSTRUMENTATION INSTALLATION	10
STRUCTURAL (STEEL AND CONCRETE)	20
INSULATION INSTALLATION	0
FLUSHING AND CHECK-OUT	0

PROJECTED START-UP DATE 7/25/89

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

June 24, 1988

Mr. R. E. Nedley
Vice President
St. Joe Forest Products Co.
Post Office Box 190
Pt. St. Joe, Florida 32456

Dear Mr. Nedley:

This is to clarify specific condition no. 4(c) for air construction permits AC 23-136376, -136377, and -136378 for St. Joe Forest Products, Co.

Mr. John Millican and I had discussions with regards to the averaging time for the pound per hour limit for TRS. Mr. Millican indicated that since the standard of 20 ppm is a 12 hour average, that he wanted the pound per hour limits to also be 12 hour averages. We are able to grant this request by allowing St. Joe to perform 3-four hour tests utilizing Method 16. This is the only way that you can have a 12 hour average which, as Mr. Millican stated, is part of our rule and at the same time use EPA test methods properly. Method 16 allows sampling times between 3 and 6 hours and Method 16A uses sampling times between 1-3 hour. All of our regulations require utilizing three tests to show compliance.

Sincerely,

C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality Management

CHF:jr

cc: John Millican

Harold Delivered File Copy

LAW OFFICES

OERTEL & HOFFMAN

A PROFESSIONAL ASSOCIATION

KENNETH G. OERTEL
KENNETH F. HOFFMAN
SEGUNDO J. FERNANDEZ
TERRY COLE
HAROLD F. X. PURNELL
M. CHRISTOPHER BRYANT
W. DAVID WATKINS
MARTHA J. EDENFIELD
R. L. CALEEN, JR.
WILLIAM E. POWERS, JR.
C. ANTHONY CLEVELAND
SCOTT SHIRLEY

JOHN H. MILLICAN
SENIOR CONSULTANT
(NOT A MEMBER OF THE FLORIDA BAR)

RECEIVED

MAY 12 1988

DER - BAQM

SUITE C
2700 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301
TELEPHONE (904) 877-0099
TELECOPIER (904) 877-0981

MAILING ADDRESS:
POST OFFICE BOX 6507
TALLAHASSEE, FLORIDA 32314-6507

May 12, 1988

Mr. Clair Fancy
Deputy Bureau Chief
Bureau of Air Quality Monitoring
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Fl 32399-2400

Re: St. Joe Forest Products Co
Lime Kiln Construction Permits
AC 23-136376, AC 23-136377
AC 23-~~136328~~ 136378

Dear Mr. Fancy:

This letter is to submit comments on the proposed referenced permits.

The expiration date for all permits should be changed to April 27, 1990 to provide 30 days after getting the final test report to file the operating permit application.

Comments on Technical Evaluation

In the first paragraph and the last paragraph on page one, the statements that freshwater and/or caustic soda will be used to control SO_2 are incorrect. Any effect on SO_2 is incidental and may be beneficial but SO_2 is not a regulated pollutant for lime kilns and there is no requirement to control. Please delete SO_2 from these paragraphs.

On the second page under Rule Applicability in the sixth paragraph it should be clear that the SO_2 requirements are as they are imposed by PSD and the permit fee.

On page three in table 1, total potential SO_2 emissions are shown as 93.0 TPY. This is an error. As shown in the emission calculations (P4-7) submitted with the permit applications, the total potential SO_2 emissions from incinerating TRS is 31.03 tons per year which is less than 40 TPY. SO_2 modeling, though not required of the lime kilns, has been done and the results

LAW OFFICES

OERTEL & HOFFMAN

A PROFESSIONAL ASSOCIATION

POST OFFICE BOX 6507

TALLAHASSEE, FLORIDA 32314-6507

Mr. Clair Fancy
Deputy Bureau Chief
Bureau of Air Quality Monitoring
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

HAND DELIVERY

indicate that the facility is not expected to cause or contribute to any SO_2 PSD increment or ambient air quality violation.

On page four in paragraph one, the visible emission standard is established at less than 20% opacity. St. Joe Forest Products Company currently is operating the lime kilns under operating permits AO 23-27171, AO 23-27172 and AO 23-27173. These permits have specific condition number 25 which reads as follows:

> If the Department observes visible emission in excess of 20% opacity it shall be considered good reason to believe that the applicable mass emission standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with Florida Administrative Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after the Department has notified the permittee of the applicability of this permit condition.

We request that this permit condition be incorporated in these three permits.

Paragraph five on page four is incorrect and should be deleted.

In the first paragraph on page six it appears that the word "violation" should have followed "standard"; please change accordingly or explain to us. The additional modeling mentioned in this paragraph has been completed and submitted to the department.

Comments on Draft Specific Conditions

Specific conditions 1, 2, 5, 7, 8, 9, 10, 11, 13 and 15 are acceptable as written.

Specific Condition 3 - The BTU content of fuel oil and gas varies, please delete the volume numbers and use MMBTU numbers only in this specific condition.

Specific Condition 4 - a) Acceptable as written
b) Request addition of S.C. 25 from the current operating permits

c) Substitute MMBTU numbers for mass numbers

Specific Condition 6 - a) Acceptable as written
b) Request addition of S.C. 25 from current operating permit
c) Acceptable as written

Specific Condition 12 - Acceptable as written except all that the tests will show is before and after SO_2 emissions.

Specific Condition 14 - In the last sentence please delete "until its expiration date". Change to read "in accordance with" F.A.C. Rules 17-2 and 17-4.

The comments on specific conditions are intended to apply to all three lime kiln draft permits.

We hope that this will be sufficient to quickly process and issue the permits so that we may get about our responsibility of reducing TRS emissions for all identified sources at the facility within the time frames allowed.

Sincerely,

Terry Cole

Terry Cole

TC:slt
819.070

cc: Robert Nedley
John Millican
Lewis Taylor
Bill Thomas
Betsy Pittman

Copied: Bruce Mitchell
CHF/BT
Ed Middleswart
5-13-88 mr

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

April 25, 1988

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Hand Delivered by Mr. Terry Cole's runner

Dear Mr. Fancy:

In compliance with Section 403.815, F.S. and DER Rule 17-103.150, FAC, please find enclosed Proof of Publication certifying that the Department of Environmental Regulation Notice of Intent to issue a permit to St. Joe Forest Products Company for replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3), for TRS compliance was published in the April 21, 1988 edition of "The Star", published weekly at Port St. Joe, Gulf County, Florida.

I have ask Mr. Terry Cole to hand deliver this letter and enclosed Proof of Publication in order to assure that we comply with the seven day requirement. Please advise if any additional information is required.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

RECEIVED
APR 26 1988
DER - BAQM

REN/crm

cc: Mr. Terry Cole w/enclosure
Mr. Lewis Taylor w/enclosure
Mr. John Millican w/enclosure

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

For permits:
AC 23-141982 & -83
23-136376, 77, 78

April 25, 1988

Mr. Terry Cole
Oertel & Hoffman, P.A.
2700 Blair Stone Road
Suite C
P.O. Box 6507
Tallahassee, Florida 32301

Dear Mr. Cole:

In order to assure that we comply with the seven day requirement, I am delivering to you the attached letters to Mr. C. H. Fancy along with the Proof of Publications (2). I would appreciate very much your delivering the letters and attachments to Mr. Fancy at the DER Twin Towers Office complex.

Best Personal Regards.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

REN/crm

cc: Mr. C. H. Fancy/DER
Mr. L. W. Taylor

Enclosures

RECEIVED
APR 26 1988
DER - BAQM

BEST AVAILABLE COPY

File Copy

Hand delivered by Cole's runner.

PROOF OF PUBLICATION

THE STAR

Published Weekly at Port St. Joe, Gulf County, Florida

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
Notice of Intent

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to St. Joe Forest Products Company to make several changes at the existing mill in order to achieve compliance with the total reduced sulfur (TRS) regulations contained in Florida Administrative Code Rule 17-2. The changes include replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3). The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57 Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The applications are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except for legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
160 Government Center
Pensacola, Florida 32501-5794

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

1t 4/21/88

STATE OF FLORIDA,
COUNTY OF GULF } ss.

Before the undersigned authority personally appeared Wesley R. Ramsey, who deposes and says that he is editor of The Star, a weekly newspaper printed in the English language and of general circulation published in the City of Port St. Joe, in said county and state, and that the attached notice of Intent

was published in said newspaper weekly for a period of One weeks consecutively, beginning April 21 19 88, and ending April 21 19 88, said publication being on the following dates: 4/21/88

Deponent further says that The Star has been continuously published as a weekly newspaper issued each Thursday and has been entered as second class mail matter at the postoffice in Port St. Joe, Gulf County, Florida, for a period of more than one year next preceeding the first publication of the attached copy of advertisement; and deponent further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Wesley R. Ramsey
Editor.

Sworn to and subscribed before me this 21st day of April A. D., 19 88. (SEAL)

Carol R. Horton
NOTARY PUBLIC, STATE OF FLORIDA
My Commission Expires Aug. 28, 1990

RECEIVED

APR 26 1988

DER - BAQM

Copied: Pradeep Rawal } 4.26.88
Ed Middleswart }
Bruce Mitchell } 4.26.88

April 26, 1988

Agreed to Language for Testing Purposes for TRS:

B. For testing purposes and NSPS applicability purposes, the maximum production rate of the Nos. 1 and 2 batch digester systems will be ___ TPH ADP (tons per hour of air dried pulp). Tests for compliance will be performed with the control device (No. 2 or 3 lime kiln) operating at 90-100% of maximum lime kiln operating rate and with digester systems 1 and 2 operating as near the maximum production rate as possible, but in no case shall the operating rate of the digesters be less than 85% of the maximum operation when testing.

Terry Cole (for St Joe)

April 26, 1988

Agreed to Language for Testing Purposes for TRS:

B. For testing purposes and NSPS applicability purposes, the maximum production rate of the Nos. 1 and 2 batch digester systems will be ___ TPH ADP (tons per hour of air dried pulp). Tests for compliance will be performed with the control device (No. 2 or 3 lime kiln) operating at 90-100% of maximum lime kiln operating rate and with digester systems 1 and 2 operating as near the maximum production rate as possible, but in no case shall the operating rate of the digesters be less than 85% of the maximum operation when testing.

Howard L. Rhodes

R. E. Fedley

Terry Cole (for St Joe)

Lewis Taylor

John McWilliam

For Bruce

Suggested

~~Agreed~~ to Language for Testing Purposes for TRS:

B. For testing purposes and NSPS applicability purposes, the maximum production rate of the Nos. 1 and 2 batch digester systems will be 90 TPH ADP (tons per hour of air dried pulp). Tests for compliance will be performed with the control device (No. 2 or 3 lime kiln) operating at 90-100% of maximum lime kiln operating rate and with digester systems 1 and 2 operating as near the maximum production rate as possible, but in no case shall the operating rate of the digesters be less than 85% of the maximum operation when testing. The compliance test will be performed on the control device (No. 2 or 3 lime kiln) for the appropriate time period and Nos. 1 and 2 batch digesters will be operated at their maximum rate for at least one hour during the compliance test.

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

for permits:
AC 23-141982 & -83
23-136376, 77, 78

April 25, 1988

Mr. Terry Cole
Oertel & Hoffman, P.A.
2700 Blair Stone Road
Suite C
P.O. Box 6507
Tallahassee, Florida 32301

Dear Mr. Cole:

In order to assure that we comply with the seven day requirement, I am delivering to you the attached letters to Mr. C. H. Fancy along with the Proof of Publications (2). I would appreciate very much your delivering the letters and attachments to Mr. Fancy at the DER Twin Towers Office complex.

Best Personal Regards.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

REN/crm

cc: Mr. C. H. Fancy/DER
Mr. L. W. Taylor

Enclosures

RECEIVED
APR 26 1988
DER - BAQM

St. Joe FOREST PRODUCTS COMPANY

POST OFFICE BOX 190
PORT ST. JOE, FLORIDA 32456-0190

Mr. C. H. Fancy, P.E.

Hand Delivered

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. XX Show to whom delivered, date, and addressee's address. †(Extra charge)†
2. ☐ Restricted Delivery †(Extra charge)†

3. Article Addressed to: Mr. Robert E. Nedley Vice President St. Joe Forest Products Company P.O. Box 190 Port St. Joe, FL 32456-0190	4. Article Number P 274 010 488 Type of Service: ☐ Registered ☐ Insured XX Certified ☐ COD ☐ Express Mail Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X	8. Addressee's Address *(ONLY if requested and fee paid)* 252 Monument
6. Signature – Agent X Dimitrie Thomas	
7. Date of Delivery 4/15/88 Jr	

PS Form 3811, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 DOMESTIC RETURN RECEIPT

P 274 010 366

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. R.E. Nedley, V.P. ~~St. Joe Forest Products Co.~~	
Street and No. P.O. Box 190	
P.O., State and ZIP Code Port St. Joe, FL 32456	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 04-06-88 Permits: AC 23-136376, -77, -78	

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

April 5, 1988

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. R.E. Nedley, Vice President
St. Joe Forest Products Company
P.O. Box 190
Port St. Joe, Florida 32456

Dear Mr. Nedley:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permits for St. Joe Forest Products Company to make several changes at the existing mill in order to achieve compliance with the total reduced sulfur regulations contained in Florida Administrative Code Rule 17-2. The changes include replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3).

Please submit, in writing, any comments which you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/bm

Attachments

cc: E. Middleswart, NE Dist.
L. Taylor, SJFPC
V. L. Hutcheson, P.E., RIC
B. Pittman, Esq.
T. Cole, Esq.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Applications for Permits by:

St. Joe Forest Products Company Post Office Box 190 Port St. Joe, Florida 32456	DER File Nos. AC 23-136376 AC 23-136377 AC 23-136378

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the applications specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, St. Joe Forest Products Company, applied on July 1, 1987, to the Department of Environmental Regulation for permits to make several changes at the existing mill in order to achieve compliance with the total reduced sulfur regulations contained in Florida Administrative Code Rule 17-2. The changes include replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3). The project will occur at the applicant's existing facility in Port St. Joe, Gulf County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that air construction permits were needed for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, FAC, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on permit applications. The notice must be published one time only in a section of a major local newspaper of general circulation in the county in which the project is located and within thirty (30) days from receipt of this intent. Proof of publication must be provided to the Department within seven days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permits.

The Department will issue the permits with the attached conditions unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. A person whose substantial interests are affected by the

Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirement of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copy enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

cc: E. Middleswart, NE Dist.
L. Taylor, SJFPC
V. L. Hutcheson, P.E., RIC
B. Pittman, Esq.
T. Cole, Esq.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on April 6, 1988.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Judy Rogers — Clerk

4-6-88 — Date

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department of Environmental Regulation hereby gives notice of its intent to issue permits to St. Joe Forest Products Company to make several changes at the existing mill in order to achieve compliance with thte total reduced sulfur (TRS) regulations contained in Florida Administrative Code Rule 17-2. The changes include replacement of the mud filters and venturi scrubbers and the connection of the noncondensible gas handling system to the lime kilns (Nos. 1-3). The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The applications are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
160 Governmental Center
Pensacola, Florida 32501-5794

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

St. Joe Forest Products Company
Gulf County
Port St. Joe, Florida

Construction Permit Numbers:
AC 23-136376
AC 23-136377
AC 23-136378

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

April 5, 1988

I. Application

A. Applicant

St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, Florida 32456

B. Project and Location

St. Joe Forest Products Company made application for construction permits and to make changes at its existing mill in order to achieve compliance with the total reduced sulfur (TRS) regulations contained in Florida Administrative Code (FAC) Rule 17-2. For the Nos. 1, 2 and 3 Lime Kilns, the project will include the replacement of the existing lime mud filters with larger filters and the replacement of the existing venturi scrubbers with larger units. Fresh water will be used on the filters. Fresh water and/or caustic soda will be used as the scrubbing medium in the venturi scrubbers to control particulate matter (PM), TRS, sulfur dioxide (SO_2) and visible emissions. The burner systems for each of the lime kilns will be modified to burn noncondensible gases (NCG).

The proposed project will occur at the applicant's existing facility located along U.S. Highway 98 in Gulf County, Florida. The UTM coordinates are Zone 16, 425.0 km North and 2620.0 km East.

The Standard Classification Codes are:

1. Pulp and Paper Industry
   Major Group 26: Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06 (tons ADUP)

2. Mineral Products
   Major Group 32: Lime Manufacturer
   o Calcining - Rotary Lime Kiln 3-05-016-04 (tons prod)

C. Process and Controls

The spent lime cake (calcium carbonate) from the slaking cycle is recalcined in a rotary lime kiln (Nos. 1-3) to produce quicklime for recausticizing the green liquor. The PM, TRS, SO_2 and visible emissions will be controlled with a new venturi scrubber unit, which will be using fresh water and/or caustic soda as the scrubbing medium. Sulfur dioxide (SO_2) emissions from the oxidation of the TRS NCG should be scrubbed out in each lime kiln and its associated venturi scrubber system (Nos. 1-3), and the applicant assumes a 99% SO_2 removal efficiency.

II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and FAC Rules 17-2 and 17-4.

The application packages were deemed complete on February 2, 1988.

The existing mill is located in an area designated attainment for all pollutants in accordance with FAC Rule 17-2.420.

The existing mill is a major emitting facility in accordance with FAC Rule 17-2.100(111) for the pollutants PM, SO_2, and TRS.

Based on the applicant's response, the Nos. 1, 2 and 3 Lime Kilns are existing non-NSPS (new source performance standards) sources in accordance with 40 CFR 60, Subparts A and BB.

The applicant proposes to install a NCG handling system to service various sources at the mill, and the these gases will be incinerated in the Nos. 1-3 Lime Kilns. The applicant projects that the SO_2 emissions, from the oxidation of the incinerated TRS gases, will increase the total SO_2 emissions from each lime kiln by 1% (projected 99% SO_2 removal efficiency from it being subjected to the natural scrubbing environment of the lime kiln system and the associated scrubber system). Therefore, the SO_2 removal efficiency for each lime kiln will be established through pre and post tests for SO_2 (see January 22, 1988 letter from C. H. Fancy). The tests are to be conducted prior to and after connecting the NCG handling system to each of the lime kilns. The results of the tests and their evaluations and comparisons will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate processing fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received for each source.

The applicant requested a more restrictive PM mass emission limit for each lime kiln than would be allowed pursuant to FAC Rule 17-2.610(1), and the Department accepts the requests. The requested limit for each of the three lime kilns is two-thirds of the total allowable limit that would be allowed by rule for two lime kilns and is based on an agreement between the applicant and the DER's Northwest District office.

The following table will reflect the projected potential pollutant emissions from the proposed project in tons per year (TPY).

Table 1

Source	Projected Potential Pollutant Emissions (TPY) PM	TRS	SO_2
Lime Kilns			
No. 1	45.07	12.09	31.0
No. 2	45.07	12.09	31.0
No. 3	45.07	12.09	31.0
Total:	135.21	36.27	93.0

Note: o Annual hours of operation are 8760
o Emissions for the lime kilns are based on:

1. PM: Process Weight (FAC Rule 17-2.610(1) x 2/3
   a. #1 10.5 tons/hr lime mud processed (dry)
   b. #2 10.5 tons/hr lime mud processed (dry)
   c. #3 10.5 tons/hr lime mud processed (dry)

2. TRS: 20 ppmvd @ std. conditions @ 10% O_2, 12-hr avg. (FAC Rule 17-2.600(4)(c)5.); fuel oil yields higher emissions than natural gas (NG)
   a. #1 fuel oil: 15,084 dscfm, 34.2% H_2O, 2.0% O_2
      NG: 14,567 dscfm, 38.1% H_2O, 2.0% O_2
   b. #2 fuel oil: 15,084 dscfm, 34.2% H_2O, 2.0% O_2
      NG: 14,567 dscfm, 38.1% H_2O, 2.0% O_2
   c. #3 fuel oil: 15,084 dscfm, 34.2% H_2O, 2.0% O_2

3. SO_2: PSD tracking purposes (all lime kilns)
   o projected removal efficiency of 99%

Since the Nos. 1-3 Lime Kilns are not being modified, the emissions of TRS, SO_2 and PM are not subject to review pursuant to FAC Rule 17-2.500, Prevention of Significant Deterioration (PSD). However, because the SO_2 emissions are greater than the significant emissions rate of 40 TPY (Table 500-2, FAC Rule 17-2), from the oxidation of the TRS emissions, modeling was required. Therefore, the emissions of TRS, SO_2 and PM are subject to review pursuant to FAC Rule 17-2.520, Sources Not Subject to PSD or Nonattainment Area Review.

The Nos. 1-3 Lime Kilns are subject to the provisions of FAC Rule 17-2.600(4)(c)5. According to FAC Rule 17-2.600(4)(c)5.a., the emission limiting standard is 20 ppm by volume on a dry basis at standard conditions corrected to 10 percent oxygen as a 12-hour average. According to FAC Rule 17-2.600(4)(c)5.b., the sources are subject to FAC Rules 17-2.710, Continuous Emission Monitoring, and 17-2.960(1), Compliance Schedules. Pursuant to FAC Rule 17-2.960(1)(d)3., the lime kilns are to be in final compliance by November 12, 1989.

The Nos. 1-3 Lime Kilns are subject to the provisions of FAC Rule 17-2.610, General Particulate Emission Limiting Standards, for PM and visible emissions (VE). As stated previously, the applicant requested a more stringent PM emission limiting standard than would be allowed by rule. The VE standard is less than 20% opacity.

Compliance tests for PM shall be conducted using EPA Method 5 or 17 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A.

Compliance tests for TRS shall be conducted using EPA Method 16 or 16A in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A.

Compliance tests for VE shall be conducted using EPA Method 9 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A.

For PSD tracking purposes and based on the applicant's assumption, 31.0 TPY of SO_2 will be assigned to each lime kiln until the pre and post tests are conducted. The one-time tests for SO_2 shall be conducted using EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A.

All of the sources are subject to FAC Rules 17-2.240, Circumvention, 17-2.250, Excess Emissions, and 17-4.130, Plant Operations-Problems. Any notification required should be made or sent to the DER's Northwest District office.

All of the sources are subject to the provisions of FAC Rules 17-2.710(4), Quarterly Reporting Requirements, and 17-4.140, Reports.

In accordance with FAC Rule 17-2.620(2), objectionable odors shall not be allowed off plant property.

III. Summary of Emissions

A. Emission Limitations

The regulated pollutants from the proposed project are TRS and PM. A VE standard also exists for the lime kilns (Nos. 1-3). The following table exhibits the maximum allowable emission standard/limit for the Nos. 1-3 Lime Kilns.

Table 2

Source	Pollutant	Max. Allowable Pollutant Emission Standard/Limit
No. 1 Lime Kiln	PM	10.3 lbs/hr, 45.1 TPY
	TRS	20 ppmvd @ std. conditions @ 10% O_2, as a 12-hr avg. (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)
	VE	less than 20% opacity
No. 2 Lime Kiln	PM	10.3 lbs/hr, 45.1 TPY
	TRS	20 ppmvd @ std. conditions @ 10% O_2, as a 12-hr avg (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)
	VE	less than 20% opacity
No. 3 Lime Kiln	PM	10.3 lbs/hr, 45.1 TPY
	TRS	20 ppmvd @ std. conditions @ 10% O_2, as a 12-hr avg. (fuel oil: 2.76 lbs/hr, 12.1 TPY)
	VE	less than 20% opacity

See Table 1's note for rationale

The allowable emission standards/limits are consistent with the applicable requirements pursuant to FAC Rules 17-2 and 17-4 and what was requested by the applicant and accepted by the DER's BAQM and Northwest District.

B. Air Quality Analysis

An air dispersion modeling analysis was submitted by the applicant for the St. Joe Forest Products Company's facility. The analysis addressed the potential sulfur dioxide (SO_2) and particulate matter (PM) air quality impacts considering all sources of these pollutants at the facility. The lime kilns were included in this modeling.

The modeling analysis evaluated the facility's compliance with the appropriate air quality standards and PSD increments. The study included consideration of background concentrations of SO_2 and PM in the vincinity of the facility along with the concentrations due to the St. Joe Forest Products Company's facility itself.

The modeling results, combined with a background concentration, indicate that the St. Joe Forest Products Company's facility is not expected to cause or contribute to any SO_2 PSD increment or ambient air quality standard. The modeling has shown, however, the potential for exceedances of the PM ambient air standards and/or PSD increments. The primary contributors to this potential are believed to be the slakers. The applicant has agreed to correct the potential for these exceedances by raising the slaker stacks and/or by lowering the allowable emission limitations for these sources. Compliance will be shown through additional modeling to be completed and submitted by the applicant.

IV. Conclusion

The applicant submitted applications for construction permits in order to comply with the TRS regulations contained in FAC Rule 17-2 and to make changes that will provide compliance with the TRS, PM and visible emission standards/limits applicable to these sources. The applicant requested more restrictive PM emission limits for each lime kiln than what FAC Rule 17-2 would allow and the DER's BAQM and Northwest District accepts the requests and feel that the limits are achievable.

One-time tests (pre and post) for SO_2 (see C. H. Fancy's letter dated January 22, 1988) will be used to establish the overall SO_2 removal efficiency of each lime kiln and their associated scrubber system (Nos. 1, 2 and 3). The applicant assumes that 99% of the oxidized TRS NCG (SO_2) will be scrubbed out in each of the lime kilns and their associated scrubber systems. An evaluation of the test results will be used to rule out or require further review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received for each source.

The General and Specific Conditions listed in the proposed permits (attached) will ensure compliance with all applicable requirements of FAC Rules 17-2 and 17-4.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136376
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 1 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 1 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 1 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil or Natural Gas with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln 3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136376

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 365 gals/hr (54.7 MMBtu/hr heat input). The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54,600 cubic feet/hr (54.7 MMBtu/hr heat input).

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE): less than 20% opacity
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 7.08 lbs/hr, 31.0 TPY

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:

   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources

   b) EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources

   c) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention, 17-2.250: Excess Emissions, 17-4.130: Plant Operations-Problems, 17-2.710(3)(b): Continuous Monitoring, 17-2.710(4): Quarterly Reporting Requirements, 17-4.140: Reports, and 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. (FAC Rules 17-2 and 17-4)

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this_____day of___________,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

____
Dale Twachtmann, Secretary

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136377
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 2 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 2 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 2 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil or Natural Gas with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln 3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136377

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136377
Expiration Date: March 27, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 365 gals/hr (54.7 MMBtu/hr heat input). The sulfur content of the fuel oil shall not exceed 3.0% by weight. The Natural Gas firing rate shall not exceed 54,600 cubic feet/hr (54.7 MMBtu/hr heat input).

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE): less than 20% opacity
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (fuel oil: 2.76 lbs/hr, 12.1 TPY; natural gas: 2.67 lbs/hr, 11.7 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 7.08 lbs/hr, 31.0 TPY

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:

   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources

   b) EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources

   c) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention, 17-2.250: Excess Emissions, 17-4.130: Plant Operations-Problems, 17-2.710(3)(b): Continuous Monitoring, 17-2.710(4): Quarterly Reporting Requirements, 17-4.140: Reports, and 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. (FAC Rules 17-2 and 17-4)

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this _____ day of ___________,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

____
Dale Twachtmann, Secretary

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
St. Joe Forest Products Co.
P. O. Box 190
Port St. Joe, FL 32456

Permit Number: AC 23-136378
Expiration Date: March 27, 1990
County: Gulf
Latitude/Longitude: 29° 49' 11"N
85° 18' 48"W
Project: No. 3 Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of the No. 3 Lime Kiln and the installation of a new and larger lime mud filter and venturi scrubber unit. Fresh water will be used in the filter shower and as the venturi scrubber medium. The scrubber will also be capable of using caustic soda as a scrubbing medium. The new filter will be 10 feet in diameter and 12 feet long. The No. 3 Lime Kiln has a maximum lime production rate of 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry). The lime kiln uses No. 6 Fuel Oil with a maximum heat input of 54.7 MMBtu/hr. The source's control device will be an existing venturi scrubber system with a new and larger scrubber unit. The location of the project will be at the St. Joe Forest Products Company's existing facility in Port St. Joe, Gulf County, Florida. The UTM Coordinates are Zone 16, 425.0 km East and 2620.0 km North.

The Standard Industrial Codes are: Industry No. 2621-Paper Mills
The Standard Classification Codes are: Pulp & Paper Industry

A. Pulp and Paper Industry
   Major Group: 26 Sulfate (Kraft) Pulping
   o Lime Kiln 3-07-001-06
B. Mineral Products
   Major Group 32: Lime Manufacture
   o Calcining-Rotary Lime Kiln 3-05-016-04

The source shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the Specific Conditions.

ATTACHMENTS

AC 23-136378

Attachments to be Incorporated:

1. St. Joe Forest Products Company's application package received July 1, 1987.
2. DER's incompleteness letter dated July 30, 1987.
3. St. Joe Forest Products Company's letter with enclosures received September 3, 1987.
4. DER's incompleteness letter dated October 2, 1987.
5. St. Joe Forest Products Company's letter with enclosures received November 12, 1987.
6. DER's incompleteness letter dated December 10, 1987.
7. Mr. C. H. Fancy's letter dated January 22, 1988.
8. St. Joe Forest Products Company's letter received February 2, 1988.
9. St. Joe Forest Products Company's letter received February 3, 1988.
10. Bruce Mitchell's Interoffice Memorandum dated April 5, 1988.
11. Technical Evaluation and Preliminary Determination dated April 5, 1988.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136378
Expiration Date: March 27, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The lime kiln may operate continuously, i.e., 8760 hrs/yr.

2. The maximum lime production rate shall not exceed 11,764 lbs CaO/hr (dry) and is based on a total process input rate of 27,894 lbs/hr lime mud (dry).

3. The No. 6 Fuel Oil firing rate shall not exceed 365 gals/hr (54.7 MMBtu/hr heat input). The sulfur content of the fuel oil shall not exceed 3.0% by weight.

SPECIFIC CONDITIONS:

4. The maximum pollutant emissions shall not exceed:
   a) Particulate Matter (PM): 10.3 lbs/hr, 45.1 TPY
   b) Visible Emissions (VE): less than 20% opacity
   c) TRS: 20 ppmvd @ standard conditions corrected to 10% O_2, as a 12-hr average (2.76 lbs/hr, 12.1 TPY)

5. For PSD tracking purposes, the projected emissions are:
   a) SO_2: 7.08 lbs/hr, 31.0 TPY

6. Initial and annual compliance tests shall be conducted using the following test methods in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A:

   a) EPA Method 5, Determination of Particulate Emissions from Stationary Sources

   b) EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources

   c) EPA Method 16 or 16A, Determination of TRS Emissions from Stationary Sources

7. The lime kiln is subject to the provisions of FAC Rules 17-2.240: Circumvention, 17-2.250: Excess Emissions, 17-4.130: Plant Operations-Problems, 17-2.710(3)(b): Continuous Monitoring, 17-2.710(4): Quarterly Reporting Requirements, 17-4.140: Reports, and 17-2.971(1)(c): Compliance Schedules for Continuous Monitoring Requirements.

8. All process equipment shall be inspected regularly and maintained in good operating condition to minimize fugitive emissions.

9. Objectionable odors shall not be allowed off plant property in accordance with FAC Rule 17-2.620(2).

10. The lime kiln shall be in compliance with all applicable provisions of FAC Rules 17-2 and 17-4.

11. Pursuant to FAC Rule 17-2.960(1), Compliance Schedules, the lime kiln shall be in final compliance by November 12, 1989, and the permittee shall provide proof of final compliance to the Department's Northwest District office by December 27, 1989.

PERMITTEE:
St. Joe Forest Products Co.

Permit Number: AC 23-136378
Expiration Date: March 27, 1990

SPECIFIC CONDITIONS:

12. Pre and post tests for SO_2 emissions shall be performed to establish the overall SO_2 removal efficiency of the lime kiln and its associated scrubber system (see January 22, 1988 letter from C. H. Fancy). The tests will be performed prior to and after connecting the noncondensible gas handling system to the lime kiln. The test method shall be EPA Method 6 in accordance with FAC Rule 17-2.700 and 40 CFR 60, Appendix A. The results will be used to rule out or require further emissions review pursuant to FAC Rule 17-2.500, PSD, and to assess the appropriate fee pursuant to FAC Rule 17-4, of which $1000.00 (more than 100 TPY potential pollutant emissions) has already been received.

13. The DER's Northwest District office shall be notified in writing 15 days prior to source testing pursuant to FAC Rule 17-2.700(2)(a)5. Written reports of the tests shall be submitted to the District office within 45 days of test completion.

14. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the compliance test results, the Certificate of Completion, and the contingency plan, to the DER's Northwest District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. (FAC Rules 17-2 and 17-4)

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct. (FAC Rule 17-4)

15. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to FAC Rule 17-2.100(118), Modification, shall be submitted for approval to the DER's Bureau of Air Quality Management office and Northwest District office.

Issued this_____day of____________,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

____
Dale Twachtmann, Secretary

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Main File
St. Joe Forest Products Company: AC 23-136376
AC 23-136377
AC 23-136378

FROM: Bruce Mitchell RBM

DATE: April 5, 1988

SUBJECT: Calculation of TRS Mass Emission Limits
Nos. 1-3 Lime Kilns

Based on a conversation with Mr. Victor Hutcheson, P.E., with Rust International Corporation, the following information was given to me in order to calculate the projected potential TRS mass emissions while using No. 6 Fuel Oil:

Data:
a) 15,084 dscfm
b) 2% O_2
c) 34.2% H_2O

(15,084 dscfm) x (34.55 ppm) x (1 mole/385 dscf) x
(34 lbs H_2S/mole) x (1440 min/24-hrs) = 2.76 lbs/hr
12.09 TPY

RBM/bm

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

TO: Main File
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AC 23-136377
AC 23-136378

FROM: Bruce Mitchell RBM

DATE: April 5, 1988

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(34 lbs H_2S/mole) x (1440 min/24-hrs) = 2.76 lbs/hr
12.09 TPY

RBM/bm

41,58

Vic Hutcheson

#6 FO

Lime kilns

15,084 @68°F
dscfm

2% O_2

34.2 [redacted] % H_2O by volume

---

20 ppm -

File Copy
Do Not Remove

B. Air Quality Analysis

An air dispersion modeling analysis was submitted by the applicant for the St. Joe Forest Products facility. The analysis addressed the potential sulfur dioxide (SO_2) and particulate matter (PM) air quality impacts considering all sources of these pollutants at the facility. The lime kilns were included in this modeling.

The modeling analysis evaluated the facilities' compliance with the appropriate air quality standards and PSD increments. The study included consideration of background concentrations of SO_2 and PM in the vicinity of the facility along with the concentrations due to the St. Joe facility itself.

The modeling results, combined with a background concentration, indicate that the St. Joe facility is not expected to cause or contribute to any SO_2 PSD increment or ambient air quality standard. The modeling has shown, however, the potential for exceedances of the PM ambient air standards and/or PSD increments. The primary contributors to this potential are believed to be the slakers. The applicant has agreed to correct the potential for these exceedances by raising the slaker stacks and/or by lowering the allowable emission limitations for these sources. Compliance will be shown through additional modeling to be completed and submitted by the applicant.

CM: P 216-039-971

PM
2 Feb. 1988
Port St. Joe

File Copy

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe Paper Company

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

DER
FEB 3, 1988
BAQM

February 1, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

We acknowledge receipt of your letter of January 22, 1988 regarding pre and post testing of combustion devices selected to incinerate TRS emissions to determine the SO_2 removal efficiency of the combustion devices.

As required, we will perform pre-testing of SO_2 emissions of our lime kilns during the 1988 annual compliance testing and will again perform the same SO_2 emissions test after installation and start-up of the TRS NCG system. The testing data will be forwarded to the Department's Bureau of Air Quality Management as directed in your letter. We respectfully and formerly request at this time that copies of all reviews, correspondence, memos, interpretations, etc. of the testing results by the Department's Staff which are placed on file be sent to us.

Please advise either Lewis Taylor, Environmental Coordinator, or I if you should have any questions.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

REN/crm

cc: Mr. Lewis Taylor w/enclosure
Mr. Terry Cole w/enclosure

CHF/BT
Jack Preece
Mike Harley
Bruce Mitchell
} 2.4.88

ST. JOE CONTAINER COMPANY, WITH CORRUGATED CONTAINER PLANTS LOCATED IN:

ATLANTA, GEORGIA • BALTIMORE, MARYLAND • BIRMINGHAM, ALABAMA • CHARLOTTE, NORTH CAROLINA • CHESAPEAKE, VIRGINIA • CHICAGO, ILLINOIS
DALLAS, TEXAS • DOTHAN, ALABAMA • SOUTH HACKENSACK, NEW JERSEY • HARTFORD CITY, INDIANA • HOUSTON, TEXAS • LAKE WALES, FLORIDA
LAURENS, SOUTH CAROLINA • LOUISVILLE, KENTUCKY • MEMPHIS, TENNESSEE • PITTSBURGH, PENNSYLVANIA • PORT ST. JOE, FLORIDA • ROCHESTER, NEW YORK
WILMINGTON, DELAWARE • NEW ENGLAND CONTAINER DIVISION CHICOPEE, MASSACHUSETTS

St. Joe FOREST PRODUCTS COMPANY
POST OFFICE BOX 190
PORT ST. JOE, FLORIDA 32456-0190

CERTIFIED MAIL
P 216 039 971

PORT SAINT JOE FLA.
FEB - 2 '88
U.S. POSTAGE
1.67
P.B. METER
3330003

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

BEST AVAILABLE COPY

CM: P 216-054-456

Joe Copy

1 Feb. 1988
Port St. Joe, FL

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

January 29, 1988

DER
FEB 2 1988
BAQM

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Clair F. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Fl 32301

Re: **Permit Applications**

AC 23-131963	AC 23-141984	AC 23-136378
AC 23-141981	AC 23-141986	AC 23-139086
AC 23-141982	AC 23-136376	AC 23-139087
AC 23-141983	AC 23-136377	

Dear Mr. Fancy:

This will respond to your letter of January 20, 1988 regarding the above applications. We are responding by separate letter to the applications other than the Number 6 recovery boiler. The Number 6 recovery boiler is one of the critical paths in our TRS compliance strategy and we appreciate the fact that you have now indicated a construction permit will be issued for it. As you suggested, I would like to provide the following order of priority to the department for the processing of these permits.

1. Number 6 recovery boiler, AC 23-131963 remains the most critical of the permits from a time standpoint.

2. After the Number 6 recovery boiler the order of priority are the sources which are affiliated with the Number 6 recovery boiler. These are the multiple effect evaporators, AC 23-139087, and the number 5 and 6 smelt dissolving tanks, AC 23-139086. All of these permits are necessary in order to provide operational capability for the Number 6 recovery boiler, so that Numbers 5 and 7 recovery boilers can be taken off line and be brought into compliance.

3. The lime kilns, AC 23-136376, AC 23-136377, and AC 23-136378.

4. Number 7 recovery boiler, AC 23-141982.

5. Number 7 smelt dissolving tank, AC 23-141983.

6. Batch Digester System, AC 23-141984.

7. Continuous (Kamyr) Digester System, AC 23-141986

8. Number 5 recovery boiler, AC 23-141981.

We appreciate your acceptance of the submittals of December 22, 1987 and January 7, 1988. However, I would like this to be considered a letter of authorization for Terry Cole to submit information on behalf of the company should that be necessary. I believe the past agency practice has been to allow the attorney of record for a company to submit information to the Department and believe you will find references to that agency practice in the permitting manual of the Agency. Nevertheless, that information was submitted under his signature in an attempt to save time in the permitting of these permits to install odor controls, rather than forwarding information to St. Joe by mail for my signature and then for the mail to again have to reach Tallahassee. Obviously technical information has always been signed and sealed by a professional engineer registered in Florida and will continue to be done in that fashion in the future.

The following will respond to the numbered paragraphs in your letter:

1. Attached is a copy of Rust International's calculations for stack exit velocities.

2. Information on reconstruction cost has twice been submitted to the Department in addition to the original submittal. However, because

of additional questions raised by the Environmental Protection Agency we, at considerable cost of both money and time, have had Rust International, in coordination with Combustion Engineering, perform an additional analysis of reconstruction although the approach requested is different than had previously been requested by your staff.

3. You are correct that the reference to AC 23-131968 was a typographical error and should be disregarded.

4. As I indicated by a letter to you, we have made available Mr. David Buff of KBN Engineering to discuss preliminary questions and concerns that the Department had about the information, data, and modeling included in the KBN report. As a result of that meeting, it is my understanding that all questions that the Department had were resolved except for the appropriate baseline date which is to be shortly resolved.

As can be noted by the thickness of the files and even of this response with attachments of your letter of January 20, 1988 we have supplied a large amount of data for your review. This has been done at great cost to the company. We have responded to series of information requests which we believe are excessive, although we attempt to continue working with you to answer these continuing questions. We believe that the Department has sufficient information to issue the necessary permits to allow us to comply with the TRS Rule. We hope the Department will observe the commitment by Mr. Smallwood that no additional request for information will be forthcoming where a reasonable attempt has been made to comply with a previous request.

Based on assurances given by the Department at the meeting on January 26, 1988, we anticipate that this information will allow the timely issuance of the requested permits and the reduction of TRS emissions at the plant.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

Robert E. Nedley

Robert E. Nedley
Vice President

RN:slt

cc: Steve Smallwood / Howard Rhodes
Lewis Taylor
Vic Hutcheson
Jack Preece
John Millican
Terry Cole

Attachments regarding No. 6
Recovery Boiler AC 23-131963:

-- Reconstruction Analysis by Rust International Corp. dated January 18, 1988
-- Letter from Combustion Engineering dated January 18, 1988
-- Response to Request for Additional Information on No. 6 Recovery Boiler dated December 17, 1987

Copied: CHF/BT
Bruce Mitchell
Tom Rogers
Mike Harley
Max Linn
2.3.88 mr

Rust International Corporation
RUST AND QUALITY—A Company and a Commitment

DER
FEB 2
BAQM

January 19, 1988

Mr. Fead Etheridge
St Joe Forest Products Co.
P.O. Box 190
Port St. Joe, FL 32456

Subject: Rust Contract 21-2982
St. Joe Forest Products
Port St. Joe, FL
TRS Control Project
NO.6 RECOVERY BOILER RECONSTRUCTION ANALYSIS

In response to the latest request from the DER and the EPA, I have completed a more detailed breakdown of repair costs versus replacement costs for the No.6 Recovery Boiler at St. Joe. As you know, we have previously furnished comparison costs for the repair and replacement of the subject boiler and these costs were developed in accordance with direction received from the DER in Tallahassee. At a meeting with the DER, we were directed as to the make-up of the comparison costs and it now appears that the specific items to be included and/or excluded for the reconstruction exercise were not in accordance with EPA's wishes. EPA further stated that they could not determine the exact cost basis of the analysis previously submitted per DER's recommendations.

In a 10/23/87 letter from EPA to DER concerning the No.6 Recovery, EPA stated the following:

> "In order for an existing facility to be considered reconstructed, the fixed capital cost of the new (replacement) components must exceed 50 percent of the fixed capital cost of a comparable, entirely new facility."
>
> "The December 16, 1985, preamble to the reconstruction regulations define fixed capital cost as the capital needed to provide all the depreciable components, including the costs of engineering, purchase and installation of major process equipment, contractor fee, instrumentation, auxiliary facilities, buildings and structures. In addition, costs associated with the purchase and installation of air pollution control equipment are only included in the fixed capital cost to the extent that the equipment is required as part of the manufacturing/operation process. The reconstruction regulation also specifies that the entirely new facility must be comparable to the planned renovated facility. The fixed capital cost of the renovated recovery furnace and the entirely new facility must be detailed to include the items referenced above."

Additionally, EPA commented on the cost comparisons previously submitted as follows:

> "The fixed capital cost for the entirely new facility included the cost of a cascade evaporator (direct contact evaporator). This cost can not be used because the planned renovated facility will not include a cascade evaporator."

Firstly, the cost previously submitted for the entirely new facility was based on a boiler which was to be an exact duplicate of the one presently installed at St. Joe. This included a cascade evaporator in the flue gas stream, the purpose of which is to utilize excess heat created in the boiler to evaporate the black liquor from 50% solids to 65+% solids such that it can be burned in the recovery unit. The cost of the completely new facility was meant to approximate, as closely as possible, the configuration of a repaired No.6 Recovery Boiler returned to its original configuration. It is true that the converted No. 6 Recovery Boiler at St. Joe will not have a cascade evaporator since this is being removed as part of converting the boiler to "low odor design" to enable the owner to comply with the new Florida TRS regulations. When the cascade evaporator is removed, additional boiler heat transfer surface, in the form of an extended economizer, must be installed in the boiler to dissipate the heat previously absorbed by the cascade evaporator. The subcontract cost of a new boiler with an extended economizer however, is within 3% of the cost of a new boiler with a cascade evaporator, and therefore the cost of an entirely new unit is not greatly influenced by whether it utilizes a cascade evaporator or an extended economizer. The costs associated with a cascade evaporator and an extended economizer have been confirmed by Combustion Engineering, the original boiler manufacturer, as shown in the attached 1/18/88 CE letter.

NO.6 RECOVERY BOILER REPAIR:

At this time, the new equipment associated with the refurbishment of the No.6 Recovery Boiler has either been purchased or is ready to be purchased, and the costs are therefore readily identifiable. The general construction contract for the project is presently in a state of firm negotiation and therefore the costs for the construction materials and labor are firmly identified. It is therefore reasonable to project the cost of repairing the boiler to an operable state with a very high degree of accuracy.

The cost of repairing the St. Joe Forest Products No.6 Recovery Boiler is estimated to be $11,088,830. This estimated cost includes the following major equipment and cost items, which are further identified in the attachments:

Furnace
Superheater and Screen
Boiler Bank
Extended Economizer
Sootblowers
Safety Valves
Air System
Air Foil Measurement
Air Control Dampers
Boiler Refractory, Insulation & Lagging (BRIL)
Smelt Spouts
Fans
Tanks
Agitators
Process Pumps
Ductwork
Flue Gas Stack
Instrumentation
Piping
Electrical
TRS Monitor
Construction Labor
Construction Indirects
Sales Tax
Engineering
Contractor Insurance
Construction Fees
Contingency
Spare Parts

REPLACEMENT RECOVERY BOILER FACILITY:
In order to provide a more accurate projection of the cost of a new replacement recovery boiler, I have had our Estimating Department develop an independent total estimated project cost based on projected equipment costs and layout drawings for an entirely new facility comparable to the appropriate renovation of the No.6 Recovery Boiler at St. Joe.

The cost of an entirely new comparable recovery unit, built on St. Joe Forest Products' property and integrated into the present mill is estimated to be $30,908,001 assuming that no major demolition is required for site preparation . This estimated cost includes the following major equipment and cost items, which are further identified in the attachments:

Boiler Support Structure
Boiler Foundation & Piling
Boiler Grid & Perimeter Steel
Boiler Support Devices
Furnace
Boiler Drums
Superheater and Screen

Boiler Bank
Extended Economizer
Sootblowers
Safety Valves
Boiler Main Steam Lead
High Pressure Steam Headers
Air System
Air Foil Measurement
Air Control Dampers
Boiler Refractory, Insulation & Lagging (BRIL)
Smelt Tank
Smelt Spouts
Smelt Vent Ductwork
Fans
Tanks
Agitators
Process Pumps
Booster Pumps
Ductwork
Flue Gas Stack
Control Rooms
Motor Control Center Rooms
Electrical Equipment Rooms
Fire Protection System
Site Preparation
Equipment Foundations
Lighting & Grounding
Heating, Ventilation & Air Conditioning
Instrumentation
Piping
Electrical
TRS Monitor
Construction Labor
Construction Indirects
Sales Tax
Engineering
Contractor Insurance
Construction Fees
Contingency
Escalation
Spare Parts

RECONSTRUCTION ANALYSIS:
It should be noted that the cost of the recovery boiler pollution control equipment, the electrostatic precipitator, is not included in either the repair costs or the cost of the entirely new facility. The precipitator is not required as part of the operating process and by EPA's definition is excluded from the costs.

Review of the costs presented herein and attached clearly indicate that the fixed capital cost of the new (replacement) components for the repaired facility do not exceed 50 percent of the fixed capital cost of a comparable, entirely new facility. The repair cost for the No.6 Recovery Boiler represents approximately **36 percent** of the cost of an entirely new, comparable facility and therefore the existing recovery unit can not be considered reconstructed.

I trust that these details will assist in resolving the outstanding questions with DER and EPA. I have attached copies of the boiler repair equipment list and the associated recovery boiler estimate summary sheets for your review. Please call me if you have any questions.

Very truly yours,

RUST INTERNATIONAL

V.L. Hutcheson
Project Manager

attachment

cc: w/attachment
L. Taylor
R. Nedly
T. Cole
M. Troup
V. Vora

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NO. 5 RECOVERY BOILER REPAIR COST BASED ON ACTUAL PRICES AND ADDITION OF EXTENDED ECONOMIZER (FILE SRJB5CMF.SS)

NOTE: Individual costs below represent actual purchased equipment costs and also anticipated construction materials and labor costs negotiated for a lump sum construction contract price of $2,921,000

DESCRIPTION	MANHOURS	RATE	LABOR $	MATERIAL $	SUBCONTR $	TOTAL $	% DIR $
SITE	0	12.50	0	0	0	0	0.00%
BUILDINGS	0	14.78	0	0	0	0	0.00%
EQ FOUNDATIONS	0	14.35	0	0	0	0	0.00%
EQUIPMENT	3,361	16.62	55,856	456,692	5,859,455	6,372,003	76.05%
M&E SERVICES	0	16.05	0	0	0	0	0.00%
INSTRUMENT	5,886	17.54	103,249	595,579	0	698,827	8.34%
PIPING	17,022	17.02	289,717	424,561	91,180	805,457	9.61%
ELECTRICAL	15,191	16.49	250,505	252,373	0	502,878	6.00%
SUBTOTAL	41,461	16.87	699,326	1,729,204	5,950,635	8,379,165	100.00%
PREMIUM PAY			Incl			0	0.00%
TOTAL DIRECTS			699,326	1,729,204	5,950,635	8,379,165	100.00%
			8.35%	20.64%	71.02%	100.00%	

CONSTRUCTION INDIRECTS

		% Direct Labor $
Mgt Home Office	Incl	12.79
Mgt Fld Office	Incl	37.31
Temp Constr	Incl	15.99
Sm Tls/Eq Rntl	Incl	41.58
Fld Ofc Misc	Incl	9.60
Computer Svcs	Incl	1.39
Exp/Lab %	Incl	50.00
TOT INDIRECTS	1,404,858	16.77% TD

SUBTOT DIR&IND		9,784,023	
Sales Tax		235,226	
Engineering	5.0 % Total Installed Cost	554,441	
Misc Insurance		Incl	
Constr OH&P/Fee		Incl	
Contingency	5.0 % Directs + Indirects	489,201	
Escalation	0.0 Percent (Actual prices are not subject to escalation)	0	
Owners Cost		0	
Spare Parts		25,938	
Start Up		0	
Sub Bonding		Incl	
SUBTOTAL		1,304,807	
TOTAL		11,088,830	132.34% TD
Allowances		0	
GRAND TOTAL		11,088,830	

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EQUIPMENT LIST - ENGINEERING

CONTRACT NO.	2982	AREA	05 - NO. 6 REC. BOIL	ENGINEER	STEVE WILSON
CLIENT	ST. JOE FOREST PRODUCTS	SECTION	ENERGY STAFF	PROJECT MGR.	V. L. HUTCHESON
LOCATION	PORT ST. JOE, FLORIDA	REF. DWG.		DATE	1/18/88
DESCRIPTION	NO. 6 RECOVERY REPAIR	SHEET NO.	1 OF 4	REVISION	

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Eq2982
Dept. 08

ACCOUNT NO. AND/OR EQUIPMENT NO.	DESCRIPTION	PUMPS GPM	PUMPS TDH	MOTORS HP CONN.	MOTORS HP OPER.	MOTORS RPM	PAINT	INSUL	SUB	INSP	P.O. NO. ISSUED	VENDOR	VENDOR DWGS. DWG. NO. STATUS	PRICE	REMARKS
5-59-1	Boiler repair, No. 6 Recovery, 625 psig, 760°F Includes: Furnace; Superheater and Screen; Boiler Bank; Sootblowers; Safety Valves; Air System; Air Foil Air Measurement; Air Control Dampers; BRIL											Combustion Engr'ing		3,739,455	(Subcontract)
5-59-1a	Heat recovery equipment including extended economizer											C-E		2,120,000	(Subcontract)
5-59 79	Smelt Spout, No. 1											C-E			
5-59-79	Smelt Spout, No. 2											C-E			
5 62-1	Air Heater, primary, steam											C-E			
5-62-2	Air Heater, secondary, steam											C-E			
5-65-73	Fan, primary F.D.										63679 6/25/87	Barron		21,471	
5-65-11	Motor			100	41	1200						GE		4,773	
5-65-76	Damper, primary F.D. fan										63679 6/25/87	Barron		INCL.	

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EQUIPMENT LIST - ENGINEERING

CONTRACT NO.	21-2982	AREA	05 - NO. 6 REC. BOILER	ENGINE.	STEVE WILSON
CLIENT	ST. JOE FOREST PRODUCTS	SECTION	ENERGY STAFF	PROJECT ..R.	V. L. HUTCHESON
LOCATION	PORT ST. JOE, FLORIDA	REF. DWG.		DATE	1/18/88
DESCRIPTION	NO. 6 RECOVERY REPAIR	SHEET NO.	2 OF 4	REVISION	

ForeWord
TX407B
Eq2982
Dept. 08

ACCOUNT NO. AND/OR EQUIPMENT NO.	DESCRIPTION	PUMPS GPM	PUMPS TDH	MOTORS HP CONN.	MOTORS HP OPER.	MOTORS RPM	PAINT	INSUL	SUB	INSP	P.O. NO. ISSUED	VENDOR	VENDOR DWGS. DWG. NO. STATUS	PRICE	REMARKS
5-62-77	Tank, condensate receiver, 3 ft dia x 3 ft high							X			63757 08/19/87	Bay Tank	BL-0132 Cert.	2,768	Insul: 5" - BK
5-79-1	Tank, continuous blowdown							X			63757 08/19/87	Bay Tank	BL-0131 Cert.	2,832	Insul: 5" - BK
5-79-76	Heat exchanger, C.B.D.							X			63828 11/09/87	Weldon	AF-6-317 RFB	5,943	Insul: 5" - BK
5-79-2	Tank, blowoff							X			63757 08/19/87	Bay Tank	BL-0130 Cert.	8,483	Insul: 1" - BK
5-36-1	Tank, chemical ash							X			63757 08/19/87	Bay Tank	BL-0133 AN	16,828	Insul: 4" - BK
5-36-73	Agitator, ash tank													9,725	
5-36-55	Drive													INCL.	
5-36-11	Motor			5		1800								199	
5-36-46	Pump, No. 1, B.L. feed	130	107									Worth'gton		4,102	
5-36-36	Drive, variable speed										63813 10/21/87	Emerson		11,600	
5-36-13	Motor			40	27.9	1800								980	
5-36-47	Pump, No. 2, B.L. feed	130	107									Worth'gton		4,102	
5-36-37	Drive, variable speed										63813 10/21/87	Emerson		11,600	
5-36-14	Motor			40	0	1800								980	
5-53-1	Heater, secondary B.L.							X			63474 12/12/86	C-E	15551-1E9327 Cert.	11,360	Insul: 4" BK

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EQUIPMENT LIST - ENGINEERING

CONTRACT NO.	21-2982	AREA	05 - NO. 6 REC. BOILER	ENGINEER	STEVE WILSON		ForeWord
CLIENT	ST. JOE FOREST PRODUCTS	SECTION	ENERGY STAFF	PROJECT MGR.	V. L. HUTCHESON		TX407B
LOCATION	PORT ST. JOE, FLORIDA	REF. DWG.		DATE	1/18/88		Eq2982
DESCRIPTION	NO. 6 RECOVERY REPAIR	SHEET NO.	3 OF 4	REVISION			Dept. 08

ACCOUNT NO. AND/OR EQUIPMENT NO.	DESCRIPTION	PUMPS GPM	PUMPS TDH	MOTORS HP CONN.	MOTORS HP OPER.	MOTORS RPM	PAINT	INSUL	SIUBS	INSP	P.O. NO. ISSUED	VENDOR	VENDOR DWGS. DWG. NO. STATUS	PRICE	REMARKS
5-68-73	Fan, I.D.							X			63679 6/25/87	Barron	DS-16514-F Cert.	43,825	Insul: 4" BD
5-68-36	Drive, variable speed										63810 10/09/87	G. E.		70,000	
5-68-11	Motor			300	114	900					63801 10/07/87	G. E.		19,223	
5-72-1	Tank, smelt dissolving, (existing)													-0-	
5-72-73	Agitator										63829 11/09/87	Lightnin		30,052	
5-72-60	Drive													INCL.	
5-72-11	Motor			30		1800								1,074	
5-72-45	Pump, No. 1, G.L. transfer	250	68									Worth'gton		4,377	
5-72-12	Motor			10	7.5	1800								324	
5-72-46	Pump, No. 2, G.L. transfer	250	68									Worth'gton		4,377	
5-72-13	Motor			10	0	1800								324	
2-78-47	Pump, No. 1, weak wash	250	110'									Worth'gton		4,902	
2-78-13	Motor			20	12.5	1800								533	

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EQUIPMENT LIST - ENGINEERING

CONTRACT NO. 21-2982	AREA	05 - NO. 6 REC. BOILER	ENGINEER	STEVE WILSON	ForeWord
CLIENT ST. JOE FOREST PRODUCTS	SECTION	ENERGY STAFF	PROJECT MGR.	V. L. HUTCHESON	TX407B
LOCATION PORT ST. JOE, FLORIDA	REF. DWG.		DATE	1/18/88	Eq2982
DESCRIPTION NO. 6 RECOVERY REPAIR	SHEET NO.	4 OF 4	REVISION		Dept. 08

ACCOUNT NO. AND/OR EQUIPMENT NO.	DESCRIPTION	PUMPS GPM	PUMPS TDH	MOTORS HP CONN.	MOTORS HP OPER.	MOTORS RPM	PAINT	INSUL	SUB	INSP	P.O. NO. ISSUED	VENDOR	VENDOR DWGS. DWG. NO. STATUS	PRICE	REMARKS
2-78-48	Pump, No. 2, weak wash	250	110'									Worth'gton		4,902	
2-78-14	Motor			20	0	1800								533	
5-55-2.2	Ductwork, economizer outlet							X					AF-6-040,041 042, 045 RFC	30,000	Insul: 4" BD
5-55-9	Stack, fiberglass, 8 ft dia with a reducing cone on top to 6 ft I.D. Complete with: - Lightning protection - Environmental test station with platform - CEMS sample port													124,500	

RECONSTRUCTION ANALYSIS- SJFP No.6 RECOVERY BOILER

NO. 6 RECOVERY REPLACEMENT COST OF NEW BOILER WITH EXTENDED ECONOMIZER

DESCRIPTION	MANHOURS	RATE	LABOR $	MATERIAL $	SUBCONTR $	TOTAL $	% DIR $
SITE	0	12.50	0	0	200,000	200,000	0.98%
BUILDINGS	38,254	14.78	565,394	1,144,508	1,793,152	3,503,054	17.25%
EQ FOUNDATIONS	5,267	14.35	75,581	38,251	2,866	116,698	0.57%
EQUIPMENT	5,731	16.62	95,249	1,428,770	11,635,575	13,159,594	64.80%
M&E SERVICES	10,039	16.05	161,126	129,029	138,104	428,259	2.11%
INSTRUMENT	9,434	17.54	165,472	656,703	0	822,175	4.05%
PIPING	28,591	17.02	486,619	715,866	129,980	1,332,465	6.56%
ELECTRICAL	22,543	16.49	371,734	298,435	0	670,169	3.30%
SUBTOTAL	119,859	16.03	1,921,176	4,411,562	13,899,677	20,232,415	99.62%
PREMIUM PAY			76,847			76,847	0.38%
TOTAL DIRECTS			1,998,023	4,411,562	13,899,677	20,309,262	100.00%
			9.84%	21.72%	68.44%	100.00%	

CONSTRUCTION INDIRECTS

		% Direct Labor $
Mgt Home Office	245,718	12.79
Mgt Fld Office	716,791	37.31
Temp Constr	307,196	15.99
Sm Tls/Eq Rntl	798,825	41.58
Fld Ofc Misc	184,433	9.60
Computer Svcs	26,704	1.39
Exp/Lab %	1,098,913	50.00
TOT INDIRECTS	3,378,580	16.64%
SUBTOT DIR&IND	23,687,842	
Sales Tax	568,070	
Engineering 8.0 % Total Installed Cost	2,472,640	
Misc Insurance	26,057	
Constr OH&P Fee	522,913	
Contingency 10.0 % Directs + Indirects	2,368,784	
Escalation 3.5 Percent	1,045,198	
Owners Cost	0	
Spare Parts	105,299	
Start Up	0	
Sub Bonding	111,197	
SUBTOTAL	7,220,159	
TOTAL	30,908,001	152.19%
Allowances	0	
GRAND TOTAL	30,908,001	

RUST - PARAMETRIC ESTIMATE
CLIENT: ST. JOE FOREST PRODUCTS
CONTRACT:21-2982
DATE: 19-Jan-88

REPLACEMENT RECOVERY BOILER

ESTIMATE

LBS/DAY SOLIDS	900,000			
TEMP.	760			
PSI	625			
BUILDING DIMENSIONS	LENGTH	WIDTH	HEIGHT	
	88.8	66.5	106.5	
	0.0	0.0	0.0	
BUILDING VOLUME-CF		628,904		

MONTH DAY YEAR DURATION

STR START DATE

FILE NAME:PRB

EARTHQUAKE FACTOR	1.00				
PRODUCTIVITY FACTOR	1.00				
LABOR FACTOR	1.31	SPREAD FOOTING	0	NORTHERN CLIMATE	0
MATERIAL FACTOR	1.15	PILING	1	SOUTHERN CLIMATE	1
SUBCONTRACT FACTOR	1.20	GRATING FLOORS %	50		
EQUIPMENT FACTOR	1.20	CONCRETE FLOORS %	50	ROOF LOCATED PRECIPITATOR	0
SALARY FACTOR	1.00			GROUND LOCATED PRECIPITATOR	0
		DISTRIBUTIVE CONTROLS	1		
		CONVENTIONAL CONTROLS	0		

WORK PKG.DESCRIPT.	QTY	MU	TOTAL MH	LABOR RATE	LABOR $	UNIT $M	MATERIAL $	UNIT $S/C	S/C $	UNIT $ TOT.	TOTAL $
LDING											
Exc/Bkf	4,402	CY	3,302	13.36	44,118	1.15	5,063	4.56	20,075	15.73	69,255
Piling	0	LF	0	0.00	0	0.00	0	0.00	1,484,000	0.00	1,484,000
OSITE EARTHWORK	4,402	CY	3,302	13.36	44,118	1.15	5,063	341.65	1,504,075	352.83	1,553,255
110/150 Forms	3,105	SF	1,553	13.30	20,643	1.21	3,749	0.00	0	7.86	24,392
210/250 Rebar	18	TN	634	16.05	10,173	465.75	8,436	0.00	0	1,027.41	18,609
310/350 Conc.	207	CY	393	13.36	5,255	49.45	10,236	0.00	0	74.84	15,491
COMPOSITE Bldg Fdn	207	CY	2,580	13.98	36,071	108.32	22,421	0.00	0	282.57	58,493
130 Forms	1,976	SF	790	13.30	10,510	2.01	3,977	0.00	0	7.33	14,486
230 Rebar	6	TN	331	16.05	5,305	465.75	2,655	0.00	0	1,396.51	7,960
330 Conc.	152	CY	410	13.36	5,484	49.45	7,516	0.00	0	85.53	13,000
COMPOSITE S.O.G.	152	CY	1,531	13.91	21,299	93.08	14,148	0.00	0	233.20	35,446
140 Forms	1,980	SF	653	13.30	8,688	1.38	2,732	0.00	0	5.77	11,420
145 Deck'g	14,666	SF	587	13.30	7,800	1.38	20,239	0.00	0	1.91	28,039
240 Rebar	7	TN	277	16.05	4,448	488.75	3,387	0.00	0	1,130.65	7,835
340 Conc.	99	CY	505	13.36	6,746	49.45	4,896	0.00	0	117.60	11,642
COMPOSITE Supp Flr	99	CY	2,022	13.69	27,683	315.70	31,254	0.00	0	595.32	58,937
100 Forms	7,061	SF	2,996	13.30	39,840	1.48	10,458	0.00	0	7.12	50,299
200 Rebar	31	TN	1,242	16.05	19,927	470.93	14,478	0.00	0	1,119.12	34,404
300 Conc.	458	CY	1,309	13.36	17,486	49.45	22,648	0.00	0	87.63	40,134
COMPOSITE BLG CONC	458	CY	6,133	13.87	85,053	148.09	67,823	0.00	0	333.79	152,876
420 Struct.	553	TN	9,962	15.98	159,210	1,293.75	716,007	0.00	0	1,581.43	875,217
430 Misc	66	TN	3,985	16.64	66,294	1,437.50	95,468	0.00	0	2,435.72	161,762
431 Grating	17,495	SF	700	15.98	11,184	12.08	211,252	0.00	0	12.71	222,436
COMPOSITE STRUCTURAL	620	TN	14,646	16.16	236,688	1,649.96	1,022,727	0.00	0	2031.81	1,259,415
450 Blt-Up	5,905	SF	0	0.00	0	0.00	0	5.76	34,014	5.76	34,014
470 Siding	33,079	SF	0	0.00	0	0.00	0	3.00	99,237	3.00	99,237
COMPOSITE RF & SDG	38,984	SF	0	0.00	0	0.00	0	3.42	133,251	3.42	133,251
440 Masonry	5,905	SF	9,448	13.76	129,962	2.59	15,280	0.00	0	24.60	145,241
460 Carp'y	5,905	SF	2,657	14.15	37,596	4.60	27,164	1.20	7,086	12.17	71,846
470 Painting	5,905	SF	2,067	15.07	31,137	1.09	6,451	0.00	0	6.37	37,588
COMPOSITE Msc Arch	5,905	SF	14,172	14.02	198,694	8.28	48,895	1.20	7,086	43.13	254,676
SUBTOTAL BUILDING		LS	38,254	14.76	564,553		1,144,508		1,644,412		3,353,473

CLIENT: ST. JOE FOREST PRODUCTS
CONTRACT:21-2982

REPLACEMENT RECOVERY BOILER

ESTIMATE

WORK PKG.	QTY	MU	TOTAL MH		LABOR $	UNIT $M	MATERIAL $	UNIT $S/C	S/C $	UNIT $ TOT	TOTAL $
EQUIPMENT FOUNDATIONS											
070/074 Exc/Bkf	629	CY	629	13.36	8,403	1.90	1,193	4.56	2,868	19.82	12,465
090 Piling	0	LF	0	0.00	0	0.00	0	0.00	0	0.00	0
COMPOSITE EARTHWORK	629	CY	629	13.36	8,403	1.90	1,193	4.56	2,868	19.82	12,465
110/150 Forms	3,173	SF	2,412	13.30	32,069	1.21	3,832	0.00	0	11.31	35,900
210/250 Rebar	13	TN	400	16.05	6,417	575.00	7,299	0.00	0	1,080.50	13,715
310/350 Conc.	159	CY	317	13.36	4,240	49.45	7,846	0.00	0	76.17	12,087
COMPOSITE Concrete	159	CY	3,129	13.65	42,725	119.60	18,977	0.00	0	388.87	61,703
430 Misc Iron	13	TN	1,509	16.64	25,111	1,437.50	18,081	0.00	0	3,433.94	43,192
SUBTOTAL EQ. FDNS.		LS	5,267	14.47	76,240	-	38,251	-	2,868	-	117,359
MECHANICAL											
559 Boiler		LS	1,258	16.64	20,926	-	223,994	-	10,250,000	-	10,494,920
561 Precip.		LS	0	16.64	0	-	0	-	0	-	0
512 Stack		LS	700	16.64	11,646	-	124,500	-	0	-	136,146
583 Other Eq.		LS	3,773	16.64	62,778	-	1,080,276	-	913,575	-	2,056,629
SUBTOTAL EQUIPMENT		LS	5,731	16.64	95,350	-	1,428,770	-	11,163,575	-	12,687,695
M & E SERVICES											
485 Plbg.	5,905	SF	4,134	15.98	66,064	3.45	20,373	0.00	0	14.64	86,437
489 F-P	5,905	SF	0	0.00	0	0.00	0	3.00	17,716	3.00	17,716
495 HVAC	5,905	SF	0	0.00	0	0.00	0	20.40	120,466	20.40	120,466
830 Ltg & Gr	5,905	SF	5,905	16.11	95,150	18.40	108,656	0.00	0	34.51	203,806
SUBTOTAL M & E	5,905	LS	10,039	16.06	161,214	21.85	129,029	23.40	138,182	72.55	428,425
INSTRUMENTATION											
590 Instr.	-	LS	7,484	17.55	131,373	--	311,655	--	0		443,029
591 DCS Sys.	-	LS	1,006	17.55	17,664	--	274,554	--	0		292,217
592 Panels	--	LS	943	17.55	16,560	--	70,494	--	0		87,053
SUBTOTAL INSTR.	--	LS	9,434	17.55	165,597	--	656,703	--	0		822,299
PIPING											
620 C.S.	7,515	LF	18,787	17.03	319,936	40.25	302,464	0.00	0	82.83	622,400
630 S.S.	3,268	LF	9,804	17.03	166,962	126.50	413,402	0.00	0	177.59	580,364
640 C.M.	0	LF	0	0.00	0	0.00	0	0.00	0	0.00	0
798 Insul.	-	LS	0	0.00	0	--	0	--	128,856	-	128,856
SUBTOTAL PIPING	10,783	LF	28,591	17.03	486,898	66.39	715,866	-	128,856	123.50	1,331,620
ELECTRICAL											
800 Equip.	-	LS	1,572	16.51	25,952		184,449	0.00	0		210,401
825 Cble/Wire	71,695	LF	12,905	16.51	213,012	1.15	82,449	0.00	0	4.12	295,461
823/824 Trav/Cond	5,377	LF	8,066	16.51	133,132	5.87	31,537	0.00	0	30.62	164,669
SUBTOTAL ELECTRICAL	77,072	LF	22,543	16.51	372,096	3.87	298,435	0.00	0	8.70	670,531
TOTAL W/O PREMIUM			119,858		1,921,949	-	4,411,562	-	13,077,892	-	19,411,402
		AVE. RATE		16.04							
Premium					57,658						57,658
TOTAL DIRECTS			119,858		1,979,607	-	4,411,562	-	13,077,892	-	19,469,061

COMBUSTION ENGINEERING

January 18, 1988
FS-CE-0215

Mr. Victor L. Hutcheson
Project Manager
Pulp & Paper Division
Rust International Corp.
P.O. Box 101
Birmingham, AL 35201

Subject: St. Joe Forest Products Co., Port St. Joe, Florida
New Unit and Boiler Repair Pricing

Dear Mr. Hutcheson,

In response to your verbal request for chemical recovery boiler pricing for repairs and new units, I hereby provide you with the following budgetary information.

The units we have developed this pricing for is sized to process 900,000 lbs. of dry solids per day. The operating conditions of the unit are 625 PSIG, Superheater Outlet temperature of 760 degrees Fahrenheit when being fed 290 degree feedwater.

(These prices are based upon design capabilities identical to the ST. Joe Forest Products Company Units 5 and 6, C-E Contract 15551)

I. <u>Repair of No. 6 Recovery Boiler at St. Joe Forest Products Company, St. Joe, Florida.</u>

The scope of repair includes work on basic boiler equipment only, does not include repairs to auxiliaries, black liquor systems, fuel oil systems, green liquor systems, boiler exit heat recovery equipment, etc. This scope is a minimum required to return the unit to service. Engineering, material and erection at the St. Joe job site, the price is $3,739,455.00.

An option to this price for heat recovery is $2,120,000 for an extended (Low Odor) economizer, or $1,870,000 for a cascade evaporator and standard economizer. Note the price for just the cascade evaporator is $750,000.

II. New Boiler.

Same design as original C-E Contract 15551 (i.e. a V3R design). The scope of supply is the basic boiler only as originally supplied except with the cascade evaporator deleted and the addition of an extended economizer. The price for this unit is $10,250,000.00.

Very truly yours,

COMBUSTION ENGINEERING, INC.

F. Z. Stiteler

F. Z. Stiteler
District Manager

cc: J. Harrison
M. M. Robinson
D. Cavers

FZS/roc

Rust International Corporation

RUST AND QUALITY—A Company and a Commitment SM

December 17, 1987

DER

FEB 2

BAQM

Mr. Clair Fancy
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Rust Contract 21-2982
St. Joe Forest Products Co.
Port St. Joe, Florida
TRS Control Project
No. 6 Recovery Boiler Conversion
Construction Permit Application No. 23-131963
Response to DER Questions

Dear Mr. Fancy:

Lewis Taylor, St. Joe Forest Product's Environmental Manager and Terry Cole, Attorney, requested that I write you directly and clarify various DER questions which were identified either in DER's incompleteness letter, dated 12/11/87, or in your meeting with these individuals on 12/16/87.

1. Stack Exit Velocity

Section III. H. of the permit application indicated the following:

Stack diameter - 8'
Gas Flow Rate - 153,491 ACFM
Velocity - 90.48 fps at stack exit

Rust Drawing AF-6-028, included in the attachments to the permit application, shows that the stack diameter is 8'-0" and there is an 8'-6' reducer installed at the stack exit. The gas velocity at the stack exit is calculated as follows:

V = Q/A
V = Velocity at Stack Exit
Q = Flue Gas Flow
A = Area of Stack Exit

$$V = \frac{153491 \text{ ft}^3/\text{min}}{\text{pi x (3 ft (radius))}^2} = 5428.6 \text{ FPM} = 90.48 \text{ FPS}$$

2. No. 6 Precipitator similarity to No. 5 Precipitator

The original electrostatic precipitators installed with No.'s 5 and 6 Recovery Boilers in 1952 were completely demolished and replaced in 1969 with two identical Koppers replacement precipitators. In 1981 the precipitator for No. 5 Recovery Boiler had deteriorated to a point at which a refurbishment was necessary. At This time, the No. 5 Precipitator was refurbished by Koppers, its original manufacturer, to the identical specifications and configuration as when it was installed in 1969. Since the refurbished configuration of the No. 5 Precipitator is identical to the original and existing configuration of the present No. 6

Recovery Boiler Precipitator, it must be concluded that the No. 5 Precipitator represents a fair comparison to the performance of the existing No. 6 Precipitator.

3. No. 6 Recovery Similarity to No. 5 Recovery Boiler

The No. 5 and 6 Recovery Boilers were designed and built as identical process units in 1952. In 1981, the No. 5 Recovery Boiler was repaired to enable a state of safe and continuous operation. The 1981 repair included the installation of a partial membrane wall in the boiler furnace.

The original furnace walls were constructed of bare tubes and then sealed with refractory, insulation and lagging. If this furnace seal was not properly maintained, areas of air infiltration would develop and result in less than optimum air distribution in the furnace, and thus influence the TRS emissions out of the stack. Black liquor burning capacity is not influenced by the presence or absence of the partial membrane wall. Black liquor burning capacity is set by the stoichiometric conditions inside the furnace and the ability of furnishing the proper amount of combustion air for burning the black liquor.

As stated in the previous paragraph, the potential air infiltration from a bare tube furnace wall can influence the generation of TRS. Particulate matter generation, however, is not influenced by the presence or absence of the partial membrane wall. Fume is generated in the center of the hearth, which is the hottest location in the furnace. The amount of particulate matter generated is directly related to the rate of fume generation. The production of fume is not related to the amount of air infiltration. These facts have been confirmed thru discussions with Combustion Engineering's principal performance engineers. Combustion Engineering is the original designer and manufacturer of both the No. 5 and No. 6 Recovery Boilers.

Based on the above discussions, it must be concluded that the black liquor burning capacity and the particulate generation of the No. 5 Recovery Boiler represents a fair comparison to the performance of the existing No. 6 Recovery Boiler.

Yours very truly,

RUST INTERNATIONAL CORPORATION

V. L. Hutcheson
Project Manager

VLH/rsk

cc: Lewis Taylor
Fead Etheridge (5)
Terry Cole
John Millican

CM: P216-039-945

PM
2 Feb. 1988
Tallahassee, FL

File Copy

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA

MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

January 28, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

DER
FEB 2 1988
BAQM

Mr. Clair Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Fl 32301

Re: AC 23-136376
AC 23-136377
AC 23-136378

Dear Mr. Fancy:

This will respond to the Department's December 10, 1987 completeness review for the three lime kiln construction permits listed above. Responses correspond to the numbered paragraphs in the Department's letter.

1. The best available information has been provided in the annual reports. However, the interim operating permits include the most current information on capacity and emissions.

2. The lime kilns have been continuously operated on a rotating basis, and in compliance with the operating permits. There have been no extended shut-downs.

3. There have been no physical changes or changes in the method of operation since September 24, 1976 except for routine maintenance, replacement of component parts, repairs and operating variations within permit limits. All of these are as provided for under the definition of "modification" in New Source Performance Standards, 40 CFR Part 60.14.

4. System losses are made up with purchased lime.

5. Please refer to interim operating permits. Capacities are the same.

St. Joe FOREST PRODUCTS COMPANY
POST OFFICE BOX 190
PORT ST. JOE, FLORIDA 32456-0190

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P 216 039 945
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DER
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BAQM

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Mr. Clair Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

2-3-88

~~CHF~~
BT
FYI

---

6. Compliance tests are on file with the Department.

7. The permit application documents that the existing maximum emission limitations will not be exceeded and NSPS does not apply. The operating rate in the interim operating permit will not be increased.

8. The change in the fuel burner is to provide for the incineration of NCG and there will be no increase in permitted fuel consumption. Current and existing maximum firing rates are the same. See permit application for emission calculations.

9. An ambient air quality standard and an increment analysis were furnished to the Department on 1/7/88 although there is no facility wide net emissions increase.

10. No.

11. Current tests on file with the Department confirm compliance with particulate emission limits. When the changes requested in the construction permit application are completed, tests will be performed to confirm compliance with TRS emission limits.

12. Yes.

13. Yes.

Based on assurances given by the Department at the meeting on January 26, 1988, we anticipate that this information will allow the timely issuance of the requested permits and the reduction of TRS emissions at the plant.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

Robert E. Nedley

Robert Nedley
Vice President

RN:slt
cc: Steve Smallwood
Lewis Taylor
Vic Hutcheson
Jack Preece
John Millican
Terry Cole
Howard Rhodes

Copied: Bruce Mitchell
Pradeep Raval
CHF/BT
2.3.88

CM: P 216 039 961

PM
1·27·88
Port St. Joe, FL

File Copy

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

DER
JAN 29 1988
BAQM

January 26, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Referring to Item #4 on pages two and three of your letter of January 20, 1988, please accept this letter as my written approval for Mr. David Buff, KBN, to meet with BAQM engineering/meteorological staff to discuss your concerns about the information, data, and modeling included in the KBN report for St. Joe Forest Products Company. I would also request that our Environmental Coordinator, Mr. Lewis Taylor, be allowed to attend the technical meeting, there would be no other representatives from St. Joe. I appreciate your suggestion for the meeting and assure you that St. Joe is ready to do all possible within reason to reduce the time and expense required for clarifications, additional data, and additional analysis.

It is my understanding that Mr. D. Buff will be in Tallahassee, Florida today attending the meeting concerning TRS Permits between the Florida Pulp and Paper Association Technical Committee and Staff of Department of Environmental Regulation, and that he will remain in Tallahassee Wednesday for other business matters. Mr. Lewis Taylor will also be attending the meeting today and would be available on Wednesday. If at all possible, I request that BAQM engineering/meteorological staff meet with Messrs. Buff and Taylor to discuss the KBN report either today after the TRS Permit meeting or Wednesday afternoon, January 27, 1987. I have ask Mr. Taylor to approach you today with this meeting request along with a copy of this letter which is being mailed today.

St. Joe FOREST PRODUCTS COMPANY

POST OFFICE BOX 190
PORT ST. JOE, FLORIDA 32456-0190

PORT SAINT JOE FLA. JAN 27 '88

U.S. POSTAGE 1.67

P.B. METER 333006

CERTIFIED MAIL

P 216 039 961

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

I will reply to the various questions and specific items of your letter of January 20, 1988 early next week.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

REN/crm

cc: H. Rhodes
S. Smallwood
E. Middleswart
V. Hutcheson, P.E.
D. Buff, P.E.
L. Taylor
T. Cole
J. Millician

Copied: Bruce Mitchell
Mike Harley
CHF/BT
Pradeep Rawal
2.1.88 (mr)

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Mr. R.E. Nedley, Vice President St. Joe Forest Products P.O. Box 190 Port St. Joe, FL 32456-0190	P 274 010 457 Type of Service: [ ] Registered [ ] Insured [X] Certified [ ] COD [ ] Express Mail Always obtain signature of addressee or agent and DATE DELIVERED.
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P 274 010 457

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PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

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STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

January 22, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. E. Nedley, Vice President
St. Joe Forest Products
P. O. Box 190
Port St. Joe, Florida 32456-0190

Dear Mr. Nedley:

Re: Pre and Post Test to Establish SO_2 Control Efficiencies

It has become apparent in the review of the various permit applications received regarding the TRS NCG systems that the selected combustion devices and their associated control efficiencies for sulfur dioxide (SO_2) are not established. Therefore, a pre and post test will be required to establish the SO_2 removal efficiency of each combustion device (e.g. lime kiln), which is currently operating and in which TRS emissions are proposed to be incinerated.

It is advised that you perform the pre-test at your next earliest convenience (e.g. annual compliance test). Please submit the test data to the Department's Bureau of Air Quality Management to review and to document the results for the file.

If you have any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/PR/s

cc: S. Smallwood
J. Brown
B. Thomas
B. Pittman
M. Zilberberg
E. Middleswart

P 274 010 469

RECEIPT FOR CERTIFIED MAIL

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(See Reverse)

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P.O., State and ZIP Code Port St. Joe, FL 32456-0190	
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TOTAL Postage and Fees	$
Postmark or Date Mailed: 01/20/88 Permits: AC 23-131963,-141981 -141982,-141983,-141984,- -141986,-136376,-77,-78,-139186/87	

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

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3. Article Addressed to: Mr. R. E. Nedley
Vice President
St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, FL 32456-0190

4. Article Number
P 274 010 469

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X Eris McRae

6. Signature — Agent
X

7. Date of Delivery
1-21-88

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STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

DEPARTMENT OF ENVIRONMENTAL REGULATION
STATE OF FLORIDA

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

January 20, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert E. Nedley
Vice President
St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, Florida 32456-0190

Dear Mr. Nedley:

Re: Permit Applications: AC 23-131963, -141981, -141982, -141983, -141984, -141986, -136376, -136377, -136378, -139086, -139087

We have received Mr. Terry Cole's letters of December 22, 1987 and January 7, 1988 on-behalf of St. Joe Forest Products Company (SJFPC). On the basis of this information, that provided in the KBN report, and the attached memo to Secretary Twachtmann, we will proceed to process your application for a construction permit for the No. 6 recovery boiler.

We cannot proceed with a detailed review of the applications until we have received the other information requested in our letters of December 11, 1987, for your other applications. These applications are AC 23-141981, -141982, -141983, -141984, -141986, -136376, -136377, -136378, -139086, -139087. We presently plan to proceed to process each of these applications upon receipt of the remaining information requested on December 11, 1987. Presently, the Department does not plan to use the completeness status of the KBN modeling report, within certain obvious restraints, as the sole basis for holding your applications incomplete. This should accommodate some of your concerns about potential delays in meeting the applicable compliance schedules. Recognizing the need for both expeditious processing and valid permits, I would suggest only with your concurrence, that responses to the December 11, 1987 letters be submitted somewhat in order of your permit priority.

In order to expedite the processing of AC 23-131963 for the No. 6 recovery boiler, we have accepted your responses of December 22, 1987, and January 7, 1988, as submitted. But, all future responses are to be signed either by someone for whom the company has submitted a letter of authorization, the company official signing the applications, or the engineer of record. The Department must have reasonable assurance that the person signing the response has the authority to commit the company to the data and information submitted. In order to comply with Chapter 471, F.S., technical information should be signed and sealed by a professional engineer registered in Florida.

The Department will condition any permit issued for the No. 6 recovery boiler to require submission of any data it considers critical to the issuance of the permit--pursuant to our discussions with Mr. Cole. You, of course, will be expected to resolve any future concerns that the U.S. EPA, or others may have about the permitting of the No. 6 recovery boiler with those agencies/ parties.

With regard to the responses of December 22, 1987, and January 7, 1988, we wish to inform you of the following:

1. The Department has no record of receiving Rust Engineering's calculations showing that 90.48 ft/sec is the correct velocity for an 8 ft. diameter stack with 153,491 ACFM of flow. Mr. Cole's letter said these were provided the week of December 14, 1987. For the purpose of maintaining clear records--is he referring to information that was supplied to you?

2. The Department has no record of receiving additional information on reconstruction costs. Mr. Cole's letter said this was provided the week of December 14, 1987. For the purpose of maintaining clear records--is he referring to information that was supplied to you?

3. The Department has no record of receiving the construction permit application AC 23-131968 for SJFPC that was referenced in Mr. Cole's letter of January 7, 1988. In order to be certain our records are accurate--is this a typographical error?

4. We have a number of preliminary questions and concerns about the information, data, and modeling included in the KBN report. We would like to meet with and discuss these with your consultant at KBN. A technical meeting between the BAQM engineering/meteorological staff and the KBN engineer within the next 3-4 weeks could be very productive. If you will permit us to work directly with your consultant at KBN, it

could reduce the time needed for you to provide the required clarifications, additional data, and additional analyses. Your written approval would be appreciated.

We are pleased to continue working toward the issuance of construction permits that will result in compliance with the applicable standards. If you have any questions please call Bill Thomas at (904)488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/MH/s

cc: H. Rhodes
S. Smallwood
E. Middleswart
V. Hutcheson, P.E.
D. Buff, P.E.
L. Taylor
T. Cole

ATTACHMENT

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee	
To:	Location:
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To:	Location:
From:	Date:

TO: Dale Twachtmann

THRU: Howard Rhodes

THRU: Steve Smallwood

FROM: Clair Fancy

DATE: December 22, 1987

SUBJ: Air Program: St. Joe Forest Products Company No. 6 Recovery Boiler - Construction Permit Application No. AC 23-131963

On December 11, 1987, the company received their third incompleteness letter on this construction permit application. Many of these questions had been previously asked and never satisfactorily answered. They need this permit before they can begin their plans to bring the paper mill into compliance with the TRS rule. They still need to submit some emissions inventory information, cost information, and a modeling study to the Department.

We do not want to delay the issuance of the requested construction permit, but we can't in good conscience recommend issuance until the basic information required by rule is submitted. I believe it will be possible for CAPs to recommend issuance of the requested permit as soon as the company answers the remaining questions asked in the last incompleteness letter. I was told by a company representative on Friday, December 18, that responses to several of the items will be submitted the week of December 20. If this response addresses the remaining unanswered questions CAPs could issue a preliminary determination by early February.

The three remaining basic items that need to be addressed by the company and the Department are as follows:

1. There is a question on all TRS applications whether the conversion of TRS to sulfur dioxide will cause a violation of the PSD sulfur dioxide increments or the sulfur dioxide ambient air quality standard. All firms, including St. Joe Forest Products, are required to submit this modeling. St. Joe is aware of this, and have indicated it will be submitted shortly.

2. If a company has modified a source through changes in equipment or the method of operation, and these changes have resulted in increased actual emissions, then the modified source is subject to federal New Source Performance Standards. Many of the questions in the latest incompleteness letter address this point. If NSPS applies to this source, the allowable TRS emissions would be about one-third that allowed by the TRS rule for existing sources, and a particulate limit approximately one-half of what they are currently allowed. Although there is some doubt as to whether or not emissions have increased and major changes have been made, research of the DER files does not clearly show that such changes have occurred. We do not feel that enough information exists for us to prove that NSPS applies, and consequently, I plan to propose that the permit be issued with the limits prescribed in the Department's TRS rule for existing sources.

3. EPA rules have a reconstruction provision which states that if it costs in excess of 50% of the cost of a new unit to rehabilitate an old unit, federal New Source Performance Standards (NSPS) applies. The firm indicated that, even though they are sure the cost is less than 30%, it would take them several weeks to put together the necessary information to show this beyond a reasonable doubt. I plan to propose a permit condition giving them about 4 months to provide the Department with this information based upon their assertion that the reconstruction provision does not apply. Their consultant said on Friday that he felt this was a reasonable solution.

If the company answers the few basic questions that we have asked, and we proceed along the lines outlined in this memo, the Department will be able to issue a construction permit for the #6 recovery boiler very soon. To do otherwise and continue to pursue precise answers to these questions will continue to delay the project. The approach I am proposing to follow will place the burden on St. Joe rather than on the Department to insure that the basic questions are answered. If the company is acting in good faith, they have nothing to worry about, as the reconstruction issue will not apply and their allegations that NSPS does not apply can be proven, if the EPA decides to do an audit. The EPA may elect to do an audit on the recovery boiler with regards to the NSPS issue. If the EPA audit were to find that the information St. Joe has given us is incorrect, EPA will require the company to meet NSPS. The company is well aware of this.

Therefore, with your concurrence, I propose to issue a public notice and Preliminary Determination to issue the requested construction permit for the #6 recovery boiler to the St. Joe Forest Products Company without the benefit of all of the detailed information that the company might be able to provide if timing were not critical.

CHF/ks

Received from KBN Engineering
P.A. Buff, P.E.

PM
12 Jan 1987
Gainesville FL

File Copy

DER
JAN 14 1988
BAQM

10.1 CHEMICAL WOOD PULPING

10.1.1 General

Chemical wood pulping involves the extraction of cellulose from wood by dissolving the lignin that binds the cellulose fibers together. The four processes principally used in chemical pulping are kraft, sulfite, neutral sulfite semichemical (NSSC), and soda. The first three display the greatest potential for causing air pollution. The kraft process alone accounts for over 80 percent of the chemical pulp produced in the United States. The choice of pulping process is determined by the desired product, by the wood species available, and by economic considerations.

10.1.2 Kraft Pulping

Process Description[1] - The kraft pulping process (See Figure 10.1-1) involves the digesting of wood chips at elevated temperature and pressure in "white liquor", which is a water solution of sodium sulfide and sodium hydroxide. The white liquor chemically dissolves the lignin that binds the cellulose fibers together.

There are two types of digester systems, batch and continuous. Most kraft pulping is done in batch digesters, although the more recent installations are of continuous digesters. In a batch digester, when cooking is complete, the contents of the digester are transferred to an atmospheric tank usually referred to as a blow tank. The entire contents of the blow tank are sent to pulp washers, where the spent cooking liquor is separated from the pulp. The pulp then proceeds through various stages of washing, and possibly bleaching, after which it is pressed and dried into the finished product. The "blow" of the digester does not apply to continuous digester systems.

The balance of the kraft process is designed to recover the cooking chemicals and heat. Spent cooking liquor and the pulp wash water are combined to form a weak black liquor which is concentrated in a multiple effect evaporator system to about 55 percent solids. The black liquor is then further concentrated to 65 percent solids in a direct contact evaporator, by bringing the liquor into contact with the flue gases from the recovery furnace, or in an indirect contact concentrator. The strong black liquor is then fired in a recovery furnace. Combustion of the organics dissolved in the black liquor provides heat for generating process steam and for converting sodium sulfate to sodium sulfide. Inorganic chemicals present in the black liquor collect as a molten smelt at the bottom of the furnace.

The smelt is dissolved in water to form green liquor, which is transferred to a causticizing tank where quicklime (calcium oxide) is added to convert the solution back to white liquor for return to the digester system. A lime mud precipitates from the causticizing tank, after which it is calcined in a lime kiln to regenerate quicklime.

Copied: Mike Harley
Bruce Mitchell
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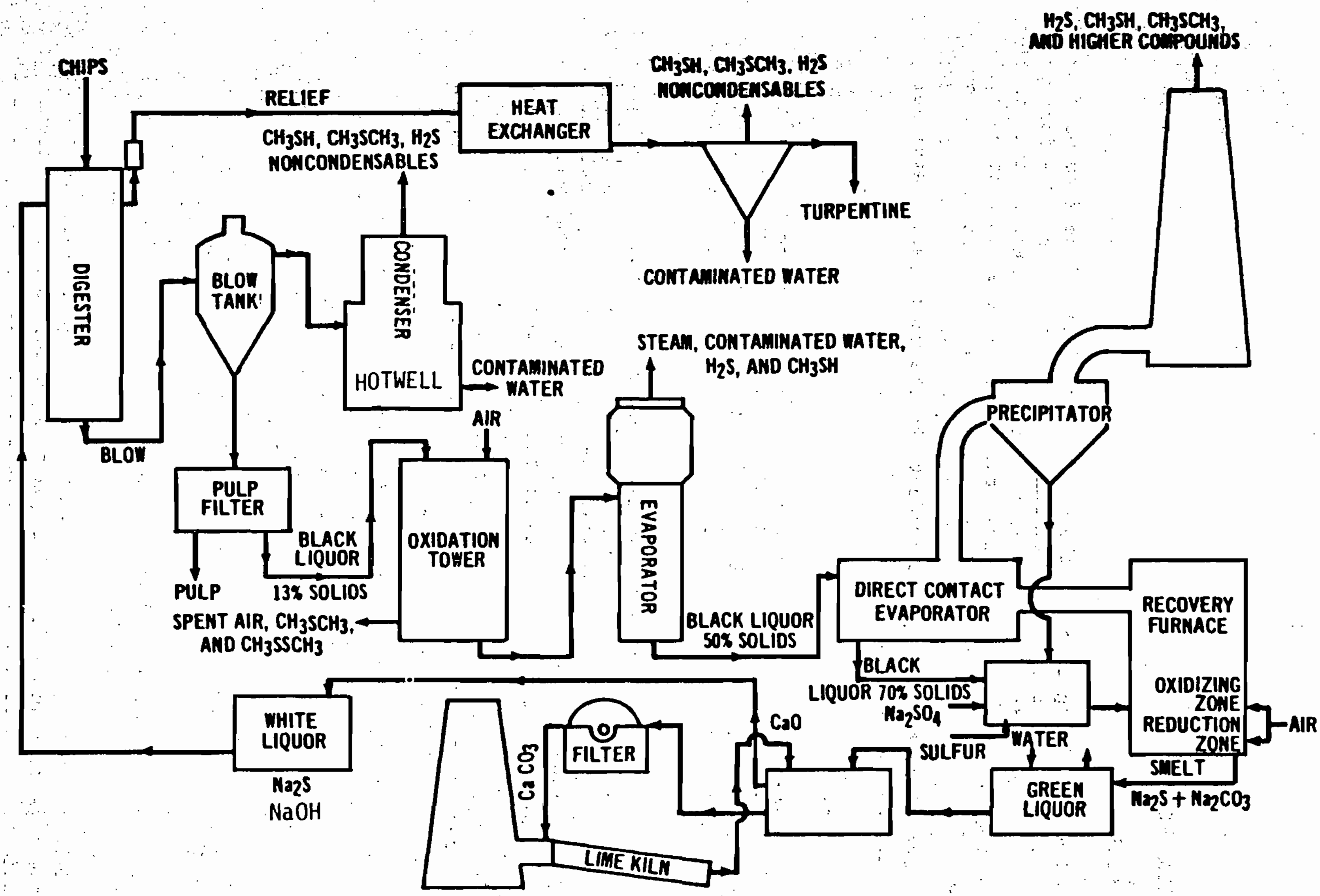

Figure 10.1-1. Typical kraft sulfate pulping and recovery process.

For process heating, for driving equipment, for providing electric power, etc., many mills need more steam than can be provided by the recovery furnace alone. Thus, conventional industrial boilers that burn coal, oil, natural gas, or bark and wood are commonly used.

Emissions And Controls[1-7] - Particulate emissions from the kraft process occur largely from the recovery furnace, the lime kiln and the smelt dissolving tank. These emissions are mainly sodium salts, with some calcium salts from the lime kiln. They are caused mostly by carryover of solids and sublimation and condensation of the inorganic chemicals.

Particulate control is provided on recovery furnaces in a variety of ways. In mills with either a cyclonic scrubber or cascade evaporator as the direct contact evaporator, further control is necessary, as these devices are generally only 20 to 50 percent efficient for particulates. Most often in these cases, an electrostatic precipitator is employed after the direct contact evaporator, for an overall particulate control efficiency of from 85 to more than 99 percent. Auxiliary scrubbers may be added at existing mills after a precipitator or a venturi scrubber to supplement older and less efficient primary particulate control devices.

Particulate control on lime kilns is generally accomplished by scrubbers. Electrostatic precipitators have been used in a few mills. Smelt dissolving tanks usually are controlled by mesh pads, but scrubbers can provide further control.

The characteristic odor of the kraft mill is caused by the emission of reduced sulfur compounds, the most common of which are hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide, all with extremely low odor thresholds. The major source of hydrogen sulfide is the direct contact evaporator, in which the sodium sulfide in the black liquor reacts with the carbon dioxide in the furnace exhaust. Indirect contact evaporators can significantly reduce the emission of hydrogen sulfide. The lime kiln can also be a potential source of odor, as a similar reaction occurs with residual sodium sulfide in the lime mud. Lesser amounts of hydrogen sulfide are emitted with the noncondensible offgasses from the digesters and multiple effect evaporators.

Methyl mercaptan and dimethyl sulfide are formed in reactions with the wood component, lignin. Dimethyl disulfide is formed through the oxidation of mercaptan groups derived from the lignin. These compounds are emitted from many points within a mill, but the main sources are the digester/blow tank systems and the direct contact evaporator.

Although odor control devices, per se, are not generally found in kraft mills, emitted sulfur compounds can be reduced by process modifications and improved operating conditions. For example, black liquor oxidation systems, which oxidize sulfides into less reactive thiosulfates, can considerably reduce odorous sulfur emissions from the direct contact evaporator, although the vent gases from such systems become minor odor sources themselves. Also, noncondensible odorous gases vented from the digester/blow tank system and multiple effect evaporators can be destroyed by thermal oxidation, usually by passing them through the lime kiln. Efficient operation of the recovery furnace, by avoiding overloading and by maintaining sufficient oxygen, residence time and turbulence, significantly reduces emissions of reduced sulfur compounds from this source as well. The use of fresh water instead of contaminated condensates in the scrubbers and pulp washers further reduces odorous emissions.

Several new mills have incorporated recovery systems that eliminate the conventional direct contact evaporators. In one system, heated combustion air, rather than fuel gas, provides direct contact evaporation. In another, the multiple effect evaporator system is extended to replace the direct contact evaporator altogether. In both systems, sulfur emissions from the recovery furnace/direct contact evaporator can be reduced by more than 99 percent.

Sulfur dioxide is emitted mainly from oxidation of reduced sulfur compounds in the recovery furnace. It is reported that the direct contact evaporator absorbs about 75 percent of these emissions, and further scrubbing can provide additional control.

Potential sources of carbon monoxide emissions from the kraft process include the recovery furnace and lime kilns. The major cause of carbon monoxide emissions is furnace operation well above rated capacity, making it impossible to maintain oxidizing conditions.

Some nitrogen oxides also are emitted from the recovery furnace and lime kilns, although amounts are relatively small. Indications are that nitrogen oxide emissions are on the order of 0.5 and 1.0 kilograms per air dried megagrams (1 and 2 lb/air dried ton) of pulp produced from the lime kiln and recovery furnace, respectively.[5-6]

A major source of emissions in a kraft mill is the boiler for generating auxiliary steam and power. The fuels used are coal, oil, natural gas or bark/wood waste. See Chapter 1 for emission factors for boilers.

Table 10.1-1 presents emission factors for a conventional kraft mill. The most widely used particulate control devices are shown, along with the odor reductions through black liquor oxidation and incineration of noncondensible offgases. Tables 10.1-2 through 10.1-7 present cumulative size distribution data and size specific emission factors for particulate emissions from sources within a conventional kraft mill. Uncontrolled and controlled size specific emission factors[7] are presented in Figures 10.1-2 through 10.1-7. The particle sizes presented are expressed in terms of the aerodynamic diameter.

10.1.3 Acid Sulfite Pulping

Process Description - The production of acid sulfite pulp proceeds similarly to kraft pulping, except that different chemicals are used in the cooking liquor. In place of the caustic solution used to dissolve the lignin in the wood, sulfurous acid is employed. To buffer the cooking solution, a bisulfite of sodium, magnesium, calcium or ammonium is used. A diagram of a typical magnesium base process is shown in Figure 10.1-8.

Digestion is carried out under high pressure and high temperature, in either batch mode or continuous digesters, and in the presence of a sulfurous acid/bisulfite cooking liquid. When cooking is completed, either the digester is discharged at high pressure into a blow pit, or its contents are pumped into a dump tank at a lower pressure. The spent sulfite liquor (also called red liquor) then drains through the bottom of the tank and is treated and discarded,

TABLE 10.1-1. EMISSION FACTORS FOR SULFITE PULPING[a]

EMISSION FACTOR RATING: A

Source	Type of control	Particulate kg/Mg	Particulate lb/ton	Sulfur dioxide (SO_2) kg/Mg	Sulfur dioxide (SO_2) lb/ton	Carbon monoxide (CO) kg/Mg	Carbon monoxide (CO) lb/ton	Hydrogen sulfide ($S^=$) kg/Mg	Hydrogen sulfide ($S^=$) lb/ton	RSH, RSR, RSSR ($S^=$) kg/Mg	RSH, RSR, RSSR ($S^=$) lb/ton
Digester relief and blow tank	Untreated[b]	-	-	-	-	-	-	0.02	0.03	0.6	1.2
Brown stock washer	Untreated[b]	-	-	-	-	-	-	0.01	0.02	0.2[c]	0.4[c]
Multiple effect evaporator	Untreated[b]	-	-	-	-	-	-	0.55	1.1	0.05	0.1
Recovery boiler and direct evaporator	Untreated[d]	90	180	3.5	7	5.5	11	6[e]	12[e]	1.5[e]	3[e]
	Venturi scrubber[f]	24	48	3.5	7	5.5	11	6[e]	12[e]	1.5[e]	3[e]
	ESP	1	2	3.5	7	5.5	11	6[e]	12[e]	1.5[e]	3[e]
	Auxiliary scrubber	1.5-7.5[g]	3-15[g]					6[e]	12[e]	1.5[e]	3[e]
Noncontact recovery boiler without direct contact evaporator	Untreated	115	230	-	-	5.5	11	0.05[h]	0.1[h]	-	-
	ESP	1	2	-	-	5.5	11	0.05[h]	0.1[h]	-	-
Smelt dissolving tank	Untreated	3.5	7	0.1	0.2	-	-	0.1[j]	0.2[j]	0.15[j]	0.3[j]
	Mesh pad	0.5	1	0.1	0.2	-	-	0.1[j]	0.2[j]	0.15[j]	0.3[j]
	Scrubber	0.1	0.2	-	-	-	-	0.1[j]	0.2[j]	0.15[j]	0.3[j]
Lime kiln	Untreated	28	56	0.15	0.3	0.05	0.1	0.25[m]	0.5[m]	0.1[m]	0.2[m]
	Scrubber or ESP	0.25	0.5	-	-	0.05	0.1	0.25[m]	0.5[m]	0.1[m]	0.2[m]
Turpentine condenser	Untreated	-	-	-	-	-	-	0.005	.01	0.25	0.5
Miscellaneous[n]	Untreated	-	-	-	-	-	-	-	-	0.25	0.5

[a]References 8-10. Factors expressed in unit weight of air dried unbleached pulp (ADP). RSH = Methyl mercaptan. RSR = Dimethyl sulfide. RSSR = Dimethyl disulfide. ESP = Electrostatic precipitator. Dash = No data.
[b]If noncondensible gases from these sources are vented to lime kiln, recovery furnace or equivalent, the reduced sulfur compounds are destroyed.
[c]Apply with system using condensate as washing medium. When using fresh water, emissions are 0.05 (0.1).
[d]Apply when cyclonic scrubber or cascade evaporator is used for direct contact evaporation, with no further controls.
[e]Usually reduced by 50% with black liquor oxidation and can be cut 95 - 99% when oxidation is complete and recovery furnace is operated optimally.
[f]Apply when venturi scrubber is used for direct contact evaporation, with no further controls.
[g]Use 7.5 (15) when auxiliary scrubber follows venturi scrubber, and 1.5 (3) when it follows ESP.
[h]Apply when recovery furnace is operated optimally to control total reduced sulfur (TRS) compounds.
[j]Usually reduced to 0.01 g/kg (0.02 lb/ton) ADP when water low in sulfides is used in smelt dissolving tank and associated scrubber.
[m]Usually reduced to 0.015 g/kg (0.03 lb/ton) ADP with efficient mud washing, optimal kiln operation and added caustic in scrubbing water. With only efficient mud washing and optimal process control, TRS compounds reduced to 0.04 g/kg (0.08 lb/ton) ADP.
[n]Includes knotter vents, brownstock seal tanks, etc. When black liquor oxidation is included, emissions are 0.3 (0.6).

TABLE 10.1-2. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A RECOVERY BOILER WITH A DIRECT CONTACT EVAPORATOR AND AN ESP[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	95.0	-	86	-
10	93.5	-	84	-
6	92.2	68.2	83	0.7
2.5	83.5	53.8	75	0.5
1.25	56.5	40.5	51	0.4
1.00	45.3	34.2	41	0.3
0.625	26.5	22.2	24	0.2
Total	100	100	90	1.0

[a]Reference 7. Dash = no data.

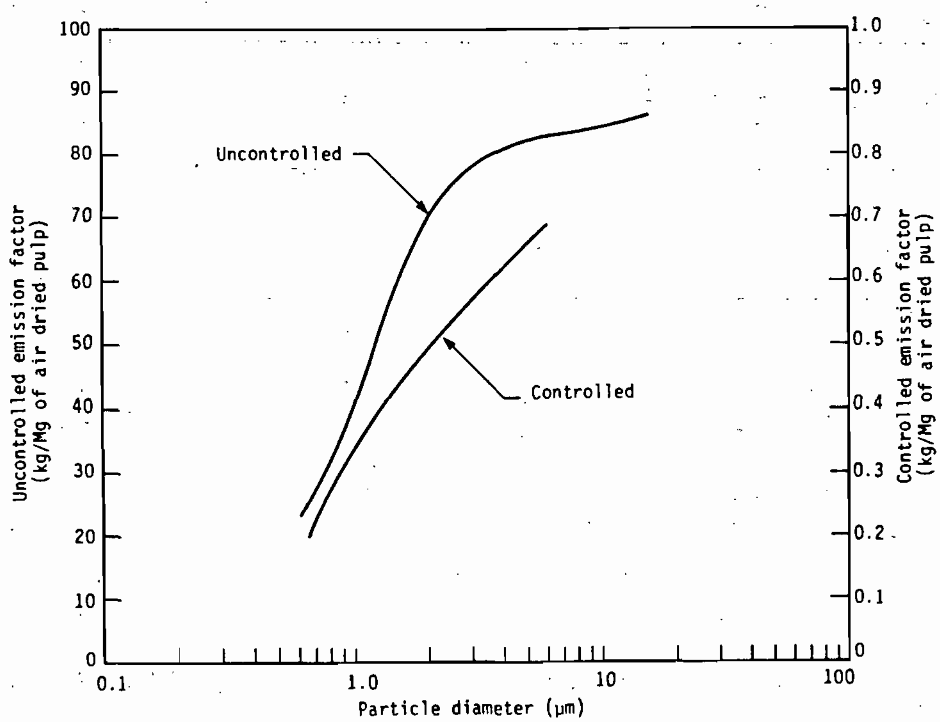

Figure 10.1-2. Cumulative particle size distribution and size specific emission factors for recovery boiler with direct contact evaporator and ESP.

TABLE 10.1-3. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A RECOVERY BOILER WITHOUT A DIRECT CONTACT EVAPORATOR BUT WITH AN ESP[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	-	78.8	-	0.8
10	-	74.8	-	0.7
6	-	71.9	-	0.7
2.5	78.0	67.3	90	0.6
1.25	40.0	51.3	46	0.5
1.00	30.0	42.4	35	0.4
0.625	17.0	29.6	20	0.3
Total	100	100	115	1.0

[a]Reference 7. Dash = no data.

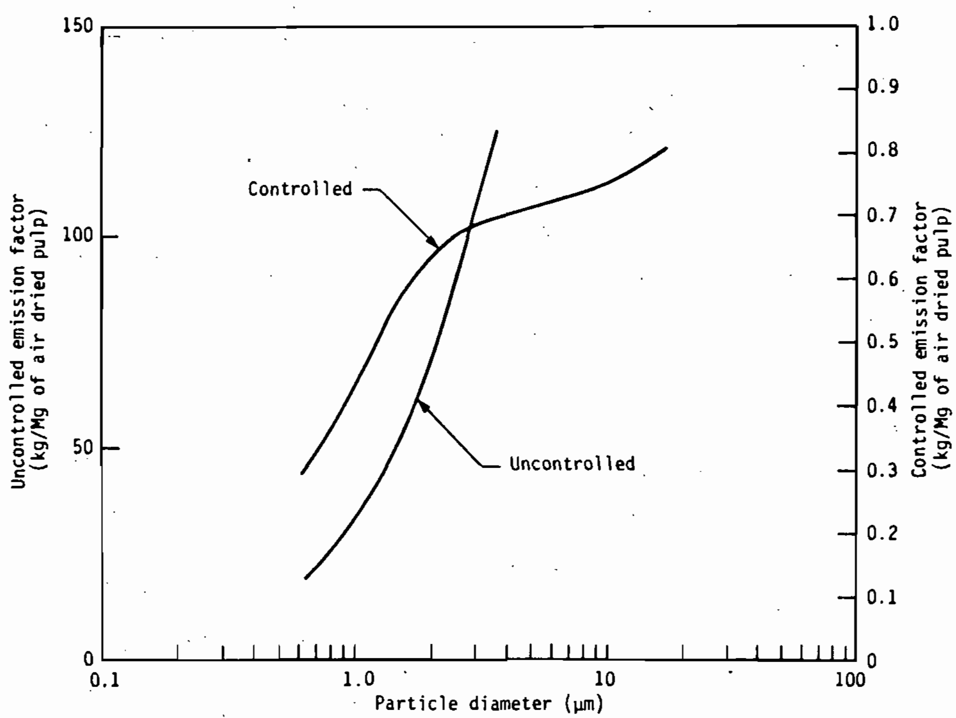

Figure 10.1-3. Cumulative particle size distribution and size specific emission factors for recovery boiler without direct contact evaporator but with ESP.

TABLE 10.1-4. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A LIME KILN WITH A VENTURI SCRUBBER[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	27.7	98.9	7.8	0.24
10	16.8	98.3	4.7	0.24
6	13.4	98.2	3.8	0.24
2.5	10.5	96.0	2.9	0.24
1.25	8.2	85.0	2.3	0.21
1.00	7.1	78.9	2.0	0.20
0.625	3.9	54.3	1.1	0.14
Total	100	100	28.0	0.25

[a]Reference 7.

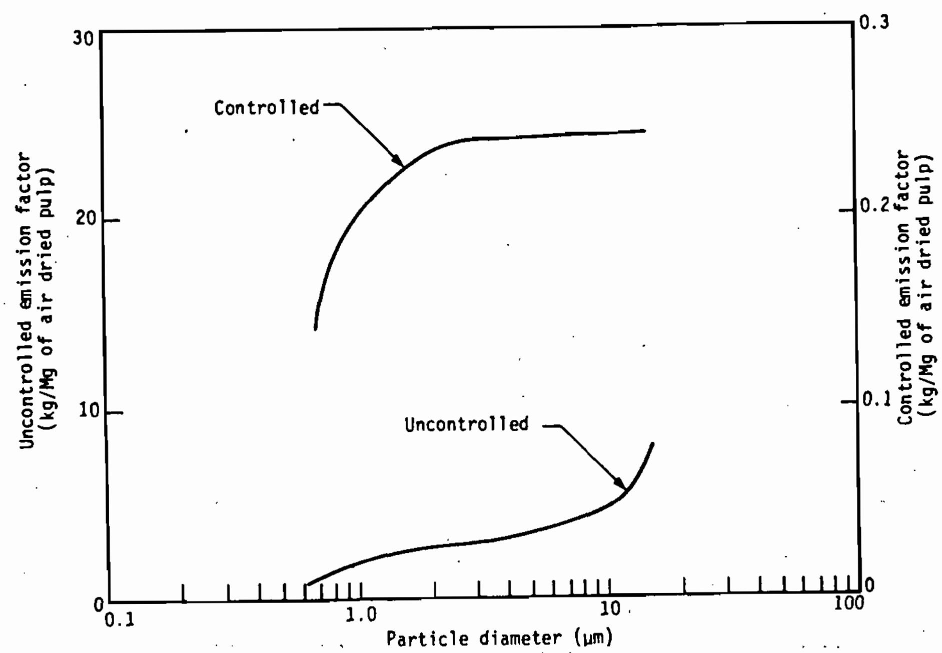

Figure 10.1-4. Cumulative particle size distribution and size specific emission factors for lime kiln with venturi scrubber.

TABLE 10.1-5. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A LIME KILN WITH AN ESP[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	27.7	91.2	7.8	0.23
10	16.8	88.5	4.7	0.22
6	13.4	86.5	3.8	0.22
2.5	10.5	83.0	2.9	0.21
1.25	8.2	70.2	2.3	0.18
1.00	7.1	62.9	2.0	0.16
0.625	3.9	46.9	1.1	0.12
Total	100	100	28.0	0.25

[a]Reference 7.

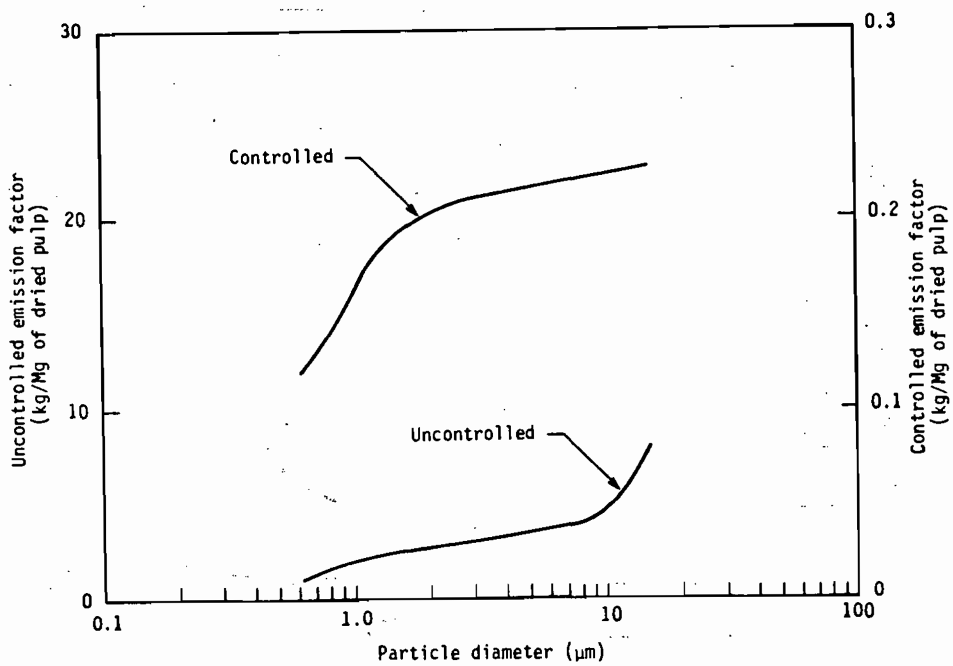

Figure 10.1-5. Cumulative particle size distribution and size specific emission factors for lime kiln with ESP.

TABLE 10.1-6. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A SMELT DISSOLVING TANK WITH A PACKED TOWER[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	90.0	95.3	3.2	0.48
10	88.5	95.3	3.1	0.48
6	87.0	94.3	3.0	0.47
2.5	73.0	85.2	2.6	0.43
1.25	47.5	63.8	1.7	0.32
1.00	40.0	54.2	1.4	0.27
0.625	25.5	34.2	0.9	0.17
Total	100	100	3.5	0.50

[a]Reference 7.

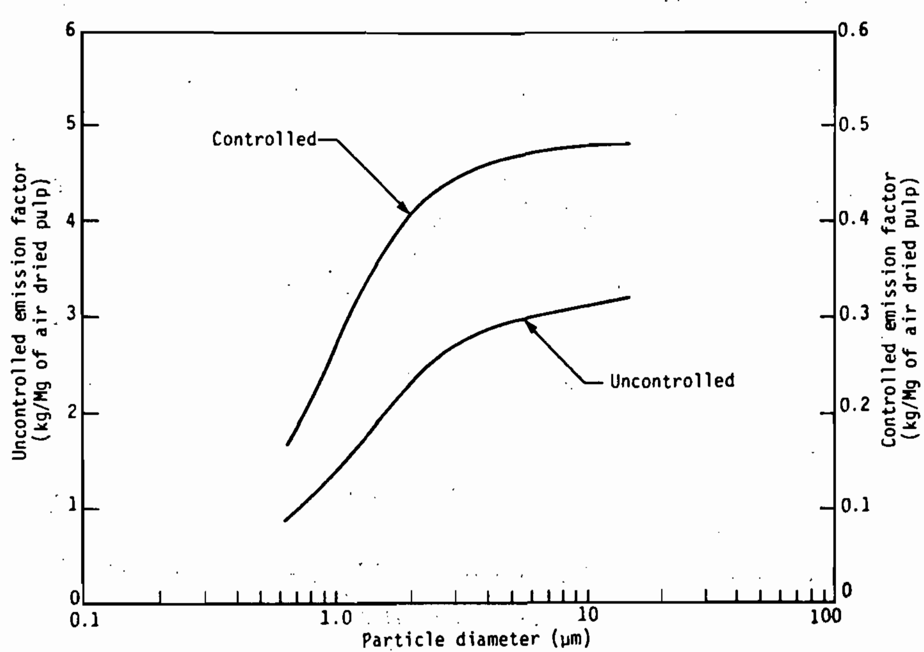

Figure 10.1-6. Cumulative particle size distribution and size specific emission factors for smelt dissolving tank with packed tower.

TABLE 10.1-7. CUMULATIVE PARTICLE SIZE DISTRIBUTION AND SIZE SPECIFIC EMISSION FACTORS FOR A SMELT DISSOLVING TANK WITH A VENTURI SCRUBBER[a]

EMISSION FACTOR RATING: C

Particle size (um)	Cumulative mass % ≤ stated size		Cumulative emission factor (kg/Mg of air dried pulp)	
	Uncontrolled	Controlled	Uncontrolled	Controlled
15	90.0	89.9	3.2	0.09
10	88.5	89.5	3.1	0.09
6	87.0	88.4	3.0	0.09
2.5	73.0	81.3	2.6	0.08
1.25	47.5	63.5	1.7	0.06
1.00	54.0	54.7	1.4	0.06
0.625	25.5	38.7	0.9	0.04
Total	100	100	3.5	0.09

[a]Reference 7.

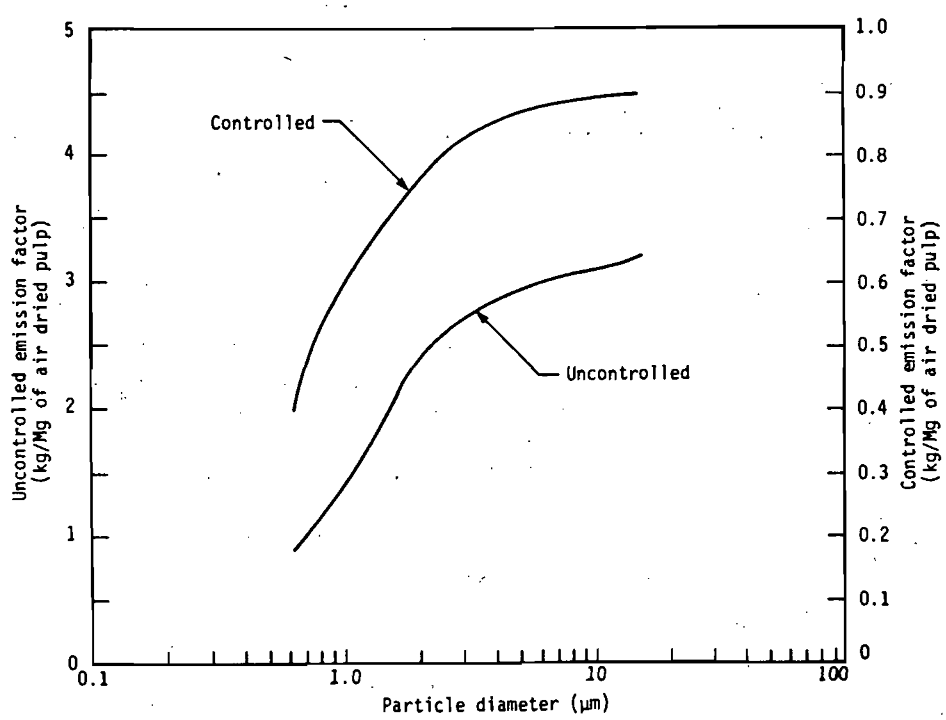

Figure 10.1-7. Cumulative particle size distribution and size specific emission factors for smelt dissolving tank with venturi scrubber.

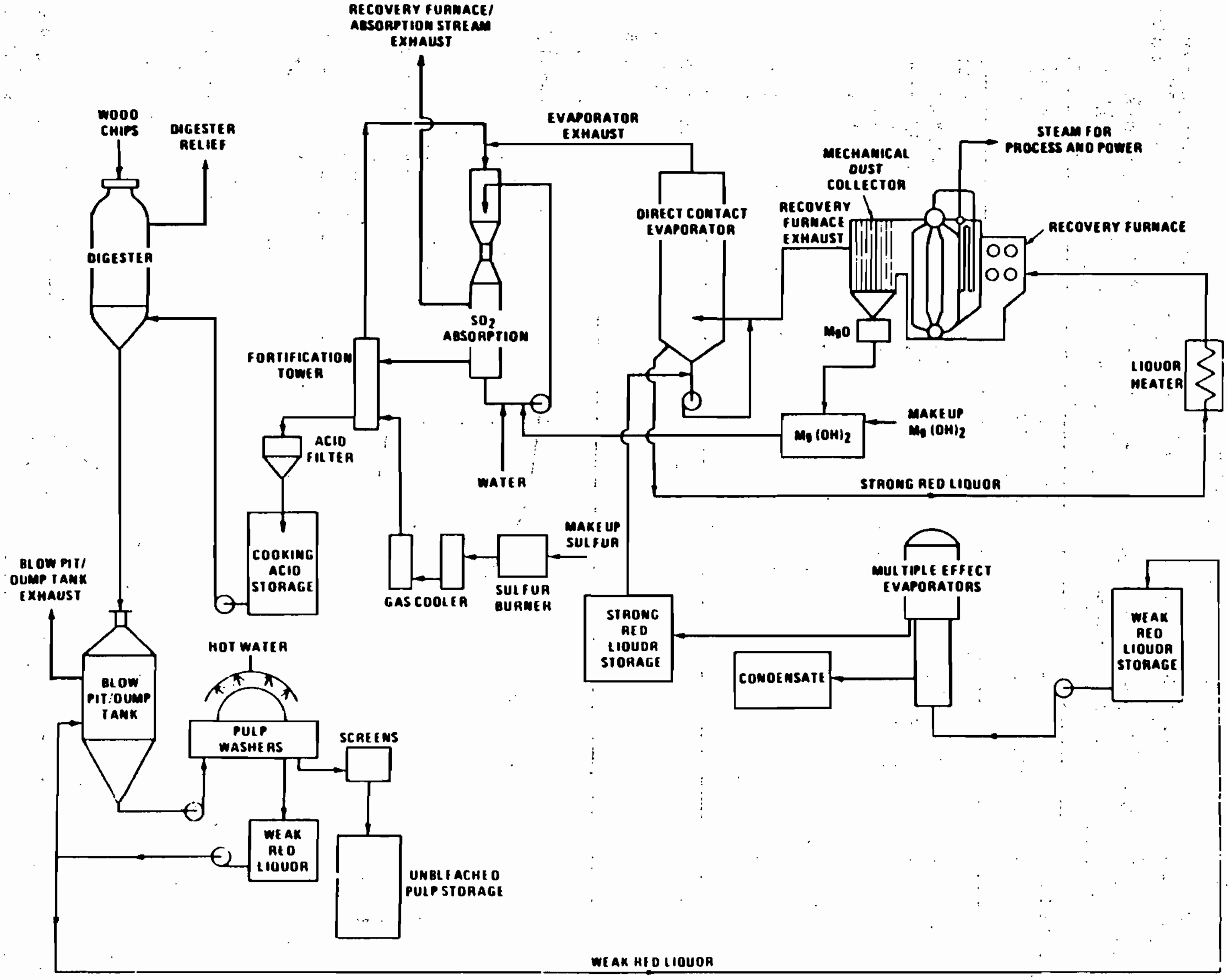

Figure 10.1-8. Simplified process flow diagram of magnesium-base process employing chemical and heat recovery.

incinerated, or sent to a plant for recovery of heat and chemicals. The pulp is then washed and processed through screens and centrifuges to remove knots, bundles of fibers and other material. It subsequently may be bleached, pressed and dried in papermaking operations.

Because of the variety of cooking liquor bases used, numerous schemes have evolved for heat and/or chemical recovery. In calcium base systems, found mostly in older mills, chemical recovery is not practical, and the spent liquor is usually discharged or incinerated. In ammonium base operations, heat can be recovered by combusting the spent liquor, but the ammonium base is thereby consumed. In sodium or magnesium base operations, the heat, sulfur and base all may be feasibly recovered.

If recovery is practiced, the spent (weak) red liquor (which contains more than half of the raw materials as dissolved organic solids) is concentrated in a multiple effect evaporator and a direct contact evaporator to 55 to 60 percent solids. This strong liquor is sprayed into a furnace and burned, producing steam to operate the digesters, evaporators, etc. and to meet other power requirements.

When magnesium base liquor is burned, a flue gas is produced from which magnesium oxide is recovered in a multiple cyclone as fine white power. The magnesium oxide is then water slaked and is used as circulating liquor in a series of venturi scrubbers, which are designed to absorb sulfur dioxide from the flue gas and to form a bisulfite solution for use in the cook cycle. When sodium base liquor is burned, the inorganic compounds are recovered as a molten smelt containing sodium sulfide and sodium carbonate. This smelt may be processed further and used to absorb sulfur dioxide from the flue gas and sulfur burner. In some sodium base mills, however, the smelt may be sold to a nearby kraft mill as raw material for producing green liquor.

If liquor recovery is not practiced, an acid plant is necessary of sufficient capacity to fulfill the mill's total sulfite requirement. Normally, sulfur is burned in a rotary or spray burner. The gas produced is then cooled by heat exhangers and a water spray and is then absorbed in a variety of different scrubbers containing either limestone or a solution of the base chemical. Where recovery is practiced, fortification is accomplished similarly, although a much smaller amount of sulfur dioxide must be produced to make up for that lost in the process.

Emissions And Controls[11] - Sulfur dioxide is generally considered the major pollutant of concern from sulfite pulp mills. The characteristic "kraft" odor is not emitted because volatile reduced sulfur compounds are not products of the lignin/bisulfite reaction.

A major SO_2 source is the digester and blow pit (dump tank) system. Sulfur dioxide is present in the intermittent digester relief gases, as well as in the gases given off at the end of the cook when the digester contents are discharged into the blow pit. The quantity of sulfur dioxide evolved and emitted to the atmosphere in these gas streams depends on the pH of the cooking liquor, the pressure at which the digester contents are discharged, and the effectiveness of the absorption systems employed for SO_2 recovery. Scrubbers can be installed that reduce SO_2 from this source by as much as 99 percent.

Another source of sulfur dioxide emissions is the recovery system. Since magnesium, sodium, and ammonium base recovery systems all use absorption systems to recover SO_2 generated in recovery furnaces, acid fortification towers, multiple effect evaporators, etc., the magnitude of SO_2 emissions depends on the desired efficiency of these systems. Generally, such absorption systems recover better than 95 percent of the sulfur so it can be reused.

The various pulp washing, screening, and cleaning operations are also potential sources of SO_2. These operations are numerous and may account for a significant fraction of a mill's SO_2 emissions if not controlled.

The only significant particulate source in the pulping and recovery process is the absorption system handling the recovery furnace exhaust. Ammonium base systems generate less particulate than do magnesium or sodium base systems. The combustion productions are mostly nitrogen, water vapor and sulfur dioxide.

Auxiliary power boilers also produce emissions in the sulfite pulp mill, and emission factors for these boilers are presented in Chapter 1.

Table 10.1-8 contains emission factors for the various sulfite pulping operations.

10.1.4 Neutral Sulfite Semichemical (NSSC) Pulping

Process Description[9, 12-14] - In this method, wood chips are cooked in a neutral solution of sodium sulfite and sodium carbonate. Sulfite ions react with the lignin in wood, and the sodium bicarbonate acts as a buffer to maintain a neutral solution. The major difference between all semichemical techniques and those of kraft and acid sulfite processes is that only a portion of the lignin is removed during the cook, after which the pulp is further reduced by mechanical disintegration. This method achieves yields as high as 60 to 80 percent, as opposed to 50 to 55 percent for other chemical processes.

The NSSC process varies from mill to mill. Some mills dispose of their spent liquor, some mills recover the cooking chemicals, and some, when operated in conjunction with kraft mills, mix their spent liquor with the kraft liquor as a source of makeup chemcials. When recovery is practiced, the involved steps parallel those of the sulfite process.

Emissions And Controls[9,12-14] - Particulate emissions are a potential problem only when recovery systems are involved. Mills that do practice recovery but are not operated in conjunction with kraft operations often utilize fluidized bed reactors to burn their spent liquor. Because the flue gas contains sodium sulfate and sodium carbonate dust, efficient particulate collection may be included for chemical recovery.

A potential gaseous pollutant is sulfur dioxide. Absorbing towers, digester/blower tank system, and recovery furnace are the main sources of SO_2, with amounts emitted dependent upon the capability of the scrubbing devices installed for control and recovery.

Hydrogen sulfide can also be emitted from NSSC mills which use kraft type recovery furnaces. The main potential source is the absorbing tower, where a

TABLE 10.1-8. EMISSION FACTORS FOR SULFITE PULPING[a]

Source	Base	Control	Emission factor[b]				Emission Factor Rating
			Particulate		Sulfur dioxide		
			kg/ADUMg	lb/ADUT	kg/ADUMg	lb/ADUT	
Digester/blow pit or dump tank[c]	All	None	Neg	Neg	5 to 35	10 to 70	C
	MgO	Process change[d]	Neg	Neg	1 to 3	2 to 6	C
	MgO	Scrubber	Neg	Neg	0.5	1	B
	MgO	Process change and scrubber	Neg	Neg	0.1	0.2	B
	MgO	All exhaust vented through recovery system	Neg	Neg	0	0	A
	NH_3	Process change	Neg	Neg	12.5	25	D
	NH_3	Process change and scrubber	Neg	Neg	0.2	0.4	B
	Na	Process change and scrubber	Neg	Neg	1	2	C
	Ca	Unknown	Neg	Neg	33.5	67	C
Recovery system[e]	MgO	Multicyclone and venturi scrubbers	1	2	4.5	9	A
	NH_3	Ammonia absorption and mist eliminator	0.35	0.7	3.5	7	B
	Na	Sodium carbonate scrubber	2	4	1	2	C
Acid plant[f]	NH_3	Scrubber	Neg	Neg	0.2	0.3	C
	Na	Unknown[g]	Neg	Neg	0.1	0.2	D
	Ca	Jenssen scrubber	Neg	Neg	4	8	C
Other[h]	All	None	Neg	Neg	6	12	D

[a]Reference 11. All factors represent long term average emissions. ADUMg = Air dried unbleached megagram. ADUT = Air dried unbleached ton. Neg = negligible.
[b]Expressed as kg (lb) of pollutant/air dried unbleached ton (mg) of pulp.
[c]Factors represent emissions after cook is completed and when digester contents are discharged into blow pit or dump tank. Some relief gases are vented from digester during cook cycle, but these are usually transferred to pressure accumulators and SO_2 therein reabsorbed for use in cooking liquor. In some mills, actual emissions will be intermittent and for short periods.
[d]May include such measures as raising cooking liquor pH (thereby lowering free SO_2), relieving digester pressure before contents discharge, and pumping out digester contents instead of blowing out.
[e]Recovery system at most mills is closed and includes recovery furnace, direct contact evaporator, multiple effect evaporator, acid fortification tower, and SO_2 absorption scrubbers. Generally only one emission point for entire system. Factors include high SO_2 emissions during periodic purging of recovery systems.
[f]Necessary in mills with insufficient or nonexistent recovery systems.
[g]Control is practiced, but type of system is unknown.
[h]Includes miscellaneous pulping operations such as knotters, washers, screens, etc.

significant quantity of hydrogen sulfite is liberated as the cooking liquor is made. Other possible sources, depending on the operating conditions, include the recovery furnace, and in mills where some green liquor is used in the cooking process, the digester/blow tank system. Where green liquor is used, it is also possible that significant quantities of mercaptans will be produced. Hydrogen sulfide emissions can be eliminated if burned to sulfur dioxide before the absorbing system.

Because the NSSC process differs greatly from mill to mill, and because of the scarcity of adequate data, no emission factors are presented for this process.

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9. Atmospheric Emissions from the Pulp and Paper Manufacturing Industry, EPA-450/1-73-002, U. S. Environmental Protection Agency, Research Triangle Park, NC, September 1973.

10. Carbon Monoxide Emissions from Selected Combustion Sources Based on Short-Term Monitoring Records, Technical Bulleting Number 416, National Council of the Paper Industry for Air and Stream Improvement, New York, NY, January 1984.

11. Backgound Document: Acid Sulfite Pulping, EPA-450/3-77-005, U. S. Environmental Protection Agency, Research Triangle Park, NC, January 1977.

12. E. R. Hendrickson, et al., Control of Atmospheric Emissions in the Wood Pulping Industry, Volume I, HEW Contract Number CPA-22-69-18, U. S. Environmental Protection Agency, Washington, DC, March 15, 1970.

13. M. Benjamin, et al., "A General Description of Commercial Wood Pulping and Bleaching Processes", Journal of the Air Pollution Control Association, 19 (3):155-161, March 1969.

14. S. F. Galeano and B. M. Dillard, "Process Modifications for Air Pollution Control in Neutral Sulfite Semi-chemical Mills", Journal of the Air Pollution Control Association, 22(3):195-199, March 1972.

PM
1-7-88
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January 7, 1988

Mr. Clair Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Letter of December 31, 1987

Dear Mr. Fancy:

It is requested that the ambient and increment analysis from KBN Engineering which was dated and received December 22, 1987 at the Department of Environmental Regulation, be considered, as previously requested, in all pending applications of St. Joe Forest Products Company. Those applications are:

AC 23-139086✓
AC 23-136376✓
AC 23-136377✓
AC 23-136378✓
AC 23-141981✓
AC 23-141982✓
AC 23-141983✓

AC 23-141984✓
AC 23-139087✓
AC 23-131968 - Not a St Joe Permit
AC 23-141986✓

The only application not listed is AC 23-131963, which you noted in your letter of December 31, 1987 as having already been credited with the ambient and increment analysis. I believe our letter was very clear that the ambient and increment analysis should be considered as having application to all pending permit applications of St. Joe Paper; however, I hope that the above list of applications is helpful to you in that regard.

DER
JAN 8 1988
BAQM

If there are any questions about this, please let me know.

Sincerely,

Terry Cole

Terry Cole

TC:cjb/020

cc: Mr. Robert Nedley
Mr. Lewis Taylor
Mr. David Buff
Ms. Betsy Pittman
Mr. Ed Middleswart, Northwest District
Mr. Mike Harley, BAQM
Mr. John Millican
Mr. Vic Hutcheson

Copied: Mike Harley
Bruce Mitchell
CHF/BT
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Mr. Mike Harley
Bureau of Air Quality Management
Dept. of Environmental Regulation
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Bruce's Copy

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

December 31, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. E. Nedley
Vice President
St. Joe Forest Products Company
P. O. Box 190
Port St. Joe, Florida 32456-0190

Dear Mr. Nedley:

Re: Mr. Terry Cole's Letter with Enclosures Dated and Received December 22, 1987

The Department received the above referenced letter and enclosed supplemental material for the construction application package, No. AC 23-131963, which is the PATS (permit application tracking system) number assigned to the No. 6 Recovery Boiler. This source's construction permit application package is now being reviewed for completeness due to the above referenced submittal. If your intent was to apply the above referenced submittal to any other pending construction permit application package currently being processed by the Department's Bureau of Air Quality Management (BAQM), please submit to the DER's BAQM office the identity of each source and the PATS assigned construction permit tracking number, which was referenced in every certified incompleteness letter recently mailed to you. Upon receipt of your response by the DER's BAQM office, a completeness review will begin on each construction permit application package for which the above referenced material was intended and that you have clearly identified.

Mr. R. E. Nedley
Page Two
December 31, 1987

If there are any questions, please call Bruce Mitchell at (904)488-1344 or Betsy Pittman at (904)488-9730, or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/bm

cc: B. Pittman, Esq.
E. Middleswart, NW Dist.
L. Taylor, St. Joe Forest Prod. Co.
T. Cole, Oertel & Hoffman
M. Harley, BAQM

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December 22, 1987

HAND DELIVERY

Mr. Claire Fancy
Deputy Bureau Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**Re: St. Joe Forest Products
AC 23-131963 and other pending applications**

Dear Mr. Fancy:

Attached is information which we feel will complete the pending application for the No. 6 Recovery Boiler. In addition the ambient and PSD analysis is relevant to the other pending TRS construction permit applications. Attached are 4 copies of:

-- Analysis of Net Emissions Increase for No. 6 Recovery Boiler
-- Ambient and PSD Increment Analysis for all pending St. Joe Construction Permit applications

In addition information was furnished last week by Rust Engineering on calculations for stack gas velocity from the No. 6 Recovery Boiler stack, confirming the calculations previously provided.

A copy of the additional information on reconstruction costs from Combustion Engineering was also provided last week.

The request for additional information from the Department noted that the application was not signed or sealed. The cover page of the application was previously signed and sealed and is in the Department file. We furnished a new cover page simply as a convenience.

We appreciate your efforts in resolving the outstanding issues. We hope that this will be sufficient to satisfy your needs.

Sincerely,

Terry Cole

Terry Cole

TC:nhg

Enclosures

cc: Robert Nedley
John Millican
Lewis Taylor
David Buff
Vic Hutcheson
Mike Harley

Copied: CHF/BT/BM
Mike Harley } 12-23-87

DER
DEC 22 1987
BAQM

ANALYSIS OF NET EMISSIONS INCREASE
RECOVERY BOILER NO. 6
ST. JOE FOREST PRODUCTS

TOTAL REDUCED SULFUR

The conversion of the boiler to low odor design will result in a significant reduction in TRS emissions. TRS emissions were quantified for both before and after the conversion in the permit application. The before conversion emissions were 242.1 lb/hr and 1,060 TPY. Maximum emissions after conversion were calculated as 8.0 lb/hr and 34.8 TPY.

PARTICULATE MATTER (TSP)

1. AFTER CONVERSION

As stated in the permit application, modifications to the No. 6 Recovery Boiler will result in an increased particulate loading to the precipitator. The precipitator is being upgraded to account for this increased load. The changes will result in maximum PM(TSP) emissions after conversion being no greater than the current maximum permitted level for the boiler of 37.5 lb/hr and 164.3 TPY. Also, the boiler is required to emit no greater than 3 lb PM(TSP) per 3,000 lb of black liquor solids (BLS) fired in the boiler. At the maximum BLS firing rate of 1.2×10^6 lb/day, the 37.5 lb/hr limit would require meeting an emission rate of 2.25 lb/3000 lb BLS.

2. BEFORE CONVERSION

The current permitted PM(TSP) emission level for the boiler is 37.5 lb/hr and 164.3 TPY. This allowable rate is based upon the 3 lb/3000 lb BLS emission standard and a maximum firing rate of 0.9×10^6 lb/day BLS.

3. NET CHANGE

As discussed above, and shown in Table 1, there will be no increase in emissions of PM(TSP) to the atmosphere due to the conversion of the boiler.

SULFUR DIOXIDE

1. AFTER CONVERSION

The boiler manufacturer has stated that the maximum SO_2 emissions after the boiler is converted should not exceed 300 ppm (dry) at 8% O_2. Based upon the calculations shown in the permit application, maximum SO_2 emissions are 256.3 lb/hr and 1,122 TPY.

2. BEFORE CONVERSION

The boiler manufacturer has stated that the conversion of the boiler will result in a reduction in SO_2 emissions from the boiler due to better air distribution, air volume control, and boiler temperature control. In addition, the exhaust gas flow from the boiler will not increase due to the conversion. As a result, estimated SO_2 emissions will be lower after the boiler is converted. Since there is no way to determine the current maximum SO_2 emissions from the boiler, current emissions were assumed to be equal to or greater than the "after conversion" emissions calculated above.

3. NET CHANGE

Based upon the above discussion, there will either be no increase or a net decrease in SO_2 emissions due to the conversion of the No. 6 Recovery Boiler. Emission factors contained in USEPA Publication AP-42 would also show no increase in SO_2 emissions, since emissions are based upon the production rate of the boiler, and there will be no increase in the production rate of No. 6 Recovery Boiler.

<u>NITROGEN OXIDES</u>

1. AFTER CONVERSION

The boiler manufacturer has estimated that the maximum NOx emissions after the boiler is converted to low odor design should not exceed 300 ppm (dry) at 3% O_2. Based upon the calculations shown in the permit application, maximum NO_x emissions are 133.3 lb/hr and 584 TPY.

2. BEFORE CONVERSION

The boiler manufacturer has stated that the conversion of the boiler will result in a reduction in NO_x emissions from the boiler due to better air distribution, air volume control, and boiler temperature control. In addition, the production rate and exhaust gas flow from the boiler will not increase due to the conversion. As a result, estimated NO_x emissions will be lower after the boiler is converted. Since there is no way to determine the current maximum NO_x emissions from the boiler, current emissions were assumed to be equal to or greater than the "after conversion" emissions discussed above.

3. NET CHANGE

Based upon the above discussion, there will either be either no increase or a net decrease in NO_x emissions due to the conversion of the No. 6 Recovery Boiler to low odor design.

CARBON MONOXIDE

There exists no data on current CO emissions from the boiler. The boiler manufacturer states that there should be no increase in CO emissions due to the conversion to low odor, due to better air distribution and better air volume control and better control over firing. The exhaust gas flow from the converted boiler will not increase due to the conversion. AP-42 contains an emission factor for CO from recovery boilers which is based upon the production rate of the boiler. Since the production rate of the boiler will not increase after the conversion to low odor, AP-42 predicts no increase in emissions. Maximum CO emissions from the boiler after conversion were estimated in the permit application to be 270.1 lb/hr and 1,183 TPY. For the reasons discussed above, this also represents the maximum emissions before conversion. Therefore, there is no increase in CO emissions due to the conversion of the boiler.

OTHER REGULATED POLLUTANTS

There is no available data concerning emissions of other regulated pollutants from recovery boilers. For the same reasons discussed above for the other pollutants, it is not expected that conversion to low odor design will cause an increase in emissions of these other unquantifiable pollutants.

PM(10)

Particulate matter less than 10 um in diameter from the recovery boiler can be roughly estimated from data contained in AP-42, Section 10.1 (10/86). The AP-42 section shows that 68.2% of emissions from a recovery boiler with a direct contact evaporator and an ESP (current design of boiler) are 6 um or less in diameter. Data is not available for the 10 um size range. For a boiler without a direct contact evaporator, but equipped with an ESP (converted design of boiler), 71.9% of total particulate emissions are stated to be equal to or less than 6 um, while 74.8% is equal to or less than 10 um. Comparison of the 6 um size range data show virtually no difference between the two configurations.

The upgrading of the existing ESP on No. 6 Recovery Boiler should provide better collection efficiency on the smaller particles and result in a reduction in PM10 emissions. To be conservative, the particle size data from AP-42 for a boiler without a direct contact evaporator and with an ESP (74.8% of particulate is PM10) was used to estimate PM10 emissions both before and after the conversion. The PM10 emission estimates are calculated by taking the PM(TSP) emissions shown above and multiplying by the 74.8% factor.

37.5 lb/hr x 0.748 = 28.1 lb/hr

164 TPY x 0.748 = 123 TPY

SUMMARY

The estimated maximum pollutant emissions from No. 6 Recovery Boiler, both before and after the conversion to low odor, are presented in Table 1. Also shown is the net increase in emissions for each pollutant. As show, there will result a net decrease in emissions of TRS, and a decrease or no increase in emissions of all other pollutants.

Table 1. Summary of Net Emission Increases, No. 6 Recovery Boiler, SJFP

Pollutant	Maximum Emissions Before Conversion (lb/hr)	(TPY)	Maximum Emissions After Conversion (lb/hr)	(TPY)	Net Increase in Emissions (lb/hr)	(TPY)
Total Reduced Sulfur	242.1	1,060	8.0	35	-234.1	-1,025
Particulate Matter (TSP)	37.5	164	37.5	164	0	0
Sulfur Dioxide	>256.3	>1,122	256.3	1,122	<0	<0
Nitrogen Oxides	>133.3	>584	133.3	584	<0	<0
Carbon Monoxide	>270.1	>1,183	270.1	1,183	<0	<0
Particulate Matter (PM10)	28.1	123	28.1	123	0	0

AMBIENT AND PSD INCREMENT ANALYSIS FOR ST. JOE FOREST PRODUCTS COMPANY

December 1987

Prepared by:

KBN Engineering and Applied Sciences, Inc.
P.O. Box 14288
Gainesville, Florida 32604

87040

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1.0 SUMMARY

St. Joe Forest Products Company (SJFP) of Port St. Joe, Florida, has recently submitted construction permit applications to the Florida Department of Environmental Regulation (FDER) as required by their total reduced sulfur (TRS) compliance plan. SJFP's TRS compliance plan involves several sources at their existing mill, including No. 5 Recovery Boiler and No. 6 Recovery Boiler. FDER has requested that SJFP conduct an air dispersion modeling evaluation to assess compliance with the ambient air quality standards (AAQS) and Prevention of Significant Deterioration (PSD) allowable air quality increments for sulfur dioxide (SO_2) and total suspended particulate matter [PM(TSP)].

The analysis presented herein addresses compliance with the AAQS and PSD increments for SO_2 and PM(TSP). Regulatory requirements in addressing these standards are discussed in Section 2.0. PSD baseline SO_2 and PM(TSP) emissions for the SJFP mill are presented in Section 3.0 Future maximum emissions for sources at the mill, based upon the TRS permit applications, are described in Section 4.0

Presented in Section 5.0 are the methodology and results of the SO_2 air quality impact analysis. Similarly, Section 6.0 presents the methodology and result of the PM(TSP) air quality analysis. Supportive calculations and information are presented in the appendices.

2.0 REGULATORY REQUIREMENTS

2.1 ALLOWABLE PSD INCREMENTS

The State of Florida Department of Environmental Regulation (FDER) has adopted regulations governing the Prevention of Significant Deterioration (PSD) of air quality. The regulations are contained in Florida Administrative Code (FAC), Section 17-2.500. The Florida PSD regulations parallel PSD regulations promulgated by the U.S. Environmental Protection Agency (USEPA). As a result, the USEPA has delegated federal PSD review authority to FDER.

The Florida PSD rules require that the allowable PSD increments not be exceeded due to the combined effects from all sources affecting increment consumption. FAC Section 17-2.500(1)(b) provides that:

> ... the combined impact of all emissions shall not cause or contribute to an ambient concentration at any point within a baseline area that exceeds either the appropriate baseline concentration for the point plus the appropriate maximum allowable increase or the appropriate air quality standard, whichever is less.

PSD increments have only been established for sulfur dioxide (SO_2) and total suspended particulate matter [PM(TSP)]. The maximum allowable PSD increments are shown in Table 2-1.

2.2 DESIGNATION OF AREA

The term "baseline area" is defined in FAC Section 17-2.100(20) as all areas designated as PSD areas under Section 17-2.450. Section 17-2.450 designates PSD areas as all areas of the state except those areas designated as nonattainment under Section 17-2.410. Gulf County, where the SJFP mill is located, as well as all areas within 100 km of Gulf County, are designated as attainment areas. Therefore, SJFP is located in a "baseline area".

All areas of the state are classified as Class I, Class II or Class III for PSD purposes. Section 17-2.440 specifies that all areas of the state are Class II areas except those designated as Class I areas. Two Class I areas are located within 100 km of the SJFP mill (see Figure 2-1).

Table 2-1. Federal and State of Florida Allowable PSD Increments

Pollutant/Averaging Time	Allowable Increment (ug/m^3) Class I	Class II	Class III
Particulate Matter (TSP)			
Annual Geometric Mean	5	19	37
24-Hour Maximum*	10	37	75
Sulfur Dioxide			
Annual Arithmetic Mean	2	20	40
24-Hour Maximum*	5	91	182
3-Hour Maximum*	25	512	700

* Maximum concentration not to be exceeded more than once per year.

Sources: 40 CFR Part 52.21
Florida Administrative Code, Chapter 17-2.500

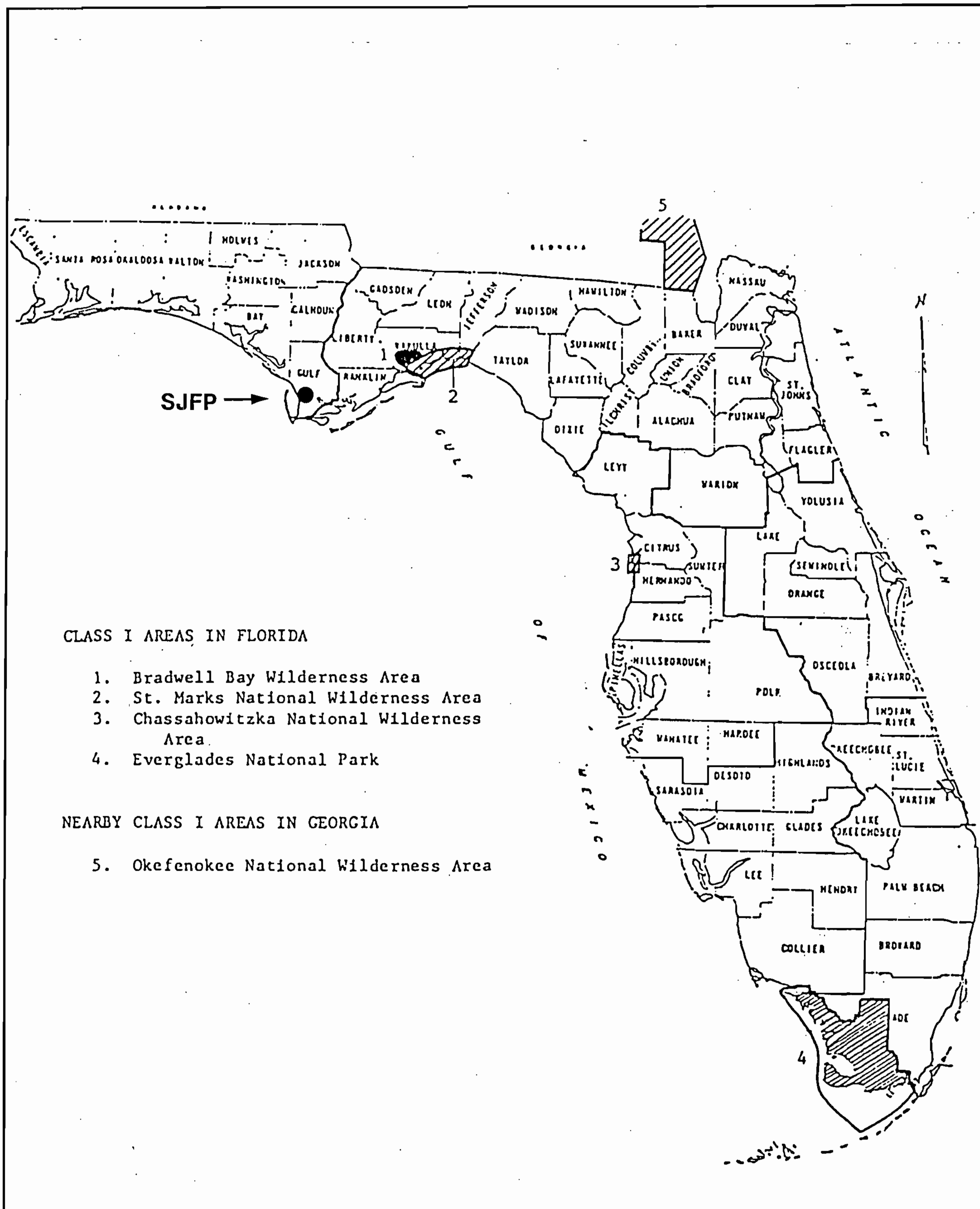

Figure 2-1. Location of SJFP Mill in Relation to PSD Class I Areas

The St. Marks National Wilderness Area has its closest border located approximately 80 km from the SJFP mill, and the Bradwell Bay National Wilderness Area is located approximately 77 km from SJFP.

2.3 BASELINE CONCENTRATION

"Baseline Concentration" is defined in Section 17-2.100(21) as:

> The ambient concentration level, or set of levels, that is predicted to occur at each point within a baseline area for conditions existing at the time of the applicable baseline date. The concentration is comprised of the predicted impact of the baseline emissions, using an appropriate air quality model and meteorological data that are generally representative of the baseline area, plus a representative background concentration. A baseline concentration is determined for each pollutant for which a baseline date has been established and for each averaging time for which a maximum allowable increase is established...
>
> For the annual average, the baseline concentration is the average concentration that is predicted to occur at each point within the area for each calendar year modeled.
>
> For shorter term averages, the baseline concentration is the set of all such short-term concentrations predicted to occur at each point within the area for each calendar year modeled.

2.4 BASELINE DATE

Section 17-2.450 not only designates PSD areas, but also establishes PSD baseline dates for all areas. This provision establishes December 27, 1977, as the PSD baseline date for all PSD areas in the state [both SO_2 and PM(TSP) baseline areas].

2.5 BASELINE EMISSIONS

Baseline related provisions of the PSD regulations are contained in 17-2.500(4)(b). These rules provide requirements for establishment of baseline emissions. Section 17-2.500(4)(b)2, Determination of Baseline Emissions, reads as follows:

2. Determination of Baseline Emissions.

a. Except as provided under Rule 17-2.500(4)(b)2.b. through d., the baseline emissions shall be the actual emissions representative of all facilities in existence on the applicable baseline date which are located within the baseline area or have a significant impact on the baseline area.

(i) On an annual basis, the actual emissions representative of a facility shall be the sum of the actual emissions of each source within the facility.

(ii) On a short-term basis, the actual emissions representative of a facility shall be the sum of the normal maximum emissions of each source within the facility, where normal maximum emissions are the emissions that would occur for each applicable averaging time if a source were operated at the lesser of its maximum or federally enforceable permitted capacity, using the normal types and amounts of fuels or materials processed, and operated for the lesser of the normal or federally enforceable permitted number of hours per day.

b. The baseline emissions of a facility on which construction commenced on or before January 6, 1975, but which was not in operation by the applicable baseline date, shall be the federally enforceable allowable emissions of the facility, provided such facility would be subject to the NSR requirements of this section if it were a proposed new facility.

c. The following emissions shall not be included in the baseline emissions, but shall be considered in calculating the amount of any maximum allowable increase remaining available:

(i) The actual emissions representative of a facility on which construction commenced after January 6, 1975, provided such facility would be subject to the NSR requirements of this section if it were a proposed new facility;

(ii) Any increase in the actual emissions representative of a facility resulting from a physical change in or change in the method of operation of the facility which occurred after January 6, 1975, but prior to the applicable baseline date, provided such facility would be subject to the NSR requirements of this section if it were a proposed new facility and such increase would not qualify for an exemption from the NSR requirements of this section pursuant to 17-2.500(2)(c);

(iii) Any decrease in the actual emissions representative of a facility resulting from a physical change in or change in the method of operation of the facility (including demolition or any otherwise permanent reduction in the productive capacity of the facility) which occurred after January 6, 1975, but prior to the applicable baseline date, provided such facility would be subject to the NSR requirements of this section if it were a proposed new facility; and

(iv) Any increase or decrease in the actual emissions representative of all facilities occurring after the applicable baseline date.

e. For purposes of Rules 17-2.500(4)(b)2.c.(ii) and (iii), a physical change in or change in the method of operation of a facility shall not include:

(i) Routine maintenance, repair, or replacement of component parts of a source;

(ii) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975; or

(iii) A change in the ownership of a source or facility.

The regulations therefore provide that any changes in actual emissions at a major facility which occurred after the baseline date (December 27, 1977), or changes in emissions resulting from a physical change in or change in the method of operation which occurred after January 6, 1975 but prior to the baseline date, affects PSD increment consumption (i.e., increases consume increment and decreases expand the available increments). In addition, the allowable emissions from facilities (or sources located within facilities) which commenced construction prior to the baseline date, but were not operating as of the baseline date, are also to be included in the baseline emissions, and reflected in the baseline concentration. SJFP was an existing facility as of January 6, 1975, and any changes in actual emissions as described above would affect the available PSD increments.

2.6 AMBIENT AIR QUALITY STANDARDS

The USEPA and FDER have promulgated AAQS for SO_2, PM(TSP) and several other pollutants. The current federal and state AAQS are presented in Table 2-2. The AAQS apply to the areas of "ambient air," i.e., areas to which the general public has access. Plant property to which the public does not have access because of physical barriers or other means, is not considered to be ambient air.

Table 2-2. Federal and State of Florida Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	Federal Secondary Standard	State of Florida
Particulate Matter (TSP)	Annual Geometric Mean	75	60	60
	24-Hour Maximum*	260	150	150
Particulate Matter (PM_{10})	Annual Arithmetic Mean+	50	50	N/A
	24-Hour Maximum**	150	150	N/A
Sulfur Dioxide	Annual Arithmetic Mean	80	N/A	60
	24-Hour Maximum*	365	N/A	260
	3-Hour Maximum*	N/A	1,300	1,300
Carbon Monoxide	8-Hour Maximum*	10,000	10,000	10,000
	1-Hour Maximum*	40,000	40,000	40,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100
Ozone	1-Hour Maximum**	235	235	235
Lead	Calendar Quarter	1.5	1.5	1.5

*Maximum concentration not to be exceeded more than once per year.
+Expected annual arithmetic mean concentration.
**Maximum concentration not to be exceeded more than an average of 1 calendar day per year.

Sources: 40 CFR, Parts 50 and 52.
Florida Administrative Code, Chapter 17-2

3.0 SJFP BASELINE EMISSIONS

3.1 SJFP OPERATIONS AS OF JANUARY 6, 1975

Extensive review of historic operational data from the 1974-1975 time period was undertaken to document plant operations as of January 6, 1975. Plant logs and process data were reviewed. Previous air permits issued for the facility and permit applications submitted to obtain the permits were also reviewed. A history of air permits issued to sources at SJFP is presented in Table 3-1. Several sources at the plant were in existence in the early 1970s when the Florida Department of Pollution Control (FDPC) was responsible for air permitting. These sources received air operating permits from the FDPC in 1972:

No. 1 Power Boiler	No. 4 Recovery Boiler
No. 2 Power Boiler	No. 5 Recovery Boiler
No. 3 Power Boiler	No. 6 Recovery Boiler
No. 4 Power Boiler	No. 1 Lime Kiln
No. 5 Power Boiler	No. 2 Lime Kiln
No. 6 Power Boiler	No. 3 Lime Kiln
No. 7 Power Boiler	"A" Side Slaker Vent
No. 8 Power Boiler	"B" Side Slaker Vent

All these sources were operating as of January 6, 1975, and are therefore included in the baseline emissions.

The No. 7 Recovery Boiler and No. 7 Smelt Dissolving Tanks received a construction permit in 1972, which was prior to January 6, 1975, and therefore are included in the baseline emissions. This source began operating in 1975 and received an operating permit in 1975. There was no requirement in the No. 7 Recovery Boiler construction permit that any other sources at the mill be shut down when the new recovery boiler began operating. The No. 7 Smelt Dissolving Tanks were included in the initial No. 7 Recovery Boiler construction permit issued in 1972. As shown in Table 3-1, the No. 7 Smelt Dissolving Tanks where permitted separately in 1976, but were then again incorporated into the No. 7 Recovery Boiler permits in subsequent permit issuances.

Table 3-1. History of Air Permits Issued to Sources at SJFP (page 1 of 2)

Source	Permit No.	Issued	Comments
No. 1 Power Boiler	A023-443	06/13/72	Initial operating permit
	A023-4670	04/19/78	Operating permit renewal
No. 2 Power Boiler	A023-444	06/13/72	Initial operating permit
	A023-4671	04/19/78	Operating permit renewal
No. 3 Power Boiler	A023-445	06/13/72	Initial operating permit
	A023-2006	03/10/75	Operating permit renewal
	A023-26318	02/22/80	Operating permit renewal
No. 4 Power Boiler	A023-446	06/13/72	Initial operating permit
	AC23-2024	09/25/75	Const. permit- PM control
	AC23-4605	12/21/77	Const. permit- PM control
	A023-10481	02/08/79	Oper. permit- PM control
	A023-81333	03/02/84	Operating permit renewal
No. 5 Power Boiler	A023-447	06/13/72	Initial operating permit
	A023-2007	03/10/75	Operating permit renewal
	A023-26317	02/22/80	Operating permit renewal
	A023-96179	02/15/85	Operating permit renewal
No. 6 Power Boiler	A023-448	06/13/72	Initial operating permit
	A023-2008	03/10/75	Operating permit renewal
	A023-26316	02/22/80	Operating permit renewal
	A023-96178	02/15/85	Operating permit renewal
No. 7 Power Boiler	A023-449	06/13/72	Initial operating permit
	A023-2009	03/10/75	Operating permit renewal
	A023-29350	06/13/80	Operating permit renewal
No. 8 Power Boiler	A023-450	06/13/72	Initial operating permit
	A023-2010	03/10/75	Operating permit renewal
	A023-29348	06/13/80	Operating permit renewal
No. 9 Power Boiler	AC23-36725	01/12/81	Initial construction permit
	PSD-FL-075	02/18/82	EPA PSD permit
	A023-64709	03/02/84	Initial operating permit
		12/26/84	Minor mod. to EPA PSD

Table 3-1. History of Air Permits Issued to Sources at SJFP (page 2 of 2)

Source	Permit No.	Issued	Comments
No. 4 Recovery Boiler	A023-458	06/13/72	Initial operating permit
No. 5 Recovery Boiler	A023-459	06/13/72	Initial operating permit
	A023-2011	03/10/75	Operating permit renewal
	A023-26314	02/22/80	Operating permit renewal
	A023-96175	02/15/85	Operating permit renewal
No. 6 Recovery Boiler	A023-460	06/13/72	Initial operating permit
	A023-2012	03/10/75	Operating permit renewal
	A023-26313	02/22/80	Operating permit renewal
	A023-96174	02/15/85	Operating permit renewal
No. 7 Recovery Boiler	AC-438	06/12/72	Initial construction permit
	A023-2027	10/21/75	Initial operating permit
	A023-34313	05/07/81	Operating permit renewal
	A023-96177	02/15/85	Operating permit renewal
		07/25/86	Interim TRS oper. permit
No. 7 R.B.- Smelt Dissolving Tank East	A023-2031	12/14/76	Operating permit
No. 7 R.B.- Smelt Dissolving Tank West	A023-2032	12/14/76	Operating permit
No. 1 Lime Kiln	A023-440	06/12/72	Initial operating permit
	A023-96171	02/15/85	Operating permit renewal
		07/25/86	Interim TRS oper. permit
No. 2 Lime Kiln	A023-441	06/12/72	Initial operating permit
	A023-96172	02/15/85	Operating permit renewal
		07/25/86	Interim TRS oper. permit
No. 3 Lime Kiln	A023-442	06/12/72	Initial operating permit
	A023-96173	02/15/85	Operating permit renewal
		07/25/86	Interim TRS oper. permit
"A" Side Slaker Vent	A023-456	06/12/72	Initial operating permit
	A023-2025	10/20/75	Operating permit renewal
	A023-2033	12/14/76	Operating permit renewal
	A023-48591	11/13/81	Operating permit renewal
	A023-96180	02/15/85	Operating permit renewal
"B" Side Slaker Vent	A023-457	06/12/72	Operating permit renewal
	A023-2026	10/20/75	Operating permit renewal
	A023-2034	12/14/76	Operating permit renewal
	A023-48592	11/13/81	Operating permit renewal
	A023-96181	02/15/85	Operating permit renewal

Source: St. Joe Forest Products

The No. 9 Power Boiler received a construction permit in 1981, which is after January 6, 1975, and is therefore not included in the baseline emissions.

3.2 BASELINE SO_2 EMISSIONS

Baseline SO_2 emissions for sources at SJFP were developed based upon actual plant operational data from the calendar year 1974. These data are representative of actual emissions as of January 6, 1975. For the No. 7 Recovery Boiler and No. 7 Smelt Dissolving Tanks, which were permitted but not yet operating as of January 6, 1975, maximum estimated emissions based upon the construction permit and application data were used as baseline emissions. The PSD regulations provide for this treatment of permitted but not yet operating sources.

3.2.1 ANNUAL AVERAGE SO_2 EMISSIONS

Power Boilers

Shown in Table 3-2 is actual fuel oil usage for 1974 for the Nos. 1 through 9 Power Boilers at SJFP, and resulting actual annual SO_2 emissions. SO_2 emissions were calculated based upon the fuel usage and emission factors contained in USEPA Publication AP-42, "Compilation of Air Pollutant Emission Factors," Fourth Edition, Supplement A (see Appendix A). The sulfur content of the fuel oil was reported as 2.99% in 1974 and 2.61% in 1975. The lower sulfur content figure of 2.61% was used to conservatively estimate baseline emissions from the power boilers. The AP-42 emission factor for SO_2 from fuel oil burning is 157S lb/1000 gal, where S is the fuel sulfur content in percent. For a fuel sulfur content of 2.61%, the factor reduces to 409.8 lb/1000 gal. A sample SO_2 emission calculation is provided in Appendix A.

Recovery Boilers

Baseline SO_2 emissions for the Nos. 4, 5 and 6 Recovery Boilers were based upon information provided on operating permit applications submitted prior to or near the January 6, 1975 baseline date. Actual stack tests for SO_2 were not conducted on the recovery boilers; therefore, the application data are considered the best estimates of SO_2 emissions. The reported emission

Table 3-2. Fuel Oil Consumption and Sulfur Dioxide Emissions for Boilers 1-8 at St. Joe Paper, 1974.

Month/Year	#1 P.B.	#2 P.B.	#3 P.B.	#4 P.B.	#5 P.B.	#6 P.B.	#7 P.B.	#8 P.B.	Totals
1974				Fuel Oil Consumption (gal)					
January	233,008	125,884	428,683	27,513	999,144	0	911,467	881,055	3,606,754
February	188,858	132,498	389,942	28,664	559,635	0	846,460	807,000	2,953,057
March	246,422	177,459	463,625	40,722	1,070,921	0	955,639	953,881	3,908,669
April	232,723	185,932	406,355	33,365	956,982	91,640	876,890	812,276	3,596,163
May	72,698	97,032	266,818	24,767	718,042	928,146	826,580	747,235	3,681,318
June	54,970	63,075	297,629	21,538	886,937	991,681	687,531	685,735	3,689,096
July	108,891	101,485	274,316	37,187	783,670	808,231	101,484	517,380	2,732,644
August	81,604	73,370	288,310	58,785	866,785	969,225	770,752	632,919	3,741,750
September	101,936	101,531	212,428	61,475	924,054	1,003,996	695,989	669,006	3,770,415
October	101,476	100,390	220,524	81,047	929,720	1,011,347	730,788	715,663	3,890,955
November	145,305	40,140	322,966	48,848	962,440	1,035,451	782,727	748,944	4,086,821
December	56,129	45,899	157,007	12,261	675,714	777,134	390,945	395,637	2,510,726
1974 Totals	1,624,020	1,244,695	3,728,603	476,172	10,334,044	7,616,851	8,577,252	8,566,731	42,168,368
				Sulfur Dioxide Emissions (tons/yr)*					
Year 1974	333	255	764	98	2,117	1,561	1,757	1,755	8,640

* Based upon fuel oil sulfur content of 2.61%.

rates appear to be reasonable in comparison to the estimated current SO_2 emissions from the recovery boilers (see Section 4.0, SJFP Projected Emissions).

The general methodology consisted of calculating an SO_2 emission factor in terms of lb SO_2/lb steam produced in the boilers, based upon the data in the permit applications. Annual SO_2 emissions were then calculated based upon actual 1974 steam production in the recovery boilers (see Table 3-3). Estimated annual baseline SO_2 emissions and supporting data are shown in Table 3-4. Supporting calculations are presented in Appendix A.

In the case of No. 7 Recovery Boiler, the historic operating permit applications did not quantify SO_2 emissions. As a result, baseline SO_2 emissions for No. 7 Recovery Boiler were based upon an SO_2 stack test conducted on the boiler in 1984. The test showed the concentration of SO_2 in the flue gases to be 208 ppm, dry basis (average emissions from the two stacks serving No. 7 Recovery Boiler). Based upon this SO_2 stack gas concentration, design volumetric flow rates and steam rates from the July 1975 Application to Operate for the boiler were used to develop an SO_2 emission factor (lb SO_2/lb steam). Since this boiler was not yet operating as of January 6, 1975, maximum SO_2 emissions based upon the design steam rate constitute baseline emissions. Pertinent data and annual baseline SO_2 emissions for No. 7 Recovery Boiler are summarized in Table 3-4. Supporting documentation and calculations are presented in Appendix A.

<u>Smelt Dissolving Tanks</u>

Baseline SO_2 emissions from the Nos.4, 5 and 6 Smelt Dissolving Tanks were estimated based upon the AP-42 emission factor for smelt dissolving tanks and actual 1974 pulp production at the mill. The total SO_2 emissions calculated in this manner were then distributed between the smelt dissolving tanks on the basis of annual steam production in their associated recovery boilers (see Table 3-3). Resulting annual baseline emissions were as follows:

SJPRBBAS

Table 3-3. Steam Production by Recovery Boilers 4, 5 & 6 at St. Joe Paper, 1974.

Month/Year	#4 R.B.	#5 R.B.	#6 R.B.	Totals
1974	Steam Production (1000 lb)			
January	62,307	101,522	104,182	268,011
February	53,629	87,607	87,209	228,445
March	64,513	91,016	80,551	236,080
April	67,669	104,181	91,478	263,328
May	68,834	104,747	98,172	271,753
June	60,674	85,529	81,735	227,938
July	43,682	67,135	67,171	177,988
August	68,982	96,406	94,137	259,525
September	59,944	82,564	86,461	228,969
October	62,420	92,278	95,265	249,963
November	64,514	92,279	95,632	252,425
December	30,662	41,693	45,467	117,822
1974 Totals	707,830	1,046,957	1,027,460	2,782,247

Source: St. Joe Forest Products

Table 3-4. Summary of Annual Baseline SO_2 Emissions From Recovery Boilers.

Source	1974 Steam Production (10^6 lb/yr)	SO_2 Emission Factor (lb SO_2/lb steam)	SO_2 Emissions (TPY)
No. 4 Recovery Boiler	707.830	0.00128	453
No. 5 Recovery Boiler	1,046.957	0.00155	811
No. 6 Recovery Boiler	1,027.460	0.00167	858
No. 7 Recovery Boiler	4,292.400*	0.00054	1160

*Design steam production rate

No. 4 Smelt Dissolving Tank - 10 TPY

No. 5 Smelt Dissolving Tank - 15 TPY

No. 6 Smelt Dissolving Tank - 15 TPY

Baseline SO_2 emissions from the permitted, but not yet operating, No. 7 Smelt Dissolving Tank were estimated using the AP-42 factor and the equivalent pulp production capacity of the boiler. Resulting SO_2 emissions were 39 TPY. Supporting calculations and information for the emission estimates are presented in Appendix A.

Lime Kilns

Nos. 1, 2 and 3 Lime Kiln SO_2 emissions for the baseline period were estimated in a manner similar to the smelt dissolving tanks. The AP-42 emission factor and actual pulp production in 1974 were used to estimate actual SO_2 emissions. The effects of No. 7 Recovery Boiler (permitted but not operating) on pulp production at the mill and resulting SO_2 emissions were also determined, similar to the smelt dissolving tanks. Lime production from individual lime kilns was not available for 1974 or 1975, and therefore the total SO_2 emissions were distributed evenly over all three lime kilns. The resulting SO_2 emissions per lime kiln was 40 TPY. Supportive calculations are contained in Appendix A.

Slaker Vents

The Slaker vents do not emit SO_2 and therefore are not included in the baseline SO_2 emission inventory.

3.2.2 SHORT-TERM SO_2 EMISSIONS

Short term SO_2 emissions representative of actual maximum 24-hour emissions for the baseline period were developed based upon 1974-1975 plant production records. As demonstrated in the annual baseline inventory (Section 3.2.1), the power boilers and recovery boilers are by far the most significant sources of SO_2 at SJFP. Therefore, to define maximum short-term SO_2 emissions, plant records were reviewed to determine the maximum daily steam production by the power boilers and recovery boilers during the baseline period. From this review, January 29, 1975 was identified as the day maximum 24-hour steam production occurred. On this day, total plant steam production was 31,080,000 lb steam. A breakdown of steam production by steam generating unit is presented in Table 3-5.

In order to estimate SO_2 emissions from the power boilers based upon steam production, the gallons of fuel oil per pound of steam generated from oil must be known. Presented in Table 3-6 is the total steam generated from fuel oil, total fuel oil burned, and average fuel oil consumption per pound of steam generated for each boiler, based upon actual operation in January 1975. Based upon these data and the AP-42 emission factor for fuel oil burning (see Section 3.2.1), average hourly SO_2 emissions from each power boiler for the 24 hour period were determined (see Table 3-7).

SO_2 emissions from the recovery boilers for January 29, 1975, were determined based upon the previously calculated SO_2 emission factors (lb SO_2/lb steam - see Section 3.2.1). The resulting hourly SO_2 emissions are as follows:

Recovery Boiler	January 29, 1975 Steam Production (lb)	(avg. lb/hr)	SO_2 Emission Factor (lb SO_2/lb steam)	SO_2 Emissions (avg. lb/hr)
4	2,052,000	85,500	0.00128	109
5	3,454,000	143,917	0.00155	223
6	3,336,000	139,000	0.00167	232

For No. 7 Recovery Boiler, which was permitted but not yet operating, short-term SO_2 emissions were based upon design rates. From the annual baseline calculations (Appendix A), the maximum SO_2 emission rate is 265 lb/hr.

For the Nos. 4, 5 and 6 smelt dissolving tanks and the lime kilns, average hourly SO_2 emissions were used as an estimate of maximum short-term emissions. The average hourly emissions were derived from the annual baseline SO_2 emissions from each source (Section 3.2) and actual mill operating days. The mill operated approximately 336 days in 1974; resulting hourly SO_2 emissions are as follows:

Table 3-5. Steam Production Rates on January 29, 1975 at SJFP

Source	Steam (1000 lb) Due to			
	Oil	Bark	BLS*	Total
No. 1 Power Boiler	1,508	181	-	1,689
No. 2 Power Boiler	1,341	379	-	1,720
No. 3 Power Boiler	1,621	-	-	1,621
No. 4 Power Boiler	374	1,849	-	2,223
No. 5 Power Boiler	4,086	-	-	4,086
No. 6 Power Boiler	4,547	-	-	4,547
No. 7 Power Boiler	3,400	-	-	3,400
No. 8 Power Boiler	2,952	-	-	2,952
Subtotal	19,829	2,409	-	22,238
No. 4 Recovery Boiler	0	-	2,052	2,052
No. 5 Recovery Boiler	76	-	3,378	3,454
No. 6 Recovery Boiler	163		3,173	3,336
Subtotal	239	-	8,603	8,842
GRAND TOTAL	20,068	2,409	8,603	31,080

* BLS = Black liquor solids

Source: St. Joe Forest Products

SJPWDOIL

Table 3-6. Steam Production and Fuel Oil Consumption in Power Boilers, SJFP, January, 1975

Power Boiler No.	Steam From Oil (1000 lb)	Fuel Oil Burned (bbls)	Average Oil Consumption (gal/1000 lb stm.)
1	23,646	5,895	10.47
2	18,829	4,696	10.47
3	46,400	9,986	9.04
4	6,214	1,547	10.46
5	119,589	21,647	7.60
6	127,473	26,359	8.68
7	92,508	19,202	8.72
8	82,784	18,606	9.44

Source: St. Joe Forest Products Company

SJP29SO2

Table 3-7. Estimated Sulfur Dioxide Emissions From Power Boilers, January 29, 1975

Power Boiler No.	Steam From Oil (1000 lb)	Steam From Oil (avg. lb/hr)	Average gal oil per 1000 lb steam	Average Oil Burned (gal/hr)	Average SO2* (lb/hr)
1	1,508	62,833	10.47	658	270
2	1,341	55,875	10.47	585	240
3	1,621	67,542	9.04	611	250
4	374	15,583	10.46	163	67
5	4,086	170,250	7.60	1,294	530
6	4,547	189,458	8.68	1,644	674
7	3,400	141,667	8.72	1,235	506
8	2,952	123,000	9.44	1,161	476
Totals	19,829	826,208		7,351	3,012

* Based upon AP-42 factor of 157 S lb/1000 gal and fuel oil sulfur content of 2.61%.

Source	Annual SO_2 (TPY)	Hourly Average SO_2 (lb/hr)
No. 4 Smelt Dissolving Tank	10	2.5
No. 5 Smelt Dissolving Tank	15	3.7
No. 6 Smelt Dissolving Tank	15	3.7
No. 1 Lime Kiln	40	9.9
No. 2 Lime Kiln	40	9.9
No. 3 Lime Kiln	40	9.9

For the No. 7 Smelt Dissolving Tanks, maximum hourly SO_2 emissions were based upon the design rate of 8.82 lb/hr (see Appendix A).

3.3 BASELINE PM EMISSIONS

3.3.1 ANNUAL AVERAGE PM EMISSIONS

Power Boilers

Annual baseline PM emissions for the power boilers were based upon PM emissions tests performed in 1974 on the boilers and actual 1974 production records. PM testing was performed on Nos. 3, 4, 5, 6, 7 and 8 Power Boilers in 1974 (see Appendix B for supporting information). All boilers were tested on oil except for No. 4 Power Boiler, which was tested on bark fuel. Nos. 1 and 2 Power Boilers were not tested. From these test data, PM emission factors in terms of $lb/10^6$ Btu heat input were developed. For Nos. 1, 2 and 4 Power Boilers, which were not tested on oil burning, the PM emission factor for oil burning was assumed to be the same as that developed for No. 3 Power Boiler. The PM emission factors for oil burning are presented in Table 3-8.

Total fuel oil consumption in each boiler for 1974, based upon plant records, is also shown in Table 3-8. Total heat input to each boiler was calculated assuming 150,000 Btu/gal for high sulfur No. 6 fuel oil. Based upon the total heat input to each boiler and the PM emission factor, annual PM emissions due to fuel oil burning were calculated (Table 3-8). Example calculations are provided in Appendix B.

PMANNBAS

Table 3-8. Annual Baseline PM Emissions From Fuel Oil Burning In Power Boilers, SJFP

Source	1974 Test Data			1974 Operational Data		1974 PM Emissions (TPY)
	Heat Input (MM Btu/hr)	PM Emissions (lb/hr)	(lb/MM Btu)	Oil Burned (gal)	Heat Input* (MM Btu/yr)	
No. 1 Power Boiler	--	--	0.097+	1,624,020	243,603	11.8
No. 2 Power Boiler	--	--	0.097+	1,244,695	186,704	9.1
No. 3 Power Boiler	71.92	7.0	0.097	3,728,603	559,290	27.1
No. 4 Power Boiler	122.00	--	0.097+	476,172	71,426	3.5
No. 5 Power Boiler	183.50	13.3	0.072	10,334,044	1,550,107	55.8
No. 6 Power Boiler	213.40	8.8	0.041	7,616,851	1,142,528	23.4
No. 7 Power Boiler	190.00	18.1	0.095	8,577,252	1,286,588	61.1
No. 8 Power Boiler	176.50	9.9	0.056	8,566,731	1,285,010	36.0
					Totals	227.8

* Based upon fuel oil heat content of 150,000 Btu/gal
+ PM emissions from Nos. 1, 2 and 4 Power Boilers were not measured when burning oil; therefore, PM emissions assumed to be the same as No. 3 Power Boiler

No. 4 Power Boiler was primarily a bark-fueled boiler. As of January 6, 1975, the boiler was equipped with only mechanical collectors (cyclones) for PM control. PM test data from 1974 demonstrated actual emissions of 0.62 $lb/10^6$ Btu. The unit was required to comply with the state of Florida's carbonaceous fuel burning equipment limit of 0.3 $lb/10^6$ by July 1, 1975. SJFP submitted an application to add control equipment to the boiler in July 1975 and was granted a construction permit in September 1975. Based upon these considerations, the baseline PM emission level is the actual measured PM emission rate of 0.62 $lb/10^6$ Btu.

Annual baseline PM emissions from No. 4 Power Boiler due to bark firing were then estimated on the basis of total steam production due to bark firing in the boiler in 1974 and the above defined emission factor. Resulting PM emission were 580 TPY. These emissions due to bark firing were then added to the baseline emissions due to oil firing in No. 4 Power Boiler (3.5 TPY, see Table 3-8) to obtain total baseline PM emissions of 583.5 TPY.

Recovery Boilers

Annual baseline PM emissions from the Nos. 4, 5 and 6 Recovery Boilers at SJFP were also estimated on the basis of PM stack tests conducted in 1974 and plant production records. PM stack tests were conducted on the No. 5 and No. 6 Recovery Boilers in 1974, and a PM emission factor in terms of lb/1000 lb black liquor solids (BLS) input was determined for each boiler. The No. 4 Recovery Boiler was not tested for PM, but this boiler is of the same design as the No. 5 and No. 6 Recovery Boilers, and had similar PM control equipment (ESP plus demister pad). PM emissions would be similar to that from No. 5 and No. 6 boilers. Therefore, the average of the PM emission factors for the No. 5 and No. 6 Recovery Boilers was used as the emission factor for No. 4 Recovery Boiler.

Based upon operating permit applications, all three of these boilers had a design of 2.7 lb steam/lb BLS input. Using actual 1974 steam production figures for each boiler (see Table 3-3), annual BLS input was calculated, and annual PM emissions determined based upon the emission factor. Pertinent data and resulting PM emissions are shown in Table 3-9.

RBPMBAS

Table 3-9. Annual Baseline PM Emissions From Recovery Boilers, SJFP

Source	1974 Test Data			1974 Operational Data		1974 PM Emissions
	BLS Input (lb/day)	PM Emissions (lb/hr)	PM Emissions (lb/1000 lb BLS)	Steam Prod. (MM lb)	BLS Input* (MM lb/yr)	(TPY)
No. 4 Recovery Boiler	--	--	0.13 +	707.830	262.2	17.0
No. 5 Recovery Boiler	473,671	2.10	0.11	1,046.957	387.8	21.3
No. 6 Recovery Boiler	589,928	3.73	0.15	1,027.460	380.5	28.5
No. 7 Recovery Boiler**	--	--	--	--	--	516.8
					Totals	583.7

* Based upon boiler design of 2.7 lb steam per lb BLS input.
+ Represents average of PM emissions from No. 5 and No. 6 Recovery Boilers.
**Based upon permit application data (7/23/75).

For the No. 7 Recovery Boiler, which was not operating as of January 6, 1975, baseline PM emissions were based upon the July 1975 Application to Operate and May 1975 PM stack test. These documents showed actual PM emissions to be 118 lb/hr. Annual baseline PM emissions, based upon year around operation, are calculated as 516.8 TPY. Supporting calculations for the baseline emissions from the recovery boilers are presented in Appendix B.

Smelt Dissolving Tanks

PM emission tests were not conducted on Nos. 4, 5 and 6 Smelt Dissolving Tanks during the baseline period. Information regarding emissions were not contained in the operating permit applications. As a result, the PM emission factor for smelt dissolving tanks reported in AP-42 was used to estimate baseline emissions. The emission factor is expressed in terms of lb/ton ADUP. Using the actual 1974 pulp production at SJFP, total annual baseline PM emissions were estimated. The total emissions were distributed among the three sources based upon total steam production in each associated recovery boiler, as described in Appendix A, Item III.A. Baseline PM emissions estimated in this manner were as follows:

No. 4 Smelt Dissolving Tank - 10.3 TPY
No. 5 Smelt Dissolving Tank - 15.2 TPY
No. 6 Smelt Dissolving Tank - 14.9 TPY

For the No. 7 Smelt Dissolving Tank, actual PM emissions as specified on the September 1976 Application to Operate were used as the best estimate of baseline emissions. The application indicated 78.08 lb/day, or 3.25 lb/hr. Annual emissions were based upon year-round operation for the permitted but not yet operating source. This resulted in 14.2 TPY as the PM baseline emissions. Supporting calculations and documentation for the baseline emissions from the Smelt Dissolving Tanks are presented in Appendix B.

Lime Kilns

Annual baseline PM emissions from the lime kilns were based upon actual PM tests conducted on the kilns in 1974 and actual kiln production in 1974. Based upon the PM stack tests, emission factors in terms of lb/ton lime produced were developed. Because lime production on a per kiln basis was not available (only total lime production available), the average emission factor for all three kilns was applied to the total 1974 lime production. The resulting PM emissions were then distributed evenly among the three kilns. The resulting annual baseline PM emission rate for each kiln was 16.4 TPY. Supportive information is provided in Appendix B.

Slaker Vents

Baseline emissions for the "A" and "B" Slaker Vents were based upon information contained in the October 1976 Application to Operate for each source. The PM emission estimates in the application were based upon actual PM stack tests conducted in October 1976. The October 1976 data are considered representative of January 6, 1975 emissions because no significant changes in operation of the slakers occurred between these two dates. Baseline PM emissions are therefore estimated as 55.9 TPY for "A" Side Slaker Vent, and 49.9 TPY from "B" Side Slaker Vent. See Appendix B for supportive information.

3.3.2 Short-Term PM Emissions

Short-term baseline PM emissions were calculated in a manner similar to that for short-term SO_2 emissions (see Section 3.2.2). January 29, 1975 operating conditions were selected to represent maximum 24-hour emissions, for the same reasoning as presented in Section 3.2.2 for SO_2 emissions.

To estimate PM emissions from the power boilers due to fuel oil burning on January 29, 1975, the PM emission factors developed for the annual baseline PM emissions estimates (Table 3-8) were used in conjunction with the steam production rates on this date (Table 3-7). Maximum short-term PM emissions developed on this basis for the power boilers are shown in Table 3-10.

For No. 4 Power Boiler, which also burned bark on January 29, 1975, maximum short-term PM emission rates due to bark burning were based upon the actual steam production due to bark on this date. The PM emission factor of 0.62 $lb/10^6$ Btu developed previously for the annual baseline emission calculations and the boiler design rate of 2812 Btu/lb steam were used to

SJP29PM

Table 3-10. Estimated Particulate Matter Emissions From Power Boilers Due to Fuel Oil Burning, January 29, 1975

Power Boiler No.	Average Oil Burned* (gal/hr)	Average Heat Input+ (MM Btu/hr)	PM Emission Factor** (lb/MM Btu)	Average PM (lb/hr)
1	658	98.7	0.097	9.6
2	585	87.8	0.097	8.5
3	611	91.7	0.097	8.9
4	163	24.5	0.097	2.4
5	1,294	194.1	0.072	14.0
6	1,644	246.6	0.041	10.1
7	1,235	185.3	0.095	17.6
8	1,161	174.2	0.056	9.8
Totals	7,351			80.8

* From Table 3-7
\+ Based upon fuel oil heat content of 150,000 Btu/gal
** From Table 3-8

translate steam production into PM emissions (refer to Appendix B for derivation of these factors). From Table 3-5, total steam production due to bark firing in No. 4 Power Boiler on January 29, 1975, was 1,849,000 lb, or an average of 77,042 lb/hr. Associated PM emissions are calculated as 134.3 lb/hr (refer to Appendix C for supportive calculations). Total short-term baseline emissions for No. 4 Power Boiler are the sum of emissions due to fuel oil burning (2.4 lb/hr, see Table 3-10) and bark burning. The resulting emission rate is 136.7 lb/hr.

Maximum short-term PM emissions for Nos. 4, 5 and 6 recovery boilers on January 29, 1975, were estimated using the actual steam production rates for these boilers on this date and the PM emission factors developed for the annual baseline emission calculations. The pertinent data and resulting short-term PM emissions are presented below:

Recovery Boiler	Steam Production (lb)	(avg lb/hr)	BLS Input (avg lb/hr)	PM Emission Factor (lb/1000 lb BLS)	PM Emissions (lb/hr)
No. 4	2,052,000	85,500	31,667	0.13	4.1
No. 5	3,454,000	143,917	53,303	0.11	5.9
No. 6	3,336,000	139,000	51,481	0.15	7.7

For No. 7 Recovery Boiler and No. 7 Smelt Dissolving Tanks, maximum short-term PM emissions are the same as calculated for the annual baseline emission estimates - 118 lb/hr and 3.3 lb/hr, respectively (refer to Appendix B). These emission rates are based upon actual source tests conducted on the boiler and Smelt tanks in 1975 and 1976.

For the slakers, maximum short-term PM emissions were based upon the actual measured PM emissions in 1976, as shown in the operating permit applications for these sources (refer to Appendix B). The PM emissions were 16.3 lb/hr for "A" Side, and 14.6 lb/hr for "B" Side slaker vents.

Maximum production or operating rates for other sources at the mill (smelt dissolving tanks and lime kilns) are not available for January 29, 1975. Therefore, short-term PM emissions were based upon average PM emission rates for each source. The average PM emission rate was based upon the calculated annual baseline PM emissions and the mill operating days for 1974 (336 days). Resulting PM emissions are as follows:

Source	Annual Baseline PM (TPY)	Short-Term Baseline PM (lb/hr)
No. 4 Smelt Dissolving Tank	10.3	2.6
5 Smelt Dissolving Tank	15.2	3.8
6 Smelt Dissolving Tank	14.9	3.7
No. 1 Lime Kiln	16.4	4.1
2 Lime Kiln	16.4	4.1
3 Lime Kiln	16.4	4.1

3.4 SUMMARY

The estimated baseline SO_2 and PM emissions from all baseline sources at SJFP are summarized in Table 3-11. Both annual average and short-term emission rates are presented.

Table 3-11. Summary of Baseline Emissions, SJFP.

Source	SO_2 Emissions Annual (TPY)	SO_2 Emissions Maximum Short-term (lb/hr)	PM Emissions Annual (TPY)	PM Emissions Maximum Short-term (lb/hr)
No. 1 Power Boiler	333	270	11.8	9.6
No. 2 Power Boiler	255	240	9.1	8.5
No. 3 Power Boiler	764	250	27.1	8.9
No. 4 Power Boiler	98	67	583.5	136.7
No. 5 Power Boiler	2,117	530	55.8	14.0
No. 6 Power Boiler	1,561	674	23.4	10.1
No. 7 Power Boiler	1,757	506	61.1	17.6
No. 8 Power Boiler	1,755	476	36.0	9.8
No. 4 Recovery Boiler	453	109	17.0	4.1
No. 5 Recovery Boiler	811	223	21.3	5.9
No. 6 Recovery Boiler	858	232	28.5	7.7
No. 7 Recovery Boiler	1,160	265	516.8	118.0
No. 4 Smelt Dissolving Tank	10	2.5	10.3	2.6
No. 5 Smelt Dissolving Tank	15	3.7	15.2	3.8
No. 6 Smelt Dissolving Tank	15	3.7	14.9	3.7
No. 7 Smelt Dissolving Tank	39	8.8	14.2	3.3
No. 1 Lime Kiln	40	9.9	16.4	4.1
No. 2 Lime Kiln	40	9.9	16.4	4.1
No. 3 Lime Kiln	40	9.9	16.4	4.1
"A" Side Slaker Vent	-	-	55.9	16.3
"B" Side Slaker Vent	-	-	49.9	14.6
Totals	12,121	3,890	1,601.0	407.5

4.0 SJFP PROJECTED EMISSIONS

4.1 FUTURE SJFP OPERATIONS

The basis of future operations of the recovery boilers, smelt dissolving tanks and lime kilns at SJFP are the modifications planned for these sources to comply with the FDER TRS regulations. Construction permit applications have been submitted to FDER for these sources and reflect future maximum operation. The maximum pulp production of the SJFP mill in the future will be 2000 TPD.

Operation of No. 9 Power Boiler at SJFP is not changing from current permitted conditions. Therefore, current maximum permitted limits are the basis for future maximum emissions from the power boiler. Operation of the slaker vents are likewise not changing from current permitted conditions, and maximum future emissions are based upon the current operating permits.

Nos. 1 through 8 Power Boilers at SJFP have all been shutdown and will not operate in the future. These sources therefore are not included in the future emission inventory.

4.2 FUTURE SO_2 AND PM EMISSIONS

Future maximum SO_2 emissions from No. 9 Power Boiler were based upon the current operating permit and the EPA PSD permit issued in 1982. For the recovery boilers, SO_2 emissions were based upon an estimated maximum SO_2 concentration in the flue gases, and the volumetric flow rate corresponding to the maximum design rates of the recovery boilers.

SO_2 emissions from the smelt dissolving tanks and lime kilns were based upon the emission factors for these sources in USEPA Publication AP-42. The maximum future pulp production of 2000 TPD was used to calculate the SO_2 emissions.

Future maximum PM emissions were based upon present permitted limits or limits reflected in the construction permit applications being submitted for compliance with the TRS regulations. The emission rates reflect future maximum operational rates for each source. Continuous, year-around operation was assumed in all annual emission calculations.

Future maximum SO_2 and PM emissions are summarized in Table 4-1. Supporting calculations are presented in Appendix D and Appendix E.

Table 4-1. Maximum Future SO_2 and PM Emissions, SJFP

Source	Maximum SO_2 Emissions (TPY)	Maximum SO_2 Emissions (lb/hr)	Maximum PM Emissions (TPY)	Maximum PM Emissions (lb/hr)
No. 9 Power Boiler	2,649.0	604.8	386.3	88.2
No. 5 Recovery Boiler	1,122.6	256.3	164.3	37.5
No. 6 Recovery Boiler	1,122.6	256.3	164.3	37.5
No. 7 Recovery Boiler	1,513.4	345.5	580.4	132.5
No. 5 Smelt Dissolving Tank	14.6	3.3	24.7	5.6
No. 6 Smelt Dissolving Tank	14.6	3.3	24.7	5.6
No. 7 Smelt Dissolving Tank	43.8	10.0	87.2	19.9
No. 1 Lime Kiln	46.8	10.7	45.1	10.3
No. 2 Lime Kiln	46.8	10.7	45.1	10.3
No. 3 Lime Kiln	46.8	10.7	45.1	10.3
"A" Side Slaker Vent	-	-	112.4	25.7
"B" Side Slaker Vent	-	-	112.4	25.7
Totals	6,621.0	1,511.6	1,792.0	409.1

5.0 SO_2 AIR QUALITY IMPACT ANALYSIS

5.1 INTRODUCTION

Presented in this section is the air quality impact analysis for SO_2 performed for the SJFP facility. The analysis addresses compliance with both the AAQS and the allowable PSD increments for SO_2. These standards and increments are shown in Table 5-1. Compliance with the AAQS are addressed in Section 5.2, and compliance with the PSD Class II and Class I increments are addressed in Section 5.3. These sections present the methodology, data bases, results, and conclusions of the air quality impact analysis.

5.2 COMPLIANCE WITH SO_2 AAQS

5.2.1 Methodology

General Modeling Approach

The general modeling approach followed USEPA and FDER modeling guidelines for determining compliance with AAQS. In general, when model predictions are used to determine compliance with AAQS, current USEPA and FDER policies stipulate that the highest annual average and highest, second-highest short-term (i.e., 24 hours or less) concentrations can be compared to the applicable standard. If concentrations are predicted with only 1 year of meteorological data, the highest short-term concentration calculated among the field of receptors should be compared with the standard. The use of a 5-year meteorological database allows comparison of the predicted highest, second-highest short-term concentrations with short-term ambient standards. The highest, second-highest concentration is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

This approach is consistent with the air quality standards, which permit a short-term average concentration to be exceeded once per year at each receptor.

Table 5-1. Air Quality Standards for SO_2

Standard	Averaging Time Annual (ug/m^3)	24-hour* (ug/m^3)	3-hour* (ug/m^3)
Ambient Air Quality Standard	60	260	1300
PSD Increments			
- Class II	20	91	512
- Class I	2	5	25

* Not to be exceeded more than once per year at any location.

Model predictions for all averaging periods were performed using the Industrial Source Complex Short-Term (ISCST) model. A brief description of the ISCST model is provided below. To develop the maximum short-term concentrations for the SJFP facility, the general modeling approach was divided into screening and refined phases to reduce the computation time required to perform the modeling analysis. In this analysis, the basic differences between the two phases were the receptor grid used when predicting concentrations, the number of sources modeled, and the number of meteorological periods evaluated.

In general, concentrations for the screening phase were predicted using a coarse receptor grid and a 5-year meteorological record. After a final list of highest, second-highest short-term concentrations was developed, the refined phase of the analysis was conducted by predicting concentrations for a refined receptor grid centered on the receptor at which the highest, second-highest concentration from the screening phase was produced. The ISCST model was executed for the meteorological periods during which both the highest and second-highest concentrations were predicted to occur at that receptor, based on the screening phase results. This approach was used to ensure that valid highest, second-highest concentrations were obtained.

Model Selection

The ISCST dispersion model (USEPA, 1986a) was used to evaluate the SO_2 impacts from the SO_2 emission sources considered in the modeling. This model is contained in USEPA's User's Network for Applied Modeling of Air Pollution (UNAMAP), Version 6 (USEPA, 1986b). The ISCST model was selected primarily for the following reasons:

1. USEPA and FDER have approved the general use of the model for air quality dispersion analysis because the model assumptions and methods are consistent with those in the Guideline on Air Quality Models (USEPA, 1986c).
2. The ISCST model is capable of predicting the impacts from stack, area, and volume sources that are spatially distributed over large areas and located in flat or gently rolling terrain.

3. The results from the ISCST model are appropriate for addressing compliance with AAQS.

The ISCST model is an extended version of the single-source (CRSTER) model (USEPA, 1977). The ISCST model is designed to calculate hourly concentrations based on hourly meteorological parameters (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights). The hourly concentrations are processed into non-overlapping short-term periods and an annual average period. For example, a 24-hour average concentration is based on twenty-four 1-hour averages calculated from midnight to midnight of each day. For each short-term averaging period selected, the highest and second-highest average concentrations are calculated for each receptor. As an option, a table of the 50 highest concentrations over the entire field of receptors can be produced.

Major features of the ISCST model are presented in Table 5-2. Concentrations due to stack and volume sources are calculated by the ISCST model using the steady-state Gaussian plume equation for a continuous source. The area source equation in the ISCST model is based on the equation for a continuous and finite crosswind line source.

The ISCST model has rural and urban options which affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground level concentrations. The criteria used to determine when the rural or urban mode is appropriate are based on land use near the proposed plant's surroundings (Auer, 1978). If the land use is classified as heavy industrial, light-moderate industrial, commercial, or compact residential for more than 50 percent of the area within a 3 km radius circle centered on the proposed source, the urban option should be selected. Otherwise, the rural option is more appropriate.

For modeling analyses that will undergo regulatory review, the following model features are recommended by USEPA (1986c) and are referred to as the regulatory options in the ISCST model:

Table 5-2. Major Features of the ISCST Model

ISCST Model Features
o Polar or Cartesian coordinate systems for receptor locations
o Rural or one of three urban options which affect wind speed profile exponent, dispersion rates, and mixing height calculations
o Plume rise due to momentum and buoyancy as a function of downwind distance for stack emissions (Briggs, 1969, 1971, 1972, and 1975)
o Procedures suggested by Huber and Snyder (1976) and Huber (1977) for evaluating building wake effects
o Procedures suggested by Briggs (1974) for evaluating stack-tip downwash
o Separation of multiple point sources
o Consideration of the effects of gravitational settling and dry deposition on ambient particulate concentrations
o Capability of simulating point, line, volume and area sources
o Capability to calculate dry deposition
o Variation with height of wind speed (wind speed-profile exponent law)
o Concentration estimates for 1-hour to annual average
o Terrain-adjustment procedures for elevated terrain including a terrain truncation algorithm
o Consideration of time-dependent exponential decay of pollutants
o The method of Pasquill (1976) to account for buoyancy-induced dispersion
o A regulatory default option to set various model options and parameters to EPA recommended values (see text for regulatory options used)
o Procedure for calm-wind processing

Source: EPA, 1986b

1. Final plume rise at all receptor locations,
2. Stack-tip downwash,
3. Buoyancy-induced dispersion,
4. Default wind speed profile coefficients for rural or urban option,
5. Default vertical potential temperature gradients,
6. Calm wind processing, and
7. A decay half life of 4 hours for SO_2 concentration calculations in urban areas.

In this analysis, the USEPA regulatory options were used to address maximum impacts from the SJFP facility. Based on a review of the land use around the SJFP facility, the rural mode was selected because of the location of St. Joseph Bay adjacent to the facility and low density of residential, industrial and commercial development within 3 km of the facility.

Meteorological Data

Meteorological data used in the ISCST model to determine air quality impacts consisted of a concurrent 5-year period (1965-1969) of hourly surface weather observations from the Tyndall Air Force Base (AFB) near Panama City and upper air data from Eglin AFB in Valparaiso. Tyndall and Eglin AFB are located approximately 40 and 150 km, respectively, to the northwest of the SJFP facility.

Data from these locations were selected for use in the study because these stations are the closest weather stations to the study area with similar surrounding topographical features and land-water boundaries. These stations also have the most readily available and complete databases which are representative of the plant site. Based on discussions with FDER staff, these data are acceptable for analyzing impacts from sources at the SJFP facility.

The hourly surface observations included wind direction, wind speed, temperature, total cloud cover, and cloud ceiling height. The wind speed, total cloud cover, and cloud ceiling values were used in the USEPA meteorological preprocessor program (RAMMET) to determine atmospheric stability using the Turner stability scheme. Although stability is generally determined using opaque cloud cover, the difference between the stability classes estimated with total cloud cover rather than opaque cloud cover is expected to be minimal.

Based on the temperature measurements at Tyndall AFB, morning and afternoon mixing heights were calculated with the radiosonde data at Eglin AFB using the Holzworth approach (1972). Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by USEPA (Holzworth, 1972). The hourly surface data and mixing heights were used to develop a sequential series of hourly meteorological data (i.e., wind direction, wind speed, temperature, stability, and mixing heights). Because the observed hourly wind directions were classified into one of thirty-six 10-degree sectors, the wind directions were randomized within each sector by the RAMMET preprocessing program to account for the expected variability in air flow.

Emission Inventory

The stack, operating and SO_2 emission data for existing and projected sources at SJFP facility are presented in Table 5-3. The SO_2 emission rates are the same as those presented in Table 4-1, Section 4.0. Stack data were obtained from the TRS permit applications and other permit data on file at SJFP.

As indicated in the footnote to Table 5-3, several sources were combined in the screening phase of the analysis to reduce model computation time. In general, sources with similar stack and operating characteristics and located near one another were combined and modeled as a single source. In the refined phase of the analysis, the sources were modeled individually using the individual stack data shown in Table 5-3.

Because there are no other major sources of SO_2 emissions in the vicinity of the SJFP facility that are likely to interact with SJFP's emissions, only SO_2 emissions from the SJFP facility were modeled. Impacts from other

Table 5-3. Stack, Operating and SO_2 Emission Data for Existing and Projected Sources at St. Joe Forest Products

Source	Location (m)*		Stack Data (ft)		Operating Data			SO_2 Emissions	
	X	Y	Height	Diameter	Temperature (°F)	Flow Rate (acfm)	Velocity (ft/sec)	(lb/hr)	(TPY)
No. 9 Power Boiler	13	55	170	14.0	152	391,300	42.4	604.8	2,649.0
No. 5 Recovery Boiler	65	-48	211	8.0	385	153,491	50.9	256.3	1,122.6
No. 6 Recovery Boiler	61	-38	211	8.0	385	153,491	50.9	256.3	1,122.6
No. 7 Recovery Boiler+	0	0	200	8.75	385	230,235	63.8	345.5	1,513.4
Nos. 5 and 6 Smelt Dissolving Tank	27	-53	203	3.75	157	31,920	48.2	6.6	29.2
No. 7 Smelt Dissolving Tank+	23	-69	203	5.5	164	24,210	17.0	10.0	43.8
No. 1 Lime Kiln	147	23	111	4.0	177	32,933	43.7	10.7	46.8
No. 2 Lime Kiln	142	29	111	4.0	177	32,933	43.7	10.7	46.8
No. 3 Lime Kiln	137	34	111	4.0	177	32,933	43.7	10.7	46.8

Note: For the screening analysis, No. 5 and No. 6 Recovery Boilers were combined and modeled at No. 5's location; Smelt Dissolving Tanks were combined and modeled at No. 7's location and operating data; Lime Kilns were combined and modeled at No. 3's location.

* Relative to No. 7 Recovery Boiler.
+ There are two stacks for this source. Stack and operating data are for each stack and emissions are the total from both stacks.

sources were assumed to be included in the background concentration estimated from monitoring data (see discussion below).

Receptor Locations

As discussed previously, the general modeling approach utilized screening and refined phases to address compliance with the AAQS. For the screening phase, concentrations were predicted for 180 receptors located in a radial grid centered on the stack for Recovery Boiler No. 7. Receptors were located along 36 radials, spaced at 10 degree increments at distances of 100, 400, 900, 1400, and 2000 m from the grid center. Although not considered ambient air, concentrations were predicted at some receptors located on plant property. Plant property boundaries for the SJFP facility are shown in Figure 5-1. The distances from Recovery Boiler No. 7 to the nearest off-plant property locations are presented in Table 5-4.
After the screening modeling was completed, refined short-term modeling was conducted using receptor grids centered on the receptor which had the highest, second-highest 3-hour and 24-hour concentrations. Nine (9) receptors were located at intervals of 100 m along each of 7 radials. Radials were spaced at 2 degree increments and were centered on the radial on which the maximum concentration was produced from the screening analysis. For example, if the maximum concentration from the screening analysis was produced along the 90 degree radial at a distance of 0.9 km, the refined receptor grid would consist of receptors at the following locations:

Directions (degrees)	Distance (km)
84, 86, 88, 90, 92, 94, 96	0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, and 1.3 per direction

To ensure that a valid highest, second-highest concentration was calculated, concentrations were predicted for the refined grid for the periods that produced both the highest and second-highest concentration from the screening analysis.

The modeling analysis did not include calculations for the annual averaging period because the concentrations for this averaging period are not expected to vary significantly for the receptor grid used in the analysis.

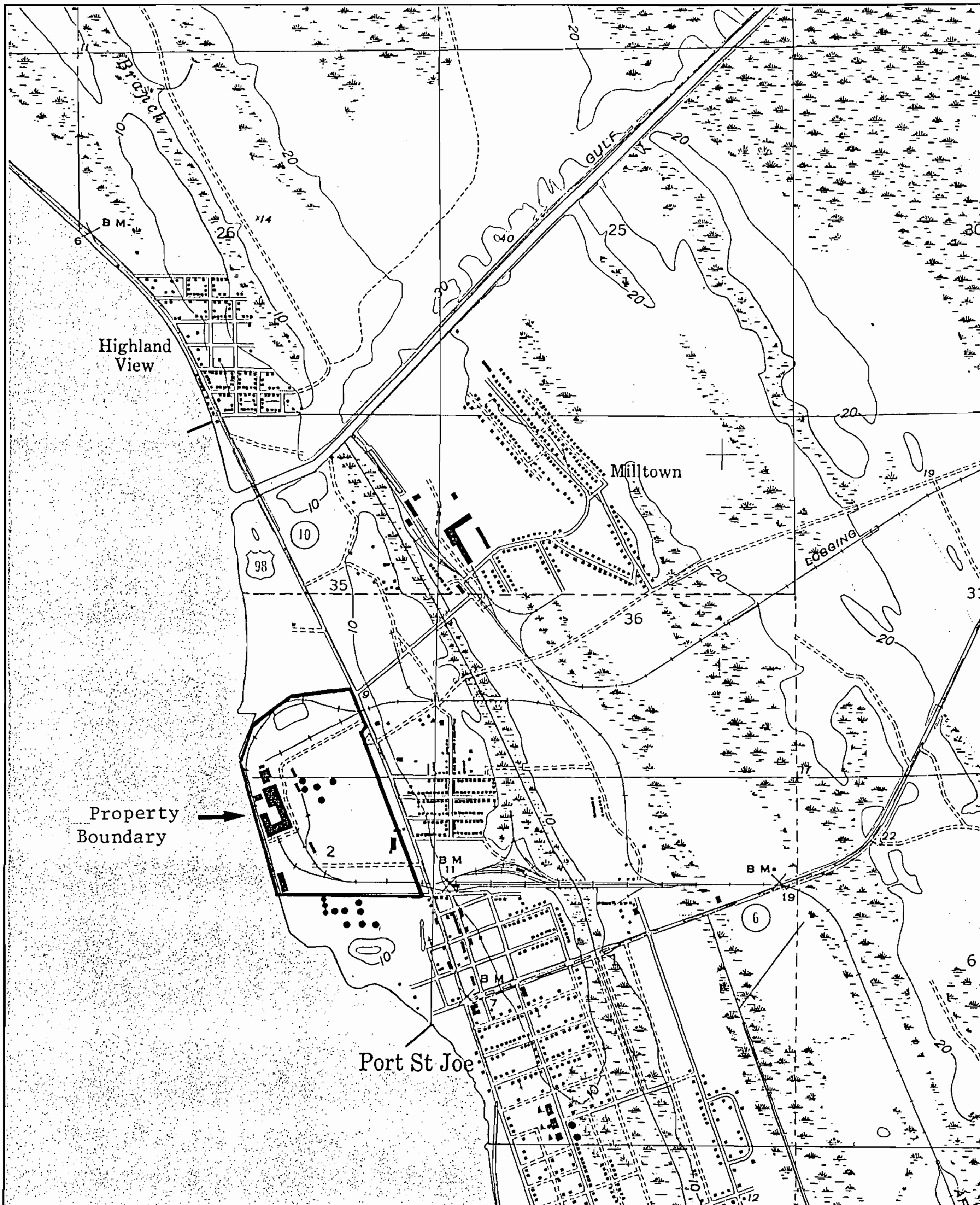

Figure 5-1. SJFP Property Boundaries

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Table 5-4. Approximate Distance from No. 7 Recovery Boiler to SJFP Plant Property Line

Direction	Distance to Plant Property (ft)	(m)	Direction	Distance to Plant Property (ft)	(m)
10	780	238	190	310	95
20	1030	314	200	250	76
30	1220	372	210	190	58
40	1640	500	220	165	50
50	1815	553	230	155	47
60	1815	553	240	150	46
70	1625	495	250	140	43
80	1655	505	260	150	46
90	1750	534	270	155	47
100	1905	581	280	170	52
110	2125	648	290	190	58
120	2405	733	300	220	67
130	2220	677	310	265	81
140	1845	562	320	345	105
150	1625	495	330	375	114
160	1500	457	340	405	123
170	1155	352	350	470	143
180	500	152	360	565	172

Background Concentrations

To estimate total air quality concentrations, a background concentration must be added to the modeling results. The background concentration is considered to be the air quality concentration contributed by sources not included explicitly in the modeling evaluation.

The background concentration used in the modeling analysis was based on a review of 1986 monitoring data reported by the FDER (1987). Based on that review, there are no monitors which measure SO_2 concentrations in Gulf County. The nearest SO_2 monitors to the facility are located in Lynn Haven, Bay County, approximately 60 km to the northwest of the SJFP facility. These monitors are designed to measure impact from the Lansing Smith Power Plant, operated by Gulf Power Company. A summary of the maximum SO_2 concentrations measured at these monitoring sites is presented in Table 5-5. Although these data were collected only from October to December, the maximum concentrations are due to impacts from the power plant's emissions and should be a conservative estimate of background concentrations. For this analysis, the second-highest 24-hour and 3-hour and highest annual average concentrations measured among the four monitoring stations were used to represent background concentrations.

Building Downwash Considerations

Under moderate to strong wind speed conditions, the effluent plume emanating from a stack on or near a building may not totally escape the aerodynamic wake region on the downwind edge of the building. This results in a downwash condition where the effluents are mixed into the wake region. Building shape and orientation to the wind affect the dimensions of the turbulent wake and the degree of downwash. The stack height, building height and width, horizontal wind speed, plume exit velocity, and plume buoyancy determine which portion of the plume, if any, will clear the turbulent wake. Downwash of a plume into the wake is expected under conditions of low effluent velocity relative to the ambient wind speed. A highly buoyant plume would be expected to have a lower tendency to downwash.

Table 5-5. SO_2 Concentrations Measured in 1986 at Monitoring Stations Located in Bay County

Site Number*	Number of Observations+	Measured Concentration (ug/m^3) 3-hour Highest	3-hour Second-Highest	24-hour Highest	24-hour Second-Highest	Annual
2420-002-J02	2113	278	269	100	62	10
2420-003-J02	2071	80	70	27	26	5
2420-004-J02	2091	113	81	27	22	5
2420-005-J02	2117	71	55	20	17	3

* These sites are located in areas to the south, west, north, and east of Gulf Power Company's Lansing Smith Power Plant, Lynn Haven, Florida.

+ Sampling period from October to December.

Based on modeling procedures in the Guideline on Air Quality Models (USEPA, 1986c), USEPA has recommended that the approach developed by Huber and Snyder (1976) and Huber (1977) be used in regulatory applications to address building downwash conditions. This approach has been incorporated in the ISCST model, which is recommended by USEPA in addressing air quality impacts for elevated point sources. For purposes of this analysis, the building downwash option in the ISCST model was used to assess the potential impacts of emissions from the SJFP facility.

The criteria used to address whether building downwash could occur were based on USEPA recommendations (USEPA, 1985) for determining Good Engineering Practice (GEP) stack height. Based on that criteria, if a stack height is less than GEP, then ground-level concentrations produced as a result of atmospheric downwash, eddies, and wakes created by the source itself and nearby structures may occur.

For sources built after January 12, 1979, a GEP stack height means the greater of:

1. 65 m, from ground elevation at the stack base;
2. H + 1.5 L, where H is the height of nearby buildings or structures, and L is the lesser of the height or projected width of the nearby buildings or structures; or
3. height demonstrated by a fluid model or field study.

A nearby building is defined as a building located at a distance up to 5 times the lesser of the height or width of the building, but not greater than 0.8 km from the stack. From a review of the buildings at the SJFP facility and the locations of the existing and proposed stacks (see Figure 5-2), the major nearby buildings at the SJFP facility that could produce building downwash conditions include the following:

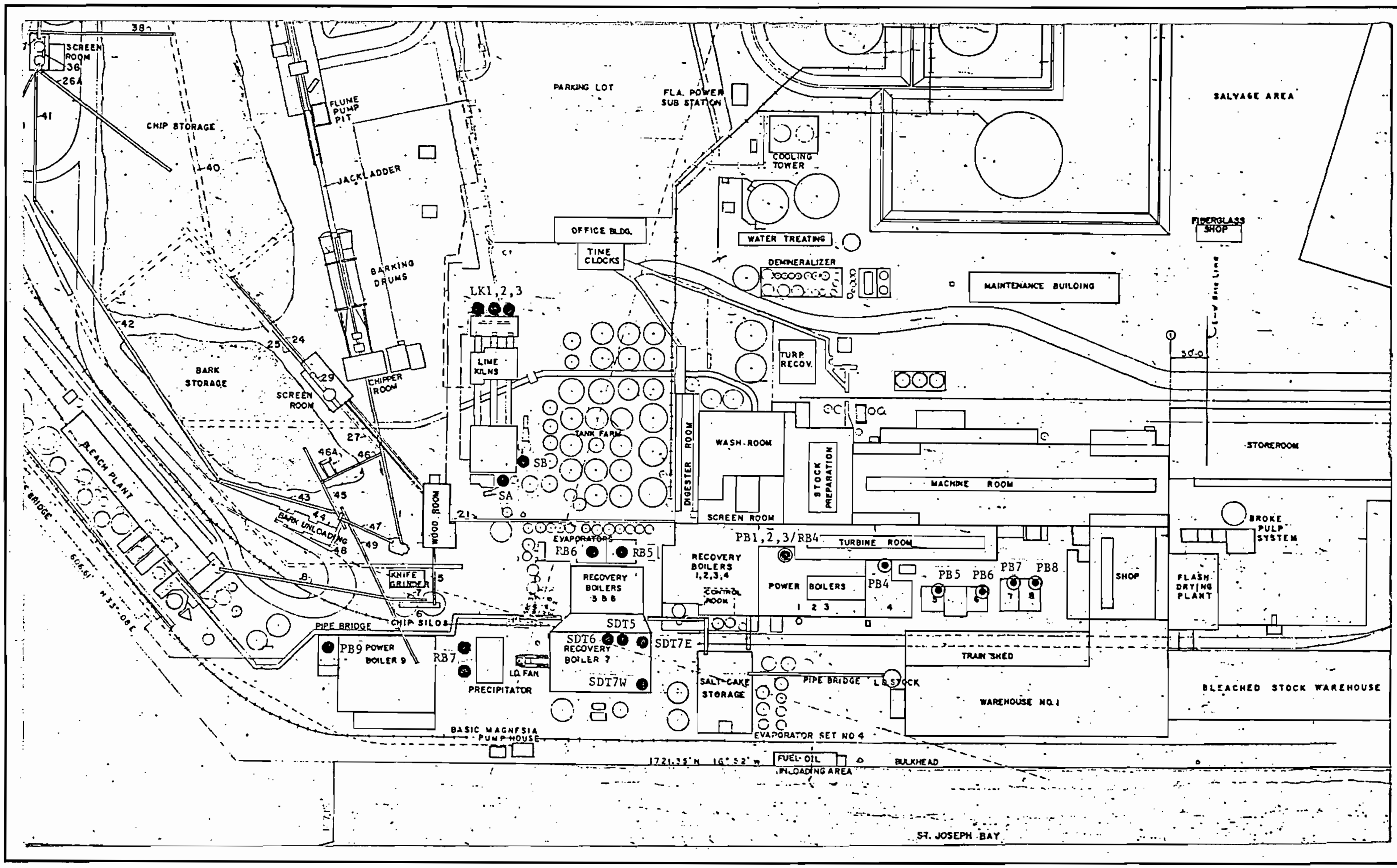

Figure 5-2. Stacks' Locations of SJFP.

Building	Approximate Building Dimensions (ft) Height	Length	Width	Maximum Projected Width (ft)	GEP Height (ft)	Maximum Area of Influence (ft)
No. 9 Power Boiler	136	90	68	113	306	565
No. 7 Recovery Boiler	178	109	76	133	378	665

These structures are located within 500 ft from the sources considered in the modeling. Because the sources have stacks that are less than the GEP height, the potential for building downwash to occur was considered in the refined phase of the analysis. Building downwash conditions were modeled for those periods and receptor locations at which the highest, second-highest 3- and 24- hour concentrations were produced in the screening phase. Other buildings at the facility have lower heights than the buildings for No. 9 Power Boiler and No. 7 Recovery Boiler and are expected to produce no or minimal building downwash effects for sources considered in the analysis.

5.2.2 Results of Modeling Analysis

The predicted maximum SO_2 concentrations from all modeled sources at the SJFP facility for the screening phase of the analysis, added to the background concentration, are presented in Table 5-6. The maximum 3-, 24- hour, and annual average SO_2 concentrations are predicted to be 483, 125, and 17.0 ug/m^3, respectively. These maximum concentrations are well below the 3- and 24- hour AAQS of 1300 and 260 ug/m^3, respectively, not to be exceeded more than once per year, and the annual AAQS of 60 ug/m^3. These maximum concentrations are predicted to occur at locations off of plant property.

Annual average concentrations were not further refined because the magnitude of annual concentrations is not expected to differ significantly from the screening phase results. Based on the results of the screening analysis, the refined modeling analysis was performed to predict maximum SO_2

Table 5-6. Maximum SO_2 Concentrations Predicted in the Screening Phase Due to all Future Sources at SJFP

Averaging Period/ Year	Maximum Concentration (ug/m^3)			Location*		Period	
	Total	Modeled Sources	Back-ground**	Direction (degree)	Distance (km)	Julian Day	Hour Ending
3-Hour Average+							
1965	464	195	269	60	1.4	188	12
1966	453	184	269	60	1.4	245	15
1967	483	214	269	50	0.9	218	15
1968	463	194	269	20	1.4	87	12
1969	468	199	269	60	0.9	195	12
24-Hour Average+							
1965	117	54.7	62	30	1.4	163	-
1966	119	57.1	62	60	1.4	233	-
1967	123	60.9	62	60	0.9	215	-
1968	123	61.1	62	60	1.4	177	-
1969	125	62.9	62	60	1.4	152	-
Annual Average							
1965	15.1	5.1	10	30	1.4	-	-
1966	14.9	4.9	10	70	1.4	-	-
1967	17.0	7.0	10	60	1.4	-	-
1968	16.9	6.9	10	60	1.4	-	-
1969	16.0	6.0	10	60	1.4	-	-

Note: Florida 3- and 24-hour AAQS are 1300 and 260 ug/m^3, respectively, not to be exceeded more than once per year, and annual AAQS is 60 ug/m^3.

* Relative to No. 7 Recovery Boiler.
\+ Highest, second-highest concentration is shown for this averaging period.
** Background concentration estimated from monitoring data.

concentrations, both with and without the effects of building downwash conditions. A summary of the maximum predicted concentrations for the refined phase is presented in Table 5-7. Without building downwash conditions, the maximum 3- and 24- hour average concentrations are 486 and 125 ug/m^3, respectively, which are 37 and 48 percent of the respective AAQS. The contribution of modeled sources to these maximum impacts were 45 and 50 percent of the maximum 3- and 24- hour concentrations, respectively. With building downwash effects considered in the predictions, the maximum 3- and 24- hour average concentrations are 506 and 137 ug/m^3, respectively, which are 39 and 53 percent of the respective AAQS. The modeled sources' impacts were 47 and 54 percent of the maximum 3- and 24- hour concentrations. This analysis demonstrates that SJFP, considering all future SO_2 emission sources emitting at the maximum rates, will comply with the AAQS for SO_2.

5.3 COMPLIANCE WITH SO_2 PSD INCREMENTS

Comparison of the PSD baseline SO_2 emission inventory for SJFP presented in Table 3-1 with the SJFP future SO_2 emission inventory presented in Table 4-1 shows that a significant reduction in SO_2 emissions has occurred since the baseline date. Baseline SO_2 emissions were 12,121 TPY and 3,890 lb/hr (maximum), while future maximum emissions are 6,621 TPY and 1,512 lb/hr. Thus, there has been a decrease of 5,500 TPY and 2,378 lb/hr in SO_2 emissions since the baseline date.

Stack heights overall have increased since the baseline date (see Section 6.0), due to the shutdown of the old power boilers and No. 4 Recovery Boiler, which had short stacks compared to the new No. 9 Power Boiler stack height. There has also been an increase in stack height at several other sources at the facility. Coupled with the significant decrease in SO_2 emissions at the facility, there is no PSD increment consumption for SO_2 due to the SJFP facility. The SO_2 increment should actually be expanded due to these changes at SJFP.

Table 5-7. Maximum 3-Hour and 24-Hour Average SO_2 Concentrations Predicted in the Refined Phase for All Future Sources at SJFP

Averaging Period/ Year		Maximum Concentration (ug/m^3)			Location*		Period		
		Total	Modeled Sources	Back-ground**	Direction (degree)	Distance (km)	Julian Day	Hour Ending	Year
3-Hour	Screening	483	214	269	50	0.9	218	15	1967
	Refined, without building downwash	486	217	269	48	0.8	218	15	1967
	Refined, with building downwash	506	237	269	48	0.8	218	15	1967
24-Hour	Screening	125	62.9	62	60	1.4	152	-	1969
	Refined, without building downwash	125	63.0	62	60	1.4	152	-	1969
	Refined, with building downwash	137	74.5	62	62	1.2	152	-	1969

Note: Florida AAQS are 1300 ug/m^3, 3-hour average, and 260 ug/m^3, 24-hour average, not to be exceeded more than once per year.

* Relative to No. 7 Recovery Boiler.
+ Background concentrations estimated from monitoring data.

6.0 PM(TSP) AIR QUALITY IMPACT ANALYSIS

6.1 INTRODUCTION

The air quality impact analyses of PM(TSP) concentrations to demonstrate compliance with the Florida AAQS and PSD Class I and II increments are presented in this section. AAQS and PSD increments for PM(TSP) were presented in Tables 2-1 and 2-2.

The general modeling methodology used for this analysis is the same as that used in the SO_2 air quality impact analysis presented in Section 5.0. The following sections describe the emission inventory, background concentrations, and receptor locations used to estimate maximum PM(TSP) concentrations.

6.2 METHODOLOGY

6.2.1 Emission Inventory

The stack, operating, and PM(TSP) emission data for PSD baseline sources and for all future sources at the SJFP facility are presented in Tables 6-1 and 6-2, respectively. PM(TSP) emissions data for each source are the same as those presented in Table 3-1 for baseline sources and Table 4-1 for all future sources. Stack and operating data for all baseline and future sources were based upon current and previous permit applications and other information on file at SJFP. It is noted that the emission inventory for future sources at SJFP (Table 6-2) incorporates one change that is not reflected in the current permits for the facility. Based upon an initial evaluation, it was determined from model predictions that the "A" Side and "B" Side Slaker vents, at the present stack heights (approximately 60 ft) and emitting PM(TSP) at the maximum allowable levels, have the potential to cause impacts above the AAQS. Although the slaker vents are believed to emit at lower levels than allowed, SJFP desires to raise the stacks on these two sources to 90 feet to allow SJFP to retain their allowable emission limits. The emission inventory for all future sources reflects this increased stack height for the slaker vents.

For addressing compliance with the Florida AAQS, sources to be operated in the future at SJFP were modeled. For addressing compliance with PSD Class I

Table 6-1. Stack, Operating and PM(TSP) Emission Data for PSD Baseline Sources at St. Joe Forest Products

Source	Location (m)* X	Location (m)* Y	Stack Data (ft) Height	Stack Data (ft) Diameter	Operating Data Temperature (°F)	Operating Data Flow Rate ACFM	Operating Data Velocity (ft/sec)	PM Emissions (lb/hr)	PM Emissions (TPY)
No. 1,2,3 Power Boiler, No. 4 Recovery Boiler	84	-114	200	13.25	414	344,300	41.6	31.1	65.0
No. 4 Power Boiler	91	-152	114	6.0	350	107,800	63.6	136.7	583.5
5	90	-179	83	6.96	300	67,151	29.5	14.0	55.8
6	93	-198	83	6.96	300	68,121	29.9	10.1	23.4
7	101	-210	88	7.50	300	102,984	38.9	17.6	61.1
8	103	-217	88	7.50	283	91,850	34.7	9.8	36.0
No. 5 Recovery Boiler	65	-48	125	8.33	280	122,404	37.4	5.9	21.3
6	61	-38	125	8.33	295	144,894	44.3	7.7	28.5
7+	0	0	200	8.75	280	240,929	66.8	118.0	516.8
No. 4 Smelt Dissolving Tank	84	-114	125	2.94	240	10,835	26.6	2.6	10.3
5	29	-57	125	3.5	176	8,700	15.1	3.8	15.2
6	27	-53	125	3.5	180	10,100	17.5	3.7	14.9
7 East	23	-69	203	5.5	155	26,374	18.5	1.7	7.1
West	23	-69	203	5.5	180	19,958	14.0	1.7	7.1
No. 1 Lime Kiln	147	23	66	3.17	155	26,536	56.2	4.1	16.4
2	142	29	66	3.17	163	29,649	62.8	4.1	16.4
3	137	34	66	3.17	172	29,421	62.3	4.1	16.4
"A" Side Slaker	76	10	58	2.0	180	3,447	18.3	16.3	55.9
"B"	88	2	62	2.0	180	3,211	17.1	14.6	49.9

Note: For the screening analysis, Nos. 5 and 6 Power Boiler were combined and modeled at No. 5's location; Nos. 7 and 8 Power Boiler were combined and modeled at No. 8's location; A and B Side Slakers were combined and modeled at B's location. Nos. 5 and 6 Recovery Boiler, the Smelt Dissolving Tanks, and the Lime Kilns were not modeled in the screening analysis.

* Relative to No. 7 Recovery Boiler.
+ There are two stacks for this source. Stack and operating data are for each stack and emissions are the total from both stacks.

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Table 6-2. Stack, Operating and PM(TSP) Emission Data for All Future Projected Sources at St. Joe Forest Products

Source	Location (m)*		Stack Data (ft)		Operating Data			PM Emissions	
	X	Y	Height	Diameter	Temperature (^{o}F)	Flow Rate (acfm)	Velocity (ft/sec)	(lb/hr)	(TPY)
No. 9 Power Boiler	13	55	170	14.0	152	391,300	42.4	88.2	386.3
No. 5 Recovery Boiler	65	-48	211	8.0	385	153,491	50.9	37.5	164.3
No. 6 Recovery Boiler	61	-38	211	8.0	385	153,491	50.9	37.5	164.3
No. 7 Recovery Boiler+	0	0	200	8.75	385	230,235	63.8	132.5	580.4
Nos. 5 and 6 Smelt Dissolving Tank	27	-53	203	3.75	157	31,920	48.2	11.2	49.4
No. 7 Smelt Dissolving Tank+	23	-69	203	5.5	164	24,210	17.0	19.9	87.2
No. 1 Lime Kiln	147	23	111	4.0	177	32,933	43.7	10.3	45.1
No. 2 Lime Kiln	142	29	111	4.0	177	32,933	43.7	10.3	45.1
No. 3 Lime Kiln	137	34	111	4.0	177	32,933	43.7	10.3	45.1
"A" Side Slaker	76	10	90	2.0	180	1,400	7.4	25.7	112.4
"B" Side Slaker	88	2	90	2.0	180	1,400	7.4	25.7	112.4

Note: For the screening analysis, No. 5 and No. 6 Recovery Boilers were combined and modeled at No. 5's location; Smelt Dissolving Tanks were combined and modeled at No. 7's location and operating data; Lime Kilns were combined and modeled at No. 3's location; Side Slakers A and B were combined and modeled at Slaker B's location.

* Relative to No. 7 Recovery Boiler.
\+ There are two stacks for this source. Stack and operating data are for each stack and emissions are the total from both stacks.

and II increments, both the baseline and projected sources were modeled with the baseline sources' emissions modeled as negative values. As indicated in Tables 6-1 and 6-2, sources were combined or not modeled in the screening phase of the analysis to reduce the model computation time. In general, sources with similar stack and operating characteristics which were located near one another were combined and modeled as one source. Several sources in the baseline inventory were not modeled because they exhibited minimal emissions and were not expected to significantly affect the maximum predicted PSD concentrations. In the refined phase of the analysis, all sources were modeled individually using the data shown in Tables 6-1 and 6-2.

6.2.2 Receptor Locations

The general modeling approach incorporated screening and refined phases to address compliance with the AAQS and PSD Class I and II increments. For the screening phase, concentrations were predicted for 180 receptors located in a radial grid centered on the stack for No. 7 Recovery Boiler. Receptors were located along 36 radials, spaced at 10 degree increments at distances of 125, 175, 300, 600 and 1000 m from the grid center. These distances are different from those used in the SO_2 impact analysis because several PM(TSP) sources which have low stack heights and higher PM(TSP) emissions relative to SO_2 emissions were expected to produce maximum concentrations generally within 1,000 m from No. 7 Recovery Boiler.

For both the AAQS and PSD Class II increment analyses, only receptors located off of plant property in areas considered as ambient air were considered. The distances from No. 7 Recovery Boiler to the nearest off-plant property locations around the facility were shown in Table 5-3. After the screening analysis was completed, refined short-term modeling was conducted using the same modeling approach discussed in Section 5.2.1.

For the PSD Class I increment analysis, concentrations were predicted along radials located in directions towards the two PSD Class I areas that are within 100 km of the SJFP facility. The Bradwell Bay National Wilderness Area (NWA) is located approximately 75 to 80 km to the east-northeast of the facility (i.e., directions of 55 to 65 degrees), while the St. Marks NWA is located approximately 80 km to the east-northeast (i.e., directions of 72 to 74 degrees). In this analysis, receptors were located at 75 km along 7 radials in directions of 50, 54, 58, 62, 66, 70, and 74 degrees from the SJFP facility. Because of the large distance between the SJFP facility and the PSD Class I areas, refined modeling was not performed because maximum concentrations are not expected to be significantly different from those produced in the screening phase of the analysis.

6.2.3 Background Concentrations

The background PM(TSP) concentration (i.e., impacts from sources not modeled in the analysis) is added to the maximum predicted concentration from modeled sources to produce a total concentration for comparison to the AAQS. Similar to the SO_2 air quality analysis, background concentrations were developed from ambient monitoring data available from the FDER.

Based on a review of 1986 monitoring data reported by the FDER, there is one monitor which measures PM(TSP) concentrations in Port St. Joe. This monitor is located approximately 2 km to the northeast of the SJFP facility. A summary of the maximum PM(TSP) concentrations measured at this site is presented in Table 6-3. The measured second highest 24-hour and annual average concentrations of 72 and 29 ug/m^3, respectively, are well below the Florida 24-hour and annual AAQS of 150 and 60 ug/m^3, respectively. For this analysis, the annual average concentration of 29 ug/m^3 was used to represent the 24-hour and annual average background concentrations. This is a conservative estimate of background concentrations because the measured annual concentration would reflect TSP impacts from the sources at the SJFP facility.

6.3 RESULTS OF PM(TSP) MODELING ANALYSIS

The predicted maximum PM(TSP) concentrations due to all modeled sources at the SJFP facility for the screening phase of the analysis, added to a background concentration, are presented in Table 6-4. The maximum 24-hour and annual average concentrations are predicted to be 121.2 and 38.7 ug/m^3, respectively. These maximum concentrations are well below the 24-hour AAQS

Table 6-3. Maximum PM(TSP) Concentrations Measured in 1986 at the Monitoring Station in Gulf County

Site Number	Location	Number of Observations	Measured Concentration (ug/m^3) 24-Hour Highest	Second-Highest	Annual (Geometric Mean)
3740-001-F01	Sewage Treatment Plant, Port St. Joe	49	82	72	29

Table 6-4. Maximum PM(TSP) Concentrations Predicted in the Screening Phase Due to all Future Sources at SJFP

Averaging Period/ Year	Maximum Concentration (ug/m^3)			Location*		Period
	Total	Modeled Sources	Background**	Direction (degree)	Distance (km)	Julian Day
24-Hour Average+						
1965	95.1	66.8	29	60	0.6	187
1966	112.1	83.1	29	20	0.3	229
1967	121.2	92.2	29	40	0.6	178
1968	110.1	81.1	29	190	0.3	244
1969	113.0	84.0	29	210	0.175	241
Annual Average						
1965	36.5	7.5	29	40	0.6	-
1966	36.2	7.2	29	230	0.3	-
1967	38.7	9.7	29	60	0.6	-
1968	37.8	8.8	29	70	0.6	-
1969	38.7	9.7	29	230	0.3	-

Note: Florida 24-hour AAQS is 150 ug/m^3, respectively, not to be exceeded more than once per year, and annual AAQS is 60 ug/m^3.

* Relative to No. 7 Recovery Boiler.

\+ Highest, second-highest concentration is shown for this averaging period.

** Background concentration estimated from monitoring data.

of 150 ug/m^3, not to be exceeded more than once per year, and the annual AAQS of 60 ug/m^3.

Based on the results of the screening analysis, the refined modeling analysis was performed to predict maximum 24-hour PM(TSP) concentrations, both with and without the effects of building downwash. Annual average concentrations were not further refined because the magnitude of annual concentrations is not expected to differ significantly from the screening phase results.

A summary of the maximum predicted 24-hour PM(TSP) concentrations from the refined phase of the analysis is presented in Table 6-5. Without building downwash conditions, the maximum 24-hour average concentrations is 132 ug/m^3, which is 88 percent of the AAQS. Modeled sources accounted for 78 percent of the maximum impact concentration. With building downwash conditions considered, the maximum 24-hour average concentration is 144 ug/m^3, which is 96 percent of the AAQS. The modeled sources' impacts accounted for 80 percent of the maximum predicted concentration.

Maximum predicted PM(TSP) concentrations due to all PSD increment expanding and consuming sources, from the screening analysis, are presented in Table 6-6. The maximum 24-hour and annual average concentrations are predicted to be 27.6 and 4.2 ug/m^3, respectively. These maximum concentrations are below the 24-hour and annual PSD Class II increments of 37 and 19 ug/m^3, respectively. Similar to the AAQS analysis, the refined modeling was performed to predict maximum 24-hour PM(TSP) concentrations, both with and without the effects of building downwash conditions. A summary of the refined maximum predicted 24-hour PM(TSP) increment consumption concentration is presented in Table 6-7. Without building downwash conditions, the maximum 24-hour average concentration is predicted to be 15.2 ug/m^3, which is 42 percent of the PSD Class II increment. By including the effects of building downwash, the maximum predicted concentration is 31.3 ug/m^3, which is 85 percent of the PSD Class II increment.

Table 6-5. Maximum 24-Hour Average PM(TSP) Concentrations Predicted in the Refined Phase for All Future Sources at SJFP

Analysis	Maximum Concentration ($\mu g/m^3$)			Location*		Period	
	Total	Modeled Sources	Back-ground**	Direction (degree)	Distance (km)	Julian Day	Year
Screening	121.2	92.2	29	40	0.6	178	1967
Refined, without building downwash	132.0	103.0	29	34	0.5	330	1967
Refined, with building downwash	144.0	115.0	29	36	0.5	178	1967

Note: Florida 24-hour AAQS is 150 $\mu g/m^3$, not to be exceeded more than once per year.

* Relative to No. 7 Recovery Boiler.
+ Background concentrations estimated from monitoring data.

Table 6-6. Maximum PM(TSP) Concentrations Predicted in the Screening Phase for Comparison to PSD Class II Increments

Averaging Period/ Year	Maximum Concentration (ug/m^3)	Location* Direction (degree)	Location* Distance (km)	Period Julian Day
24-Hour Average+				
1965	24.5	40	0.6	127
1966	23.4	70	0.6	290
1967	27.6	60	0.6	219
1968	25.6	70	0.6	152
1969	27.5	210	0.3	271
Annual Average				
1965	2.6	40	0.6	-
1966	2.8	200	0.6	-
1967	4.2	60	0.6	-
1968	3.3	60	0.6	-
1969	3.6	210	0.6	-

Note: PSD Class II 24-hour increment is 37 ug/m^3, not to be exceeded more than once per year, and annual increment is 19 ug/m^3.

* Relative to No. 7 Recovery Boiler.
\+ Highest, second-highest concentrations are shown for this averaging period.

Table 6-7. Maximum 24-Hour Average PM(TSP) Concentrations Predicted in the Refined Phase for Comparison to PSD Class II Increments

Averaging Period	Analysis	Maximum Concentration (ug/m^3)	Location*		Period	
			Direction (Degrees)	Distance (km)	Julian Day	Year
24-Hour	Screening	27.6	60	0.6	219	1967
	Refined, without building downwash	15.2	62	0.5	219	1967
	Refined, with building downwash	31.3	62	0.5	145	1967

Note: PSD Class II 24-hour increment is 37 ug/m^3, not to be exceeded more than once per year.

* Relative to No. 7 Recovery Boiler.

For comparison to the maximum allowable PSD Class I increments, the maximum predicted concentrations due to all PSD sources, based upon the screening analysis, are presented in Table 6-8. The maximum 24-hour and annual average concentrations are predicted to be 0.18 and 0.003 ug/m^3, respectively. These maximum predicted concentrations are well below the 24-hour and annual PSD Class I increments of 10 and 5 ug/m^3, respectively. Because the maximum predicted concentrations are very low compared to the PSD Class I increments, no refined modeling analysis was performed.

6.4 PM10 AIR QUALITY STANDARDS

PM10 represents that portion of PM(TSP) which exhibits an aerodynamic particle size diameter of 10 um or less. In July 1987, USEPA promulgated national AAQS for PM10, and rescinded the national AAQS for PM(TSP). The levels for both the primary and secondary AAQS were set at 50 ug/m^3, annual arithmetic mean, and 150 ug/m^3, maximum 24-hour concentration. The impact analysis presented previously for PM(TSP) demonstrated that maximum PM(TSP) concentrations, considering all future sources at SJFP, will be 38.7 ug/m^3, annual average, and 144 ug/m^3, 24-hour maximum. These predicted maximum levels of PM(TSP) are below the PM10 AAQS. Since PM10 emissions will always be less than or equal to PM(TSP) emissions from stationary sources, the PM(TSP) air quality analysis also demonstrates that the PM10 AAQS will not be exceeded due to emissions from SJFP.

Table 6-8. Maximum PM(TSP) Concentrations Predicted in the Screening Phase for Comparison to PSD Class I Increments

Averaging Period/ Year	Maximum Concentration (ug/m^3)	Location* Direction (degree)	Period Julian Day
24-Hour Average+			
1965	0.06	50	164
1966	0.15	50	148
1967	0.10	75	182
1968	0.12	58	342
1969	0.18	58	185
Annual Average			
1965	0.001	50	-
1966	0.002	50	-
1967	0.002	66	-
1968	0.003	58	-
1969	0.003	54	-

Note: PSD Class I 24-hour increment is 10 ug/m^3, not to be exceeded more than once per year, and annual increment is 5 ug/m^3.

* All receptor points located 75 km from No. 7 Recovery Boiler, and at indicated direction.

+ Highest, second-highest concentrations are shown for this averaging period.

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APPENDIX A

Calculations and Supportive Information -

Annual Baseline SO_2 Emissions

I. POWER BOILERS

Example SO_2 calculation - Power Boiler No. 1:

SO_2 Emission Factor from AP-42, Section 1.3 (10/86):

157 S lb/1000 gal, where S = fuel sulfur content

1975 actual fuel sulfur content = 2.61%

157 (2.61) = 409.8 lb/1000 gal

1974 actual fuel usage in Power Boiler No. 1: 1,624,020 gal

1974 actual SO_2 emissions:

1,624,020 gal x 409.8 lb/1000 gal / 2000 lb/ton = 333 TPY

II. RECOVERY BOILERS

A. No. 4 Recovery Boiler

From 3/1/71 Application to Operate:

835,095 lb/day BLS

94,000 lb/hr steam

SO_2 - 2881 lb/day

lb SO_2/lb steam = 2881 lb/day / 24 hr/day / 94,000 lb/hr steam
= 0.00128

Actual annual (1974) steam production = 707.830 x 10^6 lb/yr

Actual annual (1974) SO_2 emissions:

707.830 x 10^6 lb/yr x 0.00128 lb SO_2/lb steam / 2000 lb/ton
= 453 TPY

B. No. 5 Recovery Boiler

From 2/12/75 Application to Operate:

866,546 lb/day BLS

97,472 lb/hr steam

SO_2 - 151 lb/hr

lb SO_2/lb steam = 151 / 97,472 = 0.00155

Actual annual (1974) steam production = 1,046.957 x 10^6 lb/yr

Actual annual (1974) SO_2 emissions:

1,046.957 x 10^6 x 0.00155 / 2000 = 811 TPY

C. No. 6 Recovery Boiler

From 2/12/75 Application to Operate:

778,149 lb/day BLS

87,319 lb/hr steam

SO_2 - 146 lb/hr

lb SO_2/lb steam = 146 / 87,319 = 0.00167

Actual annual (1974) steam production = 1,027.460 x 10^6 lb/yr

Actual annual (1974) SO_2 emissions:

1,027.460 x 10^6 x 0.00167 / 2000 = 858 TPY

D. No. 7 Recovery Boiler

SO_2 concentration in stack gases based upon November 1984

stack test: 208 ppm, dry

31% H_2O

277 °F

From 5/26/75 particulate matter stack test:

240,929 acfm @ 121,000 lb/hr BLS

Using above data, calculate emission factor (lb SO_2/lb BLS):

SO_2 (lb/hr):

PVC = mRT

m = PVC/RT

$$V = 240{,}929 \text{ acfm } (1 - 0.31) \frac{(68 + 460)^\circ R}{(277 + 460)^\circ R}$$

$$= 119{,}100 \text{ dscfm}$$

$$m = 2{,}116.8 \frac{lb_f}{ft^2} \times 119{,}100 \frac{ft^3}{min} \times \frac{208}{10^6} \times \frac{64\ lb_m\text{-}^\circ R}{1545\ ft\text{-}lb_f} \times \frac{1}{528^\circ R} \times \frac{60\ min}{hr}$$

$$= 247 \text{ lb/hr } SO_2$$

lb SO_2/lb BLS = 247 / 121,000 = 0.0020 lb SO_2/lb BLS

From 7/23/75 Application to Operate:

Design: 132,500 lb/hr BLS

490,000 lb/hr steam

lb steam/lb BLS (design) = 490,000 lb/hr / 132,500 = 3.70

lb SO_2/lb steam = 0.0020 lb SO_2/lb BLS / 3.70 lb steam/lb BLS

= 0.00054 lb SO_2/lb steam

Design SO_2 emissions:

Maximum hourly -

490,000 lb/hr steam x 0.00054 lb SO_2/lb steam = 264.6 lb/hr

Maximum annual -

490,000 lb/hr steam x 8,760 hr/yr = 4,292.4 x 10^6 lb/yr steam

4,292.4 x 10^6 lb/yr steam x 0.00054 / 2000 = 1160 TPY

III. SMELT DISSOLVING TANKS

A. Nos.4, 5 and 6 Smelt Dissolving Tanks

SO_2 emissions based upon current AP-42 Factor, Section 10.1 (10/86):

0.2 lb/ton air dried unbleached pulp (ADUP)

1974 actual pulp production = 404,114 tons

1974 actual SO_2 emissions (total all smelt tanks)=

404,114 x 0.2 / 2000 = 40 TPY

Distribute total SO_2 among smelt tanks on basis of annual steam production in associated recovery boiler:

Recovery Boiler	Annual Steam Production (10^6 lb/yr)	Percent of total steam	SO_2 Emissions (TPY)
No. 4	707.830	25.4%	10
No. 5	1,046.957	37.6%	15
No. 6	1,027.460	36.9%	15
Totals	2,782.247	100.0%	40

B. No. 7 Smelt Dissolving Tanks

The AP-42 factor is in terms of lb/ton ADUP. To estimate the maximum SO_2 emissions from the No. 7 Smelt Dissolving Tanks, the equivalent pulp production must be estimated. SJFP currently uses a conversion factor of 2000 lb pulp/3000 BLS. From the July 1975 Application to Operate for No. 7 Recovery Boiler, the design rate of the boiler was 132,500 lb/hr BLS. SO_2 emissions are therefore calculated as:

132,500 lb/hr BLS x 2000 lb pulp/3000 lb BLS / 2000 lb/ton=

44.17 tons/hr ADUP

44.17 tons/hr x 0.2 lb/ton = 8.83 lb/hr

8.83 lb/hr x 8,760 hr/yr / 2000 lb/ton = 39 TPY

IV. LIME KILNS

A. Nos. 1, 2 and 3 Lime Kilns

SO_2 emissions based upon current AP-42 factor, Section 10.1 (10/86):

0.3 lb/ton ADUP

1974 Actual SO_2 Emissions:

404,114 tons ADUP x 0.3 / 2000 = 61 TPY

Equivalent SO_2 due to increased pulp production resulting from No.7 Recovery Boiler operation:

44.17 tons/hr ADUP x 0.3 lb/ton = 13.3 lb/hr

13.3 lb/hr x 8,760 hr/yr / 2000 lb/ton = 58 TPY

Total Baseline SO_2 emissions = 61 TPY + 58 TPY = 119 TPY

Lime Kiln production data were not available on a per kiln basis. Therefore, the total emissions were distributed evenly between each kiln:

No. 1 Lime Kiln - 40 TPY

No. 2 Lime Kiln - 40 TPY

No. 3 Lime Kiln - 40 TPY

APPENDIX B

Calculations and Supportive Information -
Annual Baseline PM Emissions

I. POWER BOILERS

A. Oil Firing in Power Boilers

Example Calculation: No.7 Power Boiler

1. Derivation of PM Emission Factor

From 1974 stack test:

Heat input = 4,561 x 10^6 Btu/day = 190.0 x 10^6 Btu/hr

PM emissions = 435 lb/day = 18.1 lb/hr

PM emission factor = 18.1 / 190.0 = 0.095 lb/10^6 Btu

2. Calculation of Annual PM Emissions

1974 Fuel usage = 8,577,252 gal

Assume 150,000 Btu/gal for No.6 fuel oil

Heat input = 8,577,252 x 150,000 = 1,286,588 x 10^6 Btu/yr

Annual PM emissions:

1,286,588 x 10^6 Btu/hr x 0.095 lb/10^6 Btu / 2000 lb/ton

= 61.1 TPY

B. Bark Firing in No.4 Power Boiler

1. Derivation of PM Emission Factor

From 1974 stack test:

Heat input = 122 x 10^6 Btu/hr

PM emissions = 1,812 lb/day = 75.5 lb/hr

PM emission factor = 75.5 / 122 = 0.62 lb/10^6 Btu

2. Calculation of Annual PM Emissions

1974 steam production due to bark: 665,480,000 lb

From 1971 Application to Operate:

100,965 lb/hr steam @ 283.9 x 10^6 Btu/hr

Btu/lb steam = 283.9 x 10^6 / 100,965 = 2,812

Heat input due to bark:

665,480,000 lb steam x 2812 Btu/lb steam =

1,871,330 x 10^6 Btu/yr

Annual PM Emissions:

1,871,330 x 10^6 x 0.62 lb/10^6 / 2000 = 580 TPY

II. RECOVERY BOILERS

A. No. 5 Recovery Boiler

1974 Stack Test:

PM Emissions = 50.43 lb/day = 2.10 lb/hr

BLS input = 473,671 lb/day = 19,736 lb/hr

PM Emission factor = 2.1 / 19,736 = 0.11 lb/1000 lb BLS

Annual PM Emissions:

1974 Steam production = 1,046,957,000 lb

From 2/12/75 Application to Operate:

97,472 lb/hr steam @ 866,546 lb/day BLS

= 2.7 lb stm/lb BLS

Equivalent BLS input =

1,046,957,000 lb steam / 2.7 lb steam/lb BLS

= 387.8 x 10^6 lb/yr

PM Emissions: 387.8 x 10^6 lb BLS/yr x 0.11 lb/1000 lb BLS / 2000

= 21.3 TPY

B. No. 6 Recovery Boiler

1974 Stack test:

PM Emissions = 89.54 lb/day = 3.73 lb/hr

BLS input = 589,928 lb/day = 24,580 lb/hr

PM Emission Factor = 3.73 / 24,580 = 0.15 lb/1000 lb BLS

Annual PM Emissions:

1974 Steam production = 1,027,460,000 lb

From 2/12/75 Application to Operate:

87,319 lb/hr steam @ 778,149 lb/day BLS = 2.7 lb stm/lb BLS

Equivalent BLS input = 1,027,460,000 lb stm / 2.7 lb stm/lb BLS

= 380.5 x 10^6 lb/yr

PM Emissions = 380.5 x 10^6 lb BLS/yr x 0.15 lb/1000 lb BLS / 2000

= 28.5 TPY

C. No. 4 Recovery Boiler

No stack test performed on this boiler in baseline period. However, this boiler is of same design as No. 5 and No. 6 Recovery Boiler, and has similar PM control equipment (ESP and demister pad). Therefore, the average PM emission factor from the 1974 PM stack tests on Nos. 5 and 6 Recovery Boilers was used to estimate PM emissions:

$(0.11 + 0.15) / 2 = 0.13$ lb/1000 lb BLS

Annual PM Emissions:

1974 Steam production = 707,830,000 lb

From 3/1/71 Application to Operate:

94,000 lb/hr steam @ 835,095 lb/day BLS

= 2.7 lb steam/lb BLS

Equivalent BLS input = 707,830,000 / 2.7 = 262.2×10^6 lb/yr

PM Emissions = $262.2 \times 10^6 \times 0.13/1000 / 2000 = 17.0$ TPY

D. <u>No.7 Recovery Boiler</u>

From 7/23/75 Application to Operate and PM test of 5/26/75:

Actual PM = 2832 lb/day = 118 lb/hr

[Note: allowable PM was 132.5 lb/hr]

118 lb/hr x 8,760 hr/yr / 2000 lb/ton = 516.8 TPY

III. SMELT DISSOLVING TANKS

A. Nos. 4, 5 and 6 Smelt Dissolving Tanks

Emissions based upon AP-42 factor, Section 10.1 (10/86):

0.2 lb/ton ADUP when scrubber employed to control PM emissions

1974 Actual pulp production = 404,114 tons

1974 Actual emissions (total all smelt tanks):

404,114 tons x 0.2 lb/ton / 2000 lb/ton = 40.4 TPY

Total PM Emissions distributed based upon steam production of recovery boilers (see Appendix A, Item III.A.):

No. 4 Recovery Boiler - 25.4% = 10.3 TPY

No. 5 Recovery Boiler - 37.6% = 15.2 TPY

No. 6 Recovery Boiler - 36.9% = 14.9 TPY

B. No. 7 Smelt Dissolving Tanks

From 09/03/76 Application to Operate and 7/30/76 PM stack test:

Actual PM Emissions = 78.08 lb/day = 3.25 lb/hr

Actual PM = 3.25 lb/hr x 8,760 hr/yr / 2000 lb/ton = 14.2 TPY

IV. LIME KILNS

1974 Stack tests:

No. 1 Lime Kiln - 15.88 tons/hr input rate, 10.24 lb/hr PM

lb/ton = 0.64

No. 2 Lime Kiln - 13.14 tons/hr input rate, 7.13 lb/hr PM

lb/ton = 0.54

No. 3 Lime Kiln - 13.21 tons/hr input rate, 17.17 lb/hr PM

lb/ton = 1.30

Annual PM Emissions:

Lime Production for each kiln in 1974 is not available; therefore, average emission factor used to calculate total PM emissions;

Avg. lb/ton = (0.64 + 0.54 + 1.30)/3 = 0.83 lb/ton input

Total 1974 lime production = 142,251,000 lb = 71,126 tons

Emission factor is in terms of lb/ton input to lime kilns; therefore must relate input to lime production. Based upon December 1975 operating permit applications, all three kilns designed for lime production equal to 60% of input rate.

Adjusted emission factor is:

0.83 lb/ton input x ton input/0.6 tons lime

= 1.38 lb/ton lime produced

Total PM Emissions = 71,126 tons lime x 1.38 lb/ton / 2000 lb/ton

= 49.1 TPY

Emissions distributed equally between all three kilns:

Each kiln = 49.1 TPY / 3 = 16.4 TPY

V. SLAKER VENTS

Baseline emissions based upon October 1976 Application to Operate, which gave actual PM emissions from "A" Side Slaker Vent as 16.3 lb/hr and 55.9 TPY, and from "B" Side Slaker Vent as 14.6 lb/hr and 49.9 TPY. These emission estimates were based upon PM tests conducted in October 1976.

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 3   Date 11-5-74   Time 9:30 A.m.

Analyst Britt + Taylor   Fuel Oil

STACK CONDITIONS:

Gas flow, ACFM	58,137
Million BTU/day heat input	1,726
Particulate Concentration, gr/ACF	.014
Particulate Emission, lbs/day	168
Maximum Allowable Emission at this rate, lbs/day	173

STANDARD CONDITIONS:

Gas Flow, SCFD	30,166
Particulate Concentration, gr/SCFD	.022

Avg. fuel oil used 1974 = 10,380 gpd

Calculated avg. daily SO_2 emission = 4929 lbs/day

Calculated avg. daily NO_x emission = 720 lbs/day

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 4 Date 9-11-74 Time 3:05 p.m.

Analyst Taylor + Washburn Fuel Bark

STACK CONDITIONS:

Gas flow, ACFM	89,763
Million BTU/day heat input	122 million BTU/hr
Particulate Concentration, gr/ACF	.098
Particulate Emission, lbs/day	1,812
Maximum Allowable Emission at this rate, lbs/day	878

STANDARD CONDITIONS:

Gas Flow, SCFD	49,386
Particulate Concentration, gr/SCFD	0.178

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 5 Date 10-31-74 Time 9:20 A.m.

Analyst TAYlor + Nixon Fuel oil

STACK CONDITIONS:

Gas flow, ACFM	67,151
Million BTU/day heat input	4,404
Particulate Concentration, gr/ACF	.023
Particulate Emission, lbs/day	320
Maximum Allowable Emission at this rate, lbs/day	440

STANDARD CONDITIONS:

Gas Flow, SCFD	39,724
Particulate Concentration, gr/SCFD	.039

Avg. fuel oil used 1974 = 29,318 gpd

Calculated avg. daily SO_2 emission - 13,926 lbs/day

Calculated avg. daily NO_x emission = 2,160 lbs/day

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 6 Date 11-1-74 Time 8:20 A.m.

Analyst Taylor + Kelly Fuel oil

STACK CONDITIONS:

Gas flow, ACFM	68,121
Million BTU/day heat input	5,122
Particulate Concentration, gr/ACF	.015
Particulate Emission, lbs/day	210
Maximum Allowable Emission at this rate, lbs/day	512

STANDARD CONDITIONS:

Gas Flow, SCFD	40,331
Particulate Concentration, gr/SCFD	.025

Avg. fuel oil used 1974 = 31,124 gpd

Calculated avg. daily SO_2 emission = 14,778 lbs/day

Calculated avg. daily NO_x emission = 2,280 lbs/day

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 7 Date 5-7-74 Time 9:00 A.M.

Analyst TAYLOR+SNYDER Fuel Oil

STACK CONDITIONS:

Gas flow, ACFM	102,984
Million BTU/day heat input	4,561
Particulate Concentration, gr/ACF	.0205
Particulate Emission, lbs/day	435
Maximum Allowable Emission at this rate, lbs/day	456

STANDARD CONDITIONS:

Gas Flow, SCFD	63,643
Particulate Concentration, gr/SCFD	.036

Avg. fuel oil used 1974 = 23,688 gpd

Calculated avg. daily SO_2 emission= 11,252 lbs/day

Calculated avg. daily NO_x emission = 1,680 lbs/day

POWER BOILER ATMOSPHERIC EMISSION REPORT

P. B. No. 8 Date 5-7-74 Time 10:30 A.M.

Analyst TAYLOR & SNYDER Fuel Oil

STACK CONDITIONS:

Gas flow, ACFM	91,850
Million BTU/day heat input	4,236
Particulate Concentration, gr/ACF	.0125
Particulate Emission, lbs/day	237
Maximum Allowable Emission at this rate, lbs/day	424

STANDARD CONDITIONS:

Gas Flow, SCFD	55,551
Particulate Concentration, gr/SCFD	.021

Avg. fuel oil used 1974 = 23,746 gpd

Calculated avg. daily SO_2 emission = 11,279 lbs/day

Calculated avg. daily NO_x emission = 1,680 lbs/day

NO. 1 LIME KILN ATMOSPHERIC EMISSION REPORT

Analyst: Taylor, Mashburn, Wimberley, Moore Date: 8-20-74 Time: 10:30 A.M.

Stack Conditions:

	Outlet
Gas Flow, ACFM	26,536
Process Weight In = 15.88 tons/hr.	—
Dust Concentration, gr/ACF	.045
Dust Total, lbs/hour	10.24
Maximum Allowable Emission at this rate, lbs/hour.	19.93

Standard Conditions:

Gas Flow, SCFMD	13,909
Dust Concentration, gr/SCFD	.072

NO. 2 LIME KILN ATMOSPHERIC EMISSION REPORT

Analyst: Taylor, Moore, Metheny Date: 6-14-74 Time: 9:30 A.M.

Stack Conditions:

	Outlet
Gas Flow, ACFM	29,649
Process Weight In = 13.14 tons/hr.	.086 Tons/day
Dust Concentration, gr/ACF	.028
Dust Total, lbs/hour	7.13
Maximum Allowable Emission at this rate, lbs/hour.	17.68

Standard Conditions:

Gas Flow, SCFMD	15,540
Dust Concentration, gr/SCFD	.05

NO. 3 LIME KILN ATMOSPHERIC EMISSION REPORT

Analyst: Taylor, Mashburn, Wimberley, Moore Date: 8-20-74 Time: 9:00 A.M.

Stack Conditions:

	Outlet
Gas Flow, ACFM	29,421
Process Weight In = 13.21 tons/hr.	——
Dust Concentration, gr/ACF	.068
Dust Total, lbs/hour	17.17
Maximum Allowable Emission at this rate, lbs/hour.	17.78

Standard Conditions:

Gas Flow, SCFMD	15,025
Dust Concentration, gr/SCFD	.134

NO. 5 PRECIPITATOR ATMOSPHERIC EMISSION REPORT

Analyst Taylor + Wimberly Time 2:00 P.M. Date 8-28-74

Gas Flow, CFM, Stack	122,404
Black Liquor Solids Input, lbs/day	473,671
Dust Concentration, gr/cu. ft., Stack	.002
Dust Total, lbs/day	50.43
Maximum Allowable Emission at this Rate, lbs/day	474

STANDARD CONDITIONS

Gas Flow SCFD	58,477
Particulate Concentration, gr/SCFD	.005

Calculated avg. daily TRS emission = 230 lbs/day

Calculated avg. daily SO_2 emission = 3626 lbs/day

NO. 6 PRECIPITATOR ATMOSPHERIC EMISSION REPORT

Analyst Taylor & Wimberly   Time 0815   Date 8-29-74

Gas Flow, CFM, Stack	144,894
Black Liquor Solids Input, lbs/day	589,928
Dust Concentration, gr/cu. ft., Stack	.003
Dust Total, lbs/day	89.54
Maximum Allowable Emission at this Rate, lbs/day	590

STANDARD CONDITIONS

Gas Flow SCFD	67,719
Particulate Concentration, gr/SCFD	.006

Calculated avg. daily TRS emission = 222 lbs/day

Calculated avg. daily SO_2 emission = 3512 lbs/day

APPENDIX C

Basis of Short-Term Baseline PM

Emissions Due to Bark Firing

in No. 4 Power Boiler

I. BASIS OF PM EMISSIONS

Date: January 29, 1975

Steam Production = 1,849,000 lb steam

= 77,042 lb/hr (avg.)

From Appendix B:

PM Emission Factor = 0.62 lb/10^6 Btu

Boiler design: 2812 Btu/lb steam

PM Emission Calculation

77,042 lb/hr steam x 2812 Btu/lb steam x 0.62 lb/10^6 Btu = 134.3 lb/hr

APPENDIX D

CALCULATIONS AND SUPPORTIVE INFORMATION
PROJECTED SO_2 EMISSIONS

I. NO. 9 POWER BOILER

From Operating Permit (3/2/84) and EPA PSD Permit (2/18/82):

Maximum heat input (oil) = 756 x 10^6 Btu/hr

Maximum SO_2 = 0.8 lb/10^6 Btu

Maximum SO_2 Emissions = 756 x 10^6 x 0.8/10^6 = 604.8 lb/hr

Annual SO_2 = 604.8 lb/hr x 8,760 hr/yr / 2000 lb/ton

= 2,649.0 TPY

II. RECOVERY BOILERS

A. No.5 / No.6 Recovery Boilers

Nos. 5 and 6 Recovery Boilers are identical, and maximum emissions from each will be the same. Maximum SO_2 emissions are based upon the maximum black liquor solids burning rate of 1.2×10^6 lb/day. Emission calculations are presented in the No.6 Recovery Boiler permit application.

Maximum SO_2 emissions = 6150 lb/day = 256 lb/hr, each boiler

Annual SO_2 emissions = 256.3 lb/hr x 8,760 hr/yr / 2000 lb/ton
= 1,122.6 TPY, each boiler

B. No.7 Recovery Boiler

Maximum SO_2 emissions for the No. 7 Recovery Boiler were estimated in a manner similar to that shown in the No. 6 Recovery Boiler permit application. Emissions were based upon an estimated maximum concentration of SO_2 in the flue gases, and the maximum volumetric flow rate expected from the boiler. The future maximum design rate of the boiler will be 3.6×10^6 lb/day black liquor solids input. Maximum SO_2 emissions were calculated as follows:

460,470 acfm @ 385°F and 5% O_2

208,889 dscfm

SO_2 @ 135 ppm (dry) @ 8% O_2 = 166 ppm @ 5% O_2

PVC = mRT

m = PVC/RT

$$SO_2\ (\text{lb/hr}) = \frac{2{,}116.8\ \text{lb}_f}{\text{ft}^2} \times \frac{208{,}889\ \text{ft}^3}{\text{min}} \times \frac{166}{10^6} \times \frac{60\ \text{min}}{\text{hr}} \times$$

$$\frac{64\ \text{lb}_m\text{-}^{\circ}\text{R}}{1545\ \text{ft-lb}_f} \times \frac{1}{528^{\circ}\text{R}}$$

= 345.5 lb/hr

= 1,513.4 TPY

III. SMELT DISSOLVING TANKS

SO_2 emissions from the smelt dissolving tanks were estimated based upon the AP-42 emission factor (Table 10.1-1; 10/86) of 0.2 lb/ton ADUP. The maximum future pulp production of the SJFP mill will be 2000 TPD ADUP. The resulting SO_2 emissions are as follows:

2000 TPD x 0.2 lb/ton / 24 hr/day = 16.67 lb/hr

16.67 lb/hr x 8,760 / 2000 = 73.0 TPY

The total SO_2 emissions were distributed among the three sets of smelt dissolving tanks on the basis of associated recovery boiler design rate, as shown below:

Smelt Dissolving Tank	Associated Recovery Boiler	Design Rate (lb/day BLS)	Percent of Total	SO_2 Emissions (lb/hr)	SO_2 Emissions (TPY)
5	5	1.2×10^6	20%	3.33	14.6
6	6	1.2×10^6	20%	3.33	14.6
7	7	3.6×10^6	60%	10.00	43.8
Totals		6.0×10^6	100%	16.67	73.0

IV. LIME KILNS

Future SO_2 Emissions from the lime kilns were estimated in a manner similar to that for the smelt dissolving tanks. The AP-42 factor (Table 10.1-1; 10/86) of 0.3 lb/ton ADUP was utilized, as shown below:

2000 TPD x 0.3 lb/ton / 24 hr/day = 25.0 lb/hr

25.0 lb/hr x 8,760 / 2000 = 109.5 TPY

The total emissions were distributed equally among the three lime kilns since the kilns are identical in capacity:

Each kiln: 25.0 lb/hr / 3 = 8.33 lb/hr

109.5 TPY / 3 = 36.5 TPY

The burning of non-condensible TRS gases in the lime kilns will result in an additional 31 TPY of SO_2 emissions (based on information presented in permit application for lime kilns). The TRS gases may be burned in any of the three kilns at any time. As a result, the 31 TPY total SO_2 was proportioned equally among the three kilns (10.3 TPY and 2.36 lb/hr, each). Total SO_2 from each of the lime kilns is therefore calculated as follows:

8.33 lb/hr + 2.36 lb/hr = 10.7 lb/hr

36.5 TPY + 10.3 TPY = 46.8 TPY

APPENDIX E

CALCULATIONS AND SUPPORTIVE INFORMATION - PROJECTED PM EMISSIONS

I. <u>NO. 9 POWER BOILER</u>

From Operating Permit (3/2/84) and EPA PSD Permit (2/18/82):

Maximum heat input = 882 x 10^6 Btu/hr

Maximum PM = 0.1 lb/10^6 Btu

Maximum PM emissions = 882 x 10^6 x 0.1/10^6 = 88.2 lb/hr

Annual PM = 88.2 lb/hr x 8,760 hr/yr / 2000 lb/ton = 386.3 TPY

II. RECOVERY BOILERS

A. No. 5 / No. 6 Recovery Boilers

Nos. 5 and 6 Recovery Boilers are identical, and maximum emissions from each are based upon the maximum black liquor solids burning rate of 1.2 lb x 10^6 lb/day. From the No. 6 Recovery Boiler permit application:

Maximum PM emissions = 900 lb/day = 37.5 lb/hr

Annual PM = 37.5 lb/hr x 8,760 hr/yr / 2000 lb/ton

= 164.3 TPY

B. No. 7 Recovery Boiler

Future maximum operation of No.7 Recovery Boiler will be limited to 3.6 x 10^6 lb/day BLS. Maximum PM emission will be as follows:

Maximum PM emissions = 3,180 lb/day = 132.5 lb/hr

Annual PM = 132.5 lb/hr x 8,760 / 2000 = 580.4 TPY

III. SMELT DISSOLVING TANKS

A. No. 5 / No. 6 Smelt Dissolving Tanks

Based upon the No. 6 Smelt Tank permit application, the maximum PM emissions from No. 6 Smelt Tanks are as follows:

Maximum PM Emissions = 135 lb/day = 5.63 lb/hr

Annual PM Emissions = 5.63 lb/hr x 8,760 / 2000 = 24.7 TPY

The No. 5 Smelt Tank will be identical in operation to the No. 6 Smelt Tank, and maximum emissions will be the same.

B. No. 7 Smelt Dissolving Tank

Maximum PM emissions from the No. 7 Smelt Dissolving Tank will be as follows:

Maximum PM emissions = 477 lb/day = 19.9 lb/hr

Annual PM = 19.9 lb/hr x 8,760 / 2000 = 87.2 TPY

IV. LIME KILNS

Based upon the construction permit applications (dated 6/30/87) submitted to FDER for replacement of the venturi scrubbers on the kilns, maximum emissions are as follows:

No. 1 Lime Kiln - 10.29 lb/hr, 45.1 TPY

No. 2 Lime Kiln - 10.29 lb/hr, 45.1 TPY

No. 3 Lime Kiln - 10.29 lb/hr, 45.1 TPY

V. SLAKER VENTS

Maximum future PM emissions from the slaker vents are based upon current permit limits. These are as follows:

"A" Side Slaker Vent - 25.67 lb/hr, 112.4 TPY

"B" Side Slaker Vent - 25.67 lb/hr, 112.4 TPY

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

TO: Clair Fancy

FROM: Bruce Mitchell RBM

DATE: December 14, 1987

SUBJ: St. Joe Forest Products Company
No. 1, 2 and 3 Lime Kilns
AC 23-136376, -136377 and -136378

The incompleteness letter sent out on December 11, 1987, requested information for determining applicability of the sources. Specifically, with the total process input rate increases requested, I was soliciting source specific information in order to see if NSPS, 40 CFR 60, Subpart BB, was applicable or not, because the pollutant emission limiting standards are more stringent than what is applied for in their applications.

If reasonable assurance can be given to the Department that a modification will not occur, permitting of these sources will be straightforward. Permitting of the sources will also be straightforward even if NSPS, Subpart BB, is applicable, it's just that more stringent emission limiting standards (PM & TRS) will be imposed.

Also, where applicable, both AAQS and increment analyses are required.

BM/ks

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to: R.E. Nedley, V.P.
St. Joe Forest Products Co.
P.O. Box 190
Port St. Joe, FL 32456

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 274 007 636

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature – Addressee
X

6. Signature – Agent
X Demitre Thomas

7. Date of Delivery
12/12/87

8. Addressee's Address *(ONLY if requested and fee paid)*
202 Monument

DOMESTIC RETURN RECEIPT

P 274 007 636

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

★ U.S.G.P.O. 1985-480-794

Sent to R.E. Nedley, V.P.	
Street and No. ~~St. Joe Forest Products Co.~~ P.O. Box 190	
P.O., State and ZIP Code Port St. Joe, FL 32456	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 12/11/87 Permit: AC 23-136376, -377, and -378	

PS Form 3800, June 1985

File

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

December 10, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. E. Nedley
Vice President
St. Joe Forest Products Company
P. O. Box 190
Port St. Joe, Florida 32456-0190

Dear Mr. Nedley:

Re: Completeness Review for Applications to Construct
AC 23-136376, -136377 and -136378

The Department received Mr. Lewis W. Taylor's cover letter and supplemental material, dated November 12, 1987, on November 12, 1987 (hand delivered). Based on a review of this material, the above referenced applications are deemed incomplete. The following information, including all assumptions, calculations and reference material, shall be submitted to the DER's Bureau of Air Quality Management (BAQM) office before their status can, again, be ascertained:

1. For the last 5 years, what has been the actual maximum total process input rate of $CaCO_3$ for each lime kiln (Nos. 1-3) on an hourly basis and annual basis?

2. For the last 5 years and per lime kiln, what are the dates that the lime kilns have been shut-down and brought back on-line?

3. For each lime kiln, please document what physical changes to or changes in the method of operation have occurred since September 24, 1976. Please provide documentation of any change(s) and their associated cost(s).

4. Once the initial $CaCO_3$ is lost to the scrubber system, which you label as "recycle", and it is made up in the first hour of operation, please justify any further make-up beyond the initial recharge.

5. What is the maximum hourly total process input capacity for each of the existing lime kilns (Nos. 1-3)? Are these capacities the same as or greater than what has been previously permitted? If so, please justify, explain, and provide any vendor's guarantees, documentation, engineering calculations, etc.

6. For each of the last 5 years, what is the hourly raw materials and chemicals processed by each kiln during their annual compliance tests? For each compliance test run and per lime kiln, please submit the results of each test depicting the calculations for the actual emissions for all pollutants.

7. A source is subject to the conditions of the New Source Performance Standard (NSPS) if there is an increase in the actual mass pollutant emissions rate (see attachment: Mr. W. A. Smith's letter dated October 25, 1987; U.S. EPA, Region IV). Therefore, demonstrate and provide reasonable assurance that there will not be an actual mass emission rate increase for all pollutants at the proposed increased levels of operation versus the existing levels.

8. Are the burners that are to be used as the heat sources for each existing lime kiln being altered or replaced? If so, please explain and provide specifications. What is the current and existing maximum firing rate(s) of the fuel(s) used and the maximum Btu/hr heat input rate(s) per lime kiln? Calculate the maximum potential emissions of all pollutants per lime kiln at the current and proposed new firing rates.

9. Please provide an ambient air quality standards (AAQS) analysis and a prevention of significant deterioration (PSD) maximum concentration increase (increment) analysis for all pollutants which have a facility-wide PSD significant net emissions increase. These analyses should be sufficient to give the Department reasonable assurance that the net emissions increase will not cause or contribute to any AAQS or increments violation.

10. Are any other sources of the mill affected by the proposed increases in the total process input rates in the lime kilns? If so, please explain and calculate the net potential emission changes for all pollutants associated with these increases on a per source basis. If required, submit an application along with the appropriate fee to the DER's BAQM office for each affected source.

11. In their present state, can the existing lime kilns with their existing scrubber systems process the proposed through-put levels of raw materials and chemicals and comply with both the particulate matter and TRS standards pursuant to FAC Rule 17-2? If not, explain. If so, please provide test(s) results supporting your contention.

12. Will each of the three lime kilns be capable of accommodating the TRS emissions from the noncondensible gas handling (NCG) system? If not, please explain. Please designate the source(s) that will not be used for this purpose.

13. Will lime mud be processed for the entire time in the lime kiln while it is treating the TRS gases from the NCG system? If not, please explain.

If there are any questions, please call Bruce Mitchell or Tom Rogers at (904)488-1344, or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/BM/s

attachment

cc: E. Middleswart, NW District
B. Pittman, Esq.
L. Taylor, St. Joe Forest Products
V. Hutcheson, P.E., Rust Int. Corp.

ATTACHMENT

23 Oct. 87
Atlanta A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

4APT-AC

OCT 23 1987

Mr. William A. Thomas, P.E., Administrator
Central Air Permitting
Florida Department of Environmental
Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER
OCT 26 1987
BAQM

Dear Mr. Thomas:

As requested in your letter of September 24, 1987, we have reviewed the planned renovations to the No. 6 Recovery Furnace at St. Joe Paper Company's Port St. Joe, Florida facility. The planned renovation for the No. 6 Recovery Furnace includes: increasing the firing rate from 900,000 lb per day of black liquor to 1,200,000 lb per day; replacing the direct contact evaporator with an indirect contact evaporator; renovating the wet-bottom ESP to increase particulate removal efficiency; and renovating the wet-bottom portion of the ESP.

Your letter contained various statements and conclusions regarding the possible application of New Source Performance Standards (40 CFR Part 60, Subpart BB) and Prevention of Significant Deterioration (PSD) to the recovery furnace after it has been renovated. We are providing the following response regarding your conclusions.

Applicability of 40 CFR Part 60, Subpart BB

An existing facility can become subject to the applicable provisions of New Source Performance Standards (NSPS) if it is either modified or reconstructed. Modification is addressed in 40 CFR §60.14, which states that any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification. Reconstruction is defined in 40 CFR §60.15. In order for an existing facility to be considered reconstructed, the fixed capital cost of the new (replacement) components must exceed 50 percent of the fixed capital cost of a comparable, entirely new facility.

Based on the information provided and in the literature, we believe that the Total Reduced Sulfur (TRS) emission rate from the recovery furnace should decrease. Therefore, the facility would not become subject to the TRS standard of Subpart BB because a modification would not have occurred.

Removing the direct contact evaporator and increasing the firing rate of the recovery furnace will increase the amount of particulate to the ESP, however, the renovated ESP should have a higher particulate removal efficiency. This combination makes it unclear whether the particulate emission rate will increase, decrease, or remain the same.

St. Joe Paper Company's basis for demonstrating a decrease in the particulate emission rate is not acceptable. Their estimate of the particulate emission rate before renovation is based on the current particulate standard for the No. 6 Recovery Furnace. Previous test data (July 26, 1976) indicates that the actual particulate emission rate was 14 percent of the standard. This indicates that an increase in the particulate emission rate will occur after renovation if the renovated ESP emits particulate at the level that the ESP vendor guarantees.

A determination of the applicability of the particulate emission standard of 40 CFR Part 60, Subpart BB because of modification can only be made by a comparison of test data from before and after the renovation. Although St. Joe Paper Company contends that test data obtained before the renovation is not valid because the test methods utilized did not meet today's criteria in Method 5, we believe that the test data generated from these tests are the best estimate of actual emissions before the renovation. When tests are conducted after the renovation, we propose that the test method that was utilized before the renovation be employed so that comparable results can be obtained. For example, if alundum thimbles were used to collect particulate during the tests before the renovation then they should be utilized for the tests after the renovation. This testing methodology would be used only for comparative purposes and not for compliance determinations.

The information provided to substantiate that reconstruction (as defined in 40 CFR §60.15) will not occur is not acceptable since we could not determine the exact cost basis for the estimate. The December 16, 1985, preamble to the reconstruction regulations defines fixed capital cost as the capital needed to provide all the depreciable components, including the costs of engineering, purchase and installation of major process equipment, contractor fees, instrumentation, auxiliary facilities, buildings and structures. In addition, costs associated with the purchase and installation of air pollution control equipment are only included in the fixed capital cost to the extent that the equipment is required as part of the manufacturing/operation process. The reconstruction regulation also specifies that the entirely new facility must be comparable to the planned renovated facility.

The fixed capital cost of the renovated recovery furnace and the entirely new facility must be detailed and revised to include the items referenced above. In addition, we request that the cost of retrofitting the wet-bottom ESP and a comparable entirely new wet-bottom ESP be included as separate cost items. The cost associated with the wet-bottom ESP may be included in the fixed capital costs if it is determined that it is required as part of the operating process.

The fixed capital cost for the entirely new facility included the cost of a cascade evaporator (direct contact evaporator). This cost can not be used because the planned renovated facility will not include a cascade evaporator.

When you receive the revised reconstruction costs of the facility, we would appreciate the opportunity to review this information.

We are in agreement with you that an increase in the smelt feed rate to the smelt tanks does not necessarily make the smelt tanks subject to NSPS. If the smelt tanks were originally designed to accommodate the higher feed rate then the smelt tanks would not be considered modified. However, Mr. Mike Harley of your office indicated that the practice of recirculating green liquor back to the smelt tanks will cease in order to accommodate the increased smelt feed rate. We view this as an operational change (as cited in 40 CFR §60.14) to the smelt tanks. Therefore, the smelt tanks will become subject to 40 CFR Part 60, Subpart BB because the operational change will increase the TRS emission rate.

Increasing the design capacity of an existing facility does not necessarily subject the existing facility to NSPS. In order for the existing facility to become subject to NSPS, an increase in the actual (not allowable) emission rate of a pollutant to the atmosphere for which a NSPS standard applies would have to accompany the increase in the design capacity. Either AP-42 factors or actual emission tests can document the change in the emission rate. If the facility owner or operator does not inform you of the increase in design capacity of the facility and an increase in the actual emission rate of a regulated pollutant occurs, then the facility owner or operator would be in violation of NSPS from the time that the design capacity was increased.

Applicability of PSD Regulations

In your letter, you stated that the reactivation of the No. 6 recovery furnace will not trigger a full PSD review. EPA agrees in part with this determination.

It is current EPA policy that if a source can demonstrate, to the satisfaction of the Administrator, that the shutdown of a unit was not intended to be of a permanent nature, PSD review would not apply to that unit's reactivation. Recovery furnace No. 6 has been on cold standby for the last 9-1/2 years. However, the company has maintained a continuous state operating permit and has made it clear that the unit was not permanently shutdown. Therefore, the mere startup of recovery furnace No. 6 would not trigger new source review.

However, since the company is proposing to make physical and operational changes to recovery furnace No. 6 prior to reactivation, some change in previous emission levels may occur. It cannot be determined from the available information whether or not this modification would cause a "significant" net emissions increase and subject the renovated No. 6 recovery furnace to PSD requirements. In order to assess whether a major modification will occur, the increase in emissions over previous actual emission levels will need to be projected. For TRS, the new emissions change should be negative due to the increased capability of the recovery boiler to control TRS emissions and the removal of the direct contact evaporator. However, for particulate emissions, pre-shutdown test data should be compared to estimated post-startup emission levels. (Note that PM_{10} emissions may also need to be addressed). In addition, the net emissions change for other pollutants

(SO_2, NO_x, CO, etc.) will have to be determined. The emissions changes associated with the appropriate smelt dissolving tank should also be included in the net emissions calculations. If a "significant" net emissions increase of any pollutant occurs as a result of the physical changes to the No. 6 recovery furnace, then PSD would apply to the reactivation/modification.

You stated in your letter that the PSD review for the No. 9 power boiler did not include emissions from the No. 5 or the No. 6 recovery furnaces. Since these two units were on cold standby at the time of the PSD application for the No. 9 power boiler, the actual emissions of these units were assumed to be zero and were not included in any ambient impact analyses. EPA guidance specifies that when modeling multi-source areas to determine compliance with short-term and annual ambient standards, nearby background sources should be modeled using the following: maximum allowable emissions, actual or design capacity (whichever is greater), and time periods which represent continuous operation. Even though both recovery furnaces No. 5 and No. 6 were not operating, they both had valid operating permits and should have been included in the PSD modeling for power boiler No. 9 at their allowable emission rates and design capacities.

In order to allow the reactivation of recovery furnaces No. 5 and No. 6, ambient analyses must be performed to validate the previous PSD review. If both recovery furnaces were in existence on the baseline date, these units would not contribute to increment consumption and therefore any increment modeling done in conjunction with the No. 9 power boiler's PSD application would be preserved. However, emissions from these two units will affect the results of the ambient standard analysis. As you have proposed in your letter, modeling analyses should be done for recovery furnaces No. 5 and No. 6 to ensure attainment of the ambient particulate standard. All changes in particulate emission levels due to the reactivation of these sources (including any increase from the modification of recovery furnace No. 6 and any increases from the smelt dissolving tanks) should also be included in the ambient analysis.

Thank you for the opportunity to review this source modification package. If we may be of further assistance to you or your staff, please contact us. Any questions regarding NSPS, may be addressed to Paul Reinermann at 404/347-2904. If you have any questions regarding PSD, please contact Janet Hayward at 404/347-2864.

Sincerely yours,

Winston A. Smith

Winston A. Smith, Director
Air, Pesticides and Toxics
Management Division

Copied: CHF / BT
Bruce Mitchell
Mike Harley
Betsy Pittman / Mark Zilberberg

No. 1 LIME KILN

TRS CONTROL PROJECT

CONSTRUCTION PERMIT APPLICATION

ST. JOE FOREST PRODUCTS COMPANY
Port St. Joe, Florida

November 11, 1987

AC 23-136376

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

November 12, 1987

DER
NOV 12 1987
BAQM

Mr. Clair H. Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

As required by the Florida TRS rule, attached are 4 copies of the construction permit applications, none of which are currently pending, for the following sources at DER:

No. 5 Recovery Boiler
No. 7 Recovery Boiler
No. 7 Smelt Dissolving Tanks
Batch Digester System
Continuous Digester System
Black Liquor Evaporation System

A check for six thousand dollars ($6,000) is enclosed to cover the fee for filing. This fee has been calculated as one thousand dollars ($1,000) each for six permits not previously filed.

In addition we have attached the applicable information which was requested by letter on October 2, 1987 for Smelt Dissolving Tanks, No. 5 and No. 6, File No. AC-23-139086.

Also we have filed the applicable information for the Concentrator, requested on October 2, 1987. As suggested by your staff, we request the concentrator, File No. AC-23- 139087, be combined into the pending construction permit application for the Black Liquor Evaporation System. We have filed the necessary information for the black liquor evaporation system, in addition to addressing the request for additional information.

Additional information previously requested on the Lime Kiln construction permit applications, File No. AC-23-136376, File No. 136377, and File No. 136378, is also filed and addresses all applicable information requested in the letter of October 2, 1987.

Additional information for the No. 6 Recovery Boiler construction permit application, File No. AC-23-131963, discussed at several meetings, is also attached. We would appreciate priority attention to this application since it is vital for the mill to meet the TRS rule compliance date.

A summary of emissions increases and decreases at the plant for SO_2 and PM and effect upon PSD increments will be forwarded in approximately two to three weeks.

If you have any questions please let me know.

Sincerely,

Lewis W. Taylor

Lewis W. Taylor
Environmental Coordinator

LWT:slt

cc: Robert Nedley
Jack Preece
Terry Cole
John Millican
Vic Hutcheson

AC 23-136376

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER
NOV 12 1987
BAQM

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [XX] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #1 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley , Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, Vice President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed ______________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

Florida Registration No. 37042 Date: ______ Telephone No. 205-~~930-1189~~ 995-7878

SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases. The project will result in full compliance. Particulate and TRS emissions will be reduced.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #AO23-96171 issued 2/15/85, expires 1/1/90

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe: ______________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

   a. If yes, has "offset" been applied? __________

   b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

   c. If yes, list non-attainment pollutants. ______________________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

   a. If yes, for what pollutants? ______________________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

9957878

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants Type	Contaminants % Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	particulate	see below	21,008 lbs/hr.	
	calcium compounds	26.00		
	sodium compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$
2. Product Weight (lbs/hr): 11,764 lbs/hr (CaO at 100% availability)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission ~~XXXXXX~~	Potential[4] Emission T/yr	Relate to Flow Diagram
particulate	10.29	45.07	see Proj. Summary Sec. IV C.1.	10.29		26,990	
TRS @ H_2S	2.67	11.68	17-2.600(4)(c)5.a. 20 ppm	2.67		111.5	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
See Project Summary	particulate	99.83	0.39 to 26.33 microns	See Proj. Sum. Sec. IV C.
Sec. III C.				
See Project Summary	TRS	N/A	N/A	N/A
Sec. III D.				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
natural gas	.0487 MMCF/hr	.0546 MMCF/hr.	54.68
#6 oil	325 gal/hr.	365 gal/hr.	54.68
non-condensible gases	989 SCFM	2368 SCFM	13.06

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: included in attachments.

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 32,933 ACFM 14,155 DSCFM Gas Exit Temperature: 177 °F.

Water Vapor Content: 38.1 % Velocity: 43.7 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

No. 2 LIME KILN

TRS CONTROL PROJECT

CONSTRUCTION PERMIT APPLICATION

ST. JOE FOREST PRODUCTS COMPANY
Port St. Joe, Florida

November 11, 1987

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

AC 23-136377

St. Joe FOREST PRODUCTS COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

DER

NOV 12 1987

BAQM

November 12, 1987

Mr. Clair H. Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

As required by the Florida TRS rule, attached are 4 copies of the construction permit applications, none of which are currently pending, for the following sources at DER:

No. 5 Recovery Boiler
No. 7 Recovery Boiler
No. 7 Smelt Dissolving Tanks
Batch Digester System
Continuous Digester System
Black Liquor Evaporation System

A check for six thousand dollars ($6,000) is enclosed to cover the fee for filing. This fee has been calculated as one thousand dollars ($1,000) each for six permits not previously filed.

In addition we have attached the applicable information which was requested by letter on October 2, 1987 for Smelt Dissolving Tanks, No. 5 and No. 6, File No. AC-23-139086.

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Additional information previously requested on the Lime Kiln construction permit applications, File No. AC-23-136376, File No. 136377, and File No. 136378, is also filed and addresses all applicable information requested in the letter of October 2, 1987.

Additional information for the No. 6 Recovery Boiler construction permit application, File No. AC-23-131963, discussed at several meetings, is also attached. We would appreciate priority attention to this application since it is vital for the mill to meet the TRS rule compliance date.

A summary of emissions increases and decreases at the plant for SO_2 and PM and effect upon PSD increments will be forwarded in approximately two to three weeks.

If you have any questions please let me know.

Sincerely,

Lewis W. Taylor
Lewis W. Taylor
Environmental Coordinator

LWT:slt

cc: Robert Nedley
Jack Preece
Terry Cole
John Millican
Vic Hutcheson

AC23-136377

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT

160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501

DER

NOV 12 1987

BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #2 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley, Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, Vice President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed ____________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

Florida Registration No. 37042 Date: ____________ Telephone No. 205-930-1189

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases.

The project will result in full compliance. Particulate and TRS emissions will be reduced.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #A023-96172 issued 2/15/85, expires 1/1/90.

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe: ______________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

   a. If yes, has "offset" been applied? __________

   b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

   c. If yes, list non-attainment pollutants. ______________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

   a. If yes, for what pollutants? ______________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Lime Mud ($CaCO_3$)	particulate	see below	21,008 lbs/hr.	
	calcium compounds	26.00		
	sodium compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$
2. Product Weight (lbs/hr): 11,764 lbs/hr (CaO at 100% availability)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			~~XXXXXX~~	T/yr	
particulate	10.29	45.07	see Proj. Summary Sec. IV C.1.	10.29		26,990	
TRS @ H_2S	2.67	11.68	17-2.600(4)(c)5.a. 20 ppm	2.67		111.5	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
See Project Summary	particulate	99.83	0.39 to 26.33 microns	See Proj. Sum. Sec. IV C.
Sec. III C.				
See Project Summary	TRS	N/A	N/A	N/A
Sec. III D.				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
natural gas	.0487 MMCF/hr	.0546 MMCF/hr.	54.68
#6 oil	325 gal/hr.	365 gal/hr.	54.68
non-condensible gases	989 SCFM	2368 SCFM	13.06

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: included in attachments.

Percent Sulfur: ____________ Percent Ash: ____________

Density: ____________ lbs/gal Typical Percent Nitrogen: ____________

Heat Capacity: ____________ BTU/lb ____________ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ____________

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ____________ Maximum ____________

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 32,933 ACFM 14,155 DSCFM Gas Exit Temperature: 177 °F.

Water Vapor Content: 38.1 % Velocity: 43.7 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patholog-ical)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste ____________

Total Weight Incinerated (lbs/hr) ____________ Design Capacity (lbs/hr) ____________

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ____________

Date Constructed ____________ Model No. ____________

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ____________

No. 3 LIME KILN

TRS CONTROL PROJECT

CONSTRUCTION PERMIT APPLICATION

ST. JOE FOREST PRODUCTS COMPANY

Port St. Joe, Florida

November 11, 1987

AC 23-136378

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

DER
NOV 12 1987
BAQM

November 12, 1987

Mr. Clair H. Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

As required by the Florida TRS rule, attached are 4 copies of the construction permit applications, none of which are currently pending, for the following sources at DER:

No. 5 Recovery Boiler
No. 7 Recovery Boiler
No. 7 Smelt Dissolving Tanks
Batch Digester System
Continuous Digester System
Black Liquor Evaporation System

A check for six thousand dollars ($6,000) is enclosed to cover the fee for filing. This fee has been calculated as one thousand dollars ($1,000) each for six permits not previously filed.

In addition we have attached the applicable information which was requested by letter on October 2, 1987 for Smelt Dissolving Tanks, No. 5 and No. 6, File No. AC-23-139086.

Also we have filed the applicable information for the Concentrator, requested on October 2, 1987. As suggested by your staff, we request the concentrator, File No. AC-23- 139087, be combined into the pending construction permit application for the Black Liquor Evaporation System. We have filed the necessary information for the black liquor evaporation system, in addition to addressing the request for additional information.

Additional information previously requested on the Lime Kiln construction permit applications, File No. AC-23-136376, File No. 136377, and File No. 136378, is also filed and addresses all applicable information requested in the letter of October 2, 1987.

Additional information for the No. 6 Recovery Boiler construction permit application, File No. AC-23-131963, discussed at several meetings, is also attached. We would appreciate priority attention to this application since it is vital for the mill to meet the TRS rule compliance date.

A summary of emissions increases and decreases at the plant for SO_2 and PM and effect upon PSD increments will be forwarded in approximately two to three weeks.

If you have any questions please let me know.

Sincerely,

Lewis W. Taylor

Lewis W. Taylor
Environmental Coordinator

LWT:slt

cc: Robert Nedley
Jack Preece
Terry Cole
John Millican
Vic Hutcheson

BEST AVAILABLE COPY AC23-136378

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32601

DER
NOV 12 1987
BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #3 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley, Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

he pollution control facilities, when properly maintained and operated, will discharge n effluent that complies with all applicable statutes of the State of Florida and the ules and regulations of the department. It is also agreed that the undersigned will urnish, if authorized by the owner, the applicant a set of instructions for the proper aintenance and operation of the pollution control facilities and, if applicable, ollution sources.

Signed ________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

da Registration No. 37042 Date: ________ Telephone No. 205-930-1189

SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases.

The project will result in full compliance. Particulate and TRS emissions will be reduced.

Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000.

Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #A023-96173 issued 2/15/85, expires 1/1/90.

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe: ________________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

   a. If yes, has "offset" been applied? __________

   b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

   c. If yes, list non-attainment pollutants. ______________________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

   a. If yes, for what pollutants? ______________________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants Type	Contaminants % Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	particulate	see below	21,008 lbs/hr.	
	calcium compounds	26.00		
	sodium compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$
2. Product Weight (lbs/hr): 11,764 lbs/hr (CaO at 100% availability)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission ~~XXXXXX~~ T/yr	Relate to Flow Diagram
particulate	10.29	45.07	see Proj. Summary Sec. IV C.1.	10.29	26,990	
TRS @ H_2S	2.67	11.68	17-2.600(4)(c)5.a. 20 ppm	2.67	111.5	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
See Project Summary	particulate	99.83	0.39 to 26.33 microns	See Proj. Sum. Sec. IV C.
Sec. III C.				
See Project Summary	TRS	N/A	N/A	N/A
Sec. III D.				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
~~natural gas~~	~~.0487 MMCF/hr~~	~~.0546 MMCF/hr.~~	~~54.68~~ ← Not capable of NG
#6 oil	325 gal/hr.	365 gal/hr.	54.68
non-condensible gases	989 SCFM	2368 SCFM	13.06

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: included in attachments.

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 32,933 ACFM 14,155 DSCFM Gas Exit Temperature: 177 °F.

Water Vapor Content: 38.1 % Velocity: 43.7 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

LIME KILNS NO.'S 1, 2, AND 3
PROJECT SUMMARY
AND
EMISSION CALCULATIONS

ST. JOE FOREST PRODUCTS COMPANY

PORT ST. JOE, FLORIDA

Prepared By

RUST INTERNATIONAL CORPORATION

Birmingham, Alabama

Rust Contract 21-2982

November 6, 1987

PROJECT SUMMARY AND EMISSION CALCULATIONS

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

I. INTRODUCTION

A. OVERVIEW

The equipment and systems described in this report are an integral part of the pulp and paper making process at the St. Joe Forest Products Company plant at Port St. Joe, Florida. A brief description of the St. Joe mill process operation is presented below:

1. Wood Preparation

In the mill woodyard, unbarked logs are fed into a giant revolving drum barker in which their bark is stripped away as they tumble against each other and the steel-channeled wall of the drum. The debarked logs from the barker are sent to chippers where, by dropping against a revolving disc with heavy, sharp knives set at an angle, they are reduced to small chips approximately 1/2 inch to 3/4 inch wide by 1/8 inch to 1/4 inch thick in size. These chips and the unscreened chips obtained from off-site chippers are conveyed to vibrating screens. Oversized chips are removed and sent to a rechipper and returned for another pass through the screens. The undesirable small chips (pin chips) and sawdust that are removed at the screens are burned in the power boiler as fuel.

The screened chips are then transported by conveyors to outside chip storage piles. They are then transported to storage silos located in the pulp mill, near the digesters in which the wood chips are cooked.

2. Pulp Manufacture

Before wood can be made into paper it must be reduced to its basic components to form pulp.

Wood is made up primarily of cellulose fibers bound together with lignin, a glue-like binder, plus sugars, gums, resins, and mineral salts in lesser quantities. The objective of pulp manufacturing is to separate the wood into fibers and other components, remove the undesirable components, and provide a means for treating the fiber to produce a suitable quality to make the desired quality paper pulp.

The St. Joe mill utilizes the sulfate pulping process for the manufacture of its linerboard product. The sulfate, or kraft process is the most common pulping process in use today. The cooking chemical, white liquor, is a solution of sodium hydroxide and sodium sulfide. As shown in Figure 1, the chips are cooked under pressure in a strong solution of sodium hydroxide and sodium sulfide in a digester. After cooking, the weak black liquor, which is separated from the pulp suspension at the stock washing stage, is concentrated in the multiple effect evaporators into strong or heavy black liquor using steam. Sodium sulfate is added to the heavy black liquor to make up for the chemical losses and the mixture is burned in the recovery furnace. The molten smelt discharging from the bottom of the furnace is dissolved in water to form green liquor, which is recausticized by adding quick lime in the causticizing area. The caustic and sodium sulfide solution, which is now called white liquor, is sent to the digester area for reuse in cooking new chips.

The washed brown stock is screened and pumped directly to an integral on-site paper mill for conversion into the finished product.

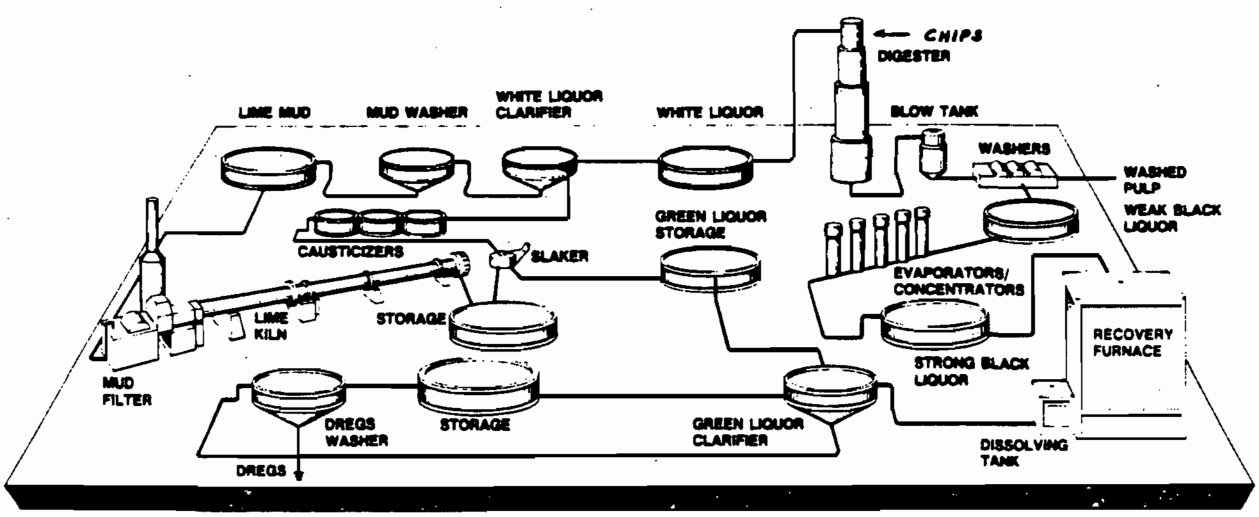

FIGURE 1

3. Paper Manufacture

Pulp, produced by the foregoing process, is made into paper in an integrated mill. The basic operations carried on in the paper mill are divided into stock preparation, paper machine, and finishing operations. The stock preparations are further divided into stock proportioning or blending and mechanical treatment. Paper machine operations are also subdivided into wet end and dry end.

a. Stock Preparation

The pulp cannot be used for papermaking as it comes directly from the pulp mill. To obtain final desired qualities, pulp having different characteristics may be blended with it, and dyes and special additives may also be included to achieve the specific color and physical properties of the sheet. These operations are referred to as stock proportioning or stock blending.

To impart mechanical strength to the final sheet, the pulp is refined in the refiners. Basically, this operation consists of passing the pulp repeatedly between rotating discs that cut and abrade the fibers. The gap between the discs is adjusted to turn out various lengths of fibers with rougher or smoother edges. This improves fiber-to-fiber bonding, making it more uniform, more dense, less porous, or more transparent, depending on the end use of paper to be made.

Before going to the paper machine, the resulting pulp slurry is screened and cleaned by passing through centrifugal-type cleaners to remove remaining heavy particles of dirt.

b. Paper Machine

1. Wet End

The major component of the wet end portion of the paper machine on which the paper is formed is a fourdrinier, consisting mainly of a continuous fine screen, called a wire, on which the pulp suspension is uniformly spread. Most of the water drains at the top end of the wire to form a mat of fibers. The wire then passes over a series of vacuum suction boxes which draw more water from the wet mat through the wire. The wet paper leaves the fourdrinier machine at a consistency of about 20 percent (20% fiber and additives, 80% water).

2. Dry End

After leaving the wet end section of the paper machine, the wet end paper is sent to the presses where it is supported by endless woven or synthetic loops called felts. The paper on top of the felts is then passed between heavy press rolls to press out as much water as possible.

The paper leaves the press section at approximately 35 percent consistency. The rest of the water is then evaporated on steam-heated rolls located in the dryer section. Endless felts carry the paper through and press it against steam-heated rolls on opposite sides.

c. Finishing

The dried paper then passes on to the finishing stage of the process. The paper goes through one more additional process, which is calendering. This process consists of ironing the paper between heavy, polished steel rollers, giving it a much smoother surface. The paper is wound in large rolls as it comes from the calenders. These are later rewound and cut into smaller rolls or sheets as required by the user.

The paper is used for corrugated cartons, folding boxes for frozen foods, and many other items. The mill also produces recycled pulp, which is made up of repulped box plant clippings from which impurities are removed.

II. TRS CONTROL PROJECT

A. OVERVIEW

The atmospheric emissions from the kraft process include both gaseous and particulate matter. The major gaseous emissions are malodorous reduced sulfur compounds, such as hydrogen sulfide (H_2S), methyl mercaptan (CH_3SH), dimethyl sulfide (CH_3SCH_3), and dimethyl disulfide (CH_3SSCH_3); oxides of sulfur (SO_x); and oxides of nitrogen (NO_x). The particulate matter emissions are primarily sodium sulfate (Na_2SO_4) and sodium carbonate (Na_2CO_3) from the recovery furnace, calcium compounds from the lime kiln and sodium compounds from the smelt tanks. The above mentioned sulfur compounds are known as Total Reduced Sulfur (TRS) which are extremely odorous, and are detectable at a concentration of only a few parts per billion.

The major regulated sources for the reduced sulfur gas emissions to the atmosphere at the St. Joe mill include digester blow and relief gases, multiple-effect evaporation hotwell vents, recovery furnace flue gases following direct contact evaporators, smelt dissolving tanks, and lime kiln exhausts.

St. Joe has employed a long term commitment to the preservation of the local environment and, through process optimizations and overdesign of present pollution control facilities, has consistently exhibited a level of odorous emissions which has been noticeably below that of similar kraft pulp and paper mills.

With the passage of the Florida TRS Rule, St. Joe has committed to a well developed, capital intensive plan to bring all TRS emission sources into full compliance with the new TRS regulations. The affected TRS sources and the selected means of TRS reduction and compliance are shown below:

Emission Source	TRS Control	Particulate Control
1. Digester Blow Gases and Vent Gases		
a. Batch Digesters	Collect & Incinerate	N/A
b. Continuous Digester	Collect & Incinerate	N/A
2. Multiple Effect Evaporator Hotwell Vents	Collect & Incinerate	N/A
3. Recovery Furnace Flue Gases		
a. No. 5 Recovery	Convert Existing Boiler to Low Odor Design	Electrostatic Precipitator
b. No. 6 Recovery	Convert Existing Boiler to Low Odor Design	Electrostatic Precipitator
c. No. 7 Recovery	Convert Existing Boiler to Low Odor Design	Electrostatic Precipitator
4. Smelt Dissolving Tanks		
a. No. 5 Recovery	Scrub Vent Gases	Install New Scrubber
b. No. 6 Recovery	Scrub Vent Gases	Install New Scrubber
c. No. 7 Recovery	Scrub Vent Gases	Install New Scrubber

Emission Source	TRS Control	Particulate Control
5. Lime Kiln Exhausts		
a. No. 1 Lime Kiln	Install New Scrubber & Improvements to Process Mud Filtering	Install New Scrubber
b. No. 2 Lime Kiln	Install New Scrubber & Improvements to Process Mud Filtering	Install New Scrubber
c. No. 3 Lime Kiln	Install New Scrubber & Improvements to Process Mud Filtering	Install New Scrubber

B. PROJECT SCHEDULE

1. Master Schedule

The TRS Control Project requires a considerable capital expenditure which must be spread out over a period to allow the available cash flow to finance the project.

A coordinated project schedule has been developed to integrate all portions of the project in a timely manner and to provide for the continuing operations and thus the profitability of the plant. The TRS Control Project schedule adopted for the St. Joe mill is shown in Figure 2.

```
TRS CONTROL PROJECT - ST JOE FOREST PRODUCTS CO.
PORT ST. JOE, FLORIDA
                                          87        |          88         |         89         |
                              Mar Apr Jun Aug Oct Dec Feb Mar May Jul Sep Nov Jan Feb Apr Jun Aug Oct Dec Jan
                              2   27  22  17  12  7   1   28  23  18  12  7   2   27  24  19  14  9   4   29

#6 RECOVERY CONVERSION        +++++++++++++++++++++++++++++++++   .   .   .   .   .   .   .   .   .   .   .
BL CONCENTRATORS                  +++++++++++++++++++++++++++++   .   .   .   .   .   .   .   .   .   .   .
KILN SCRUBBER #1                  .   .  .:XXXXXXXXXXXXXXXX .   .   .   .   .   .   .   .   .   .   .   .
COOLING TOWER EXPANSION           .   .  .: XXXXXXXXXXXXXXXXX   .   .   .   .   .   .   .   .   .   .   .
BLOW HEAT RECOV/EVAPS             .   .  .:  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.  .   .   .   .   .   .   .
TRSGAS COLL/INCINERATION          .   .  .: . XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.  .   .   .   .   .   .   .
#7 RECOVERY CONVERSION            .   .  .: .  XXXXXXXXXXXXXXXXXXXXXXXXXXXX.  .   .   .   .   .   .   .
KILN MUD FILTERS                  .   .  .: .   .   .   .   .   . XXXXXXXXXXXXXXXXXXXXXXXXX .   .   .   .
KILN SCRUBBERS #2,3               .   .  .: .   .   .   .   .   .   .  XXXXXXXXXXXXXXXXXXXX .   .   .   .
#5 RECOVERY CONVERSION            .   .  .: .   .   .   .   .   .   .   .   XXXXXXXXXXXXXXXXXXXXXXXXXX  .

-----------------------------------------------------------------------------------------------------------
Legend:  D Done        === ASAP task
         C Critical    XXX Fixed Date
                       +++ Started
         R Resource      M Milestone
           constrained ### Done
Scale: Each column equals 2 weeks
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```

FIGURE 2

The basic components of the TRS Control Project are discussed below in the order in which they appear in the schedule.

2. No. 6 Recovery Boiler Conversion and Blowheat Concentrator

The No. 6 recovery is currently on a cold-standby status and is non-operative. In the selection of recovery boiler TRS emission control technology, it is commonly accepted throughout the industry that the low odor design recovery boiler is the desired technology. The St. Joe mill operation consists of three recovery boilers, designated No. 5, No. 6 and No. 7. Recovery Boiler No. 7 is the latest of the three and was designed for a future conversion to low odor type at the time of its installation. Recovery Boilers No. 5 and No. 6, however, were not designed to be converted to low odor design and thus the conversion is extensive and requires several months of equipment outage for the conversion. A recovery boiler outage of several months would have a prohibitive social and economic impact on the community as well as the Company.

Recovery Boiler No. 6 was selected to be reactivated from cold standby and converted to low odor design, thus performing the initial step for the subsequent conversion of the two remaining recovery boilers without substantial production penalties. No. 6 Recovery is currently scheduled for completion during the second quarter of 1988, well ahead of the mandatory TRS Rule compliance date.

All of the existing recovery boilers at St. Joe are of the old design employing direct contact, or cascade evaporators which utilize hot boiler flue gas to evaporate the black liquor fuel from approximately 50 percent solids to the 65+ percent solids required for burning. The direct contact evaporator provides an opportunity for the hot flue gas to strip TRS compounds out of the black liquor and carry these airborne emissions into the atmosphere. The low odor conversion removes this cascade evaporator and thus requires that the black liquor be concentrated in equipment external to the boiler utilizing steam rather than hot flue gas.

The black liquor will be concentrated to 65+ percent solids by a concentrator which is in effect a two-body extension to the existing evaporator system. Since the converted No. 6 Recovery will not have a direct contact evaporator, its feed liquor must be approximately 65+ percent solids from the new concentrator. Thus the low odor conversion and concentrator are currently scheduled for simultaneous completion. The new concentrator has been designed to sustain the total heavy black liquor flow for the plant, thus subsequent concentrators or bodies will not have to be added when No. 7 and No. 5 Recovery Boilers are converted to low odor design. The new concentrator will operate at reduced load during the period when No. 7 and No. 5 Recovery Boilers continue to operate as old design direct contact evaporator units.

3. <u>Kiln Scrubber No. 1</u>

As indicated in the master schedule and the final compliance plan, the lime kiln area is scheduled for final compliance in late 1989.

The mill currently has three identical lime kilns which must be operated within the new compliance limits. St. Joe Forest Products will expedite the installation of control equipment on the No. 3 lime kiln. The control equipment will consist of a new wet scrubber and TRS CEM system designed to meet the final compliance requirements. This will allow the mill to optimize process conditions and conduct evaluations of various TRS reduction techniques prior to the time of final compliance. This will bring one of the three lime kilns into a condition of reduced emissions well in advance of the final compliance date, give the operating personnel more experience with the control equipment and produce data by which the final TRS compliance on all three kilns can be designed and met by the required date with a higher degree of confidence.

4. Cooling Tower Expansion

The expansion of the existing cooling tower system is not directly involved with the reduction of emissions but is required as a result of the individual TRS control systems.

The elimination of the direct contact evaporator in the No. 6 Recovery Boiler (and subsequently in No. 7 and No. 5 also) requires the installation of the black liquor concentrator. The direct contact evaporators in the recovery boilers use hot flue gas to concentrate the liquor while the black liquor concentrator will utilize live process steam to accomplish the same job. The waste heat in the recovery flue gas would exit the direct contact evaporator and be expelled to the atmosphere. The vapor from the black liquor in the concentrator must be condensed in a surface condenser since it will contain odorous compounds stripped from the black liquor. Condensing of these vapors will transfer its heat to the cooling water system used for the condensation. This heat will impart an increased load on the existing cooling water system which is presently being operated at its maximum capacity. Since the additional cooling tower heat load will be encountered when the No. 6 recovery and the concentrator are placed in operation, the currently scheduled completion for the cooling tower expansion is essentially the same as for the No. 6 recovery and the concentrator.

5. <u>Blow Heat Recovery/Evaporator</u>

One of the major sources of TRS emission is currently the batch digester blow steam venting. As each batch digester is blown into one of two blow tanks, the liberated flash (blow) steam is passed to an accumulator tank which recirculates water to condense the blow steam. The current system employs two small accumulator tanks which allow much of the odorous blow steam to escape to the atmosphere. The two small tanks will be replaced by one large tank designed to condense 100 percent of the blow steam from both of the existing blow tanks thus eliminating the atmospheric discharge of this source.

The reclaimed heat will be used in a blow heat evaporator (pre-evaporator). The pre-evaporator system will flash the hot water from the accumulator into low grade steam, and this steam will be used in a multi-effect pre-evaporator to concentrate weak black liquor to a higher percentage of solids and thus reduce the evaporation required from the remainder of the evaporation system.

The condensation of the digester blow steam will create a concentrated non-condensible gas (NCG) stream which will be collected and incinerated. This system is therefore essentially on the same completion schedule as the TRS Gas Collection/Incineration System described below.

6. <u>TRS Gas Collection/Incineration</u>

Various sources of TRS and other Non Condensible Gases (NCG) will be collected, transported and thermally incinerated for the destruction of the malodorous gases. The gases from sources of emissions such as the batch digester blow heat recovery system vent, batch digester turpentine condenser vent, continuous digester blow tank and turpentine condenser vent, and the evaporator hotwells will be transported via a collection system to the lime kiln area.

Each of the three existing lime kiln burner systems will be modified to burn the NCG. Normally only one of the kilns will be used to incinerate the NCG.

The TRS Gas Collection/Incineration system and the Blow Heat Recovery system, which is one of the major NCG sources, are currently scheduled for completion the second quarter of 1989.

7. No. 7 Recovery Conversion

Once the No. 6 Recovery Boiler has been placed in operation, the No. 7 Recovery can be shut down for its conversion to low odor design. Since this No. 7 Recovery was designed for future conversion to low odor type, its associated outage will require only several weeks, rather than the several months required for units No. 6 and No. 5.

Even after No. 6 Recovery is made operational there will still be some required reduction in mill production during its outages since the capacity of No. 6 Recovery is much less than No. 7. The conversion period for No. 7 Recovery was therefore selected to coincide with a scheduled outage period for the No. 7 Recovery Boiler, and the converted No. 6 Recovery will be available to pick up a portion of the load. The final outage for completion of the conversion is currently scheduled for end of year 1988.

8. Kiln Mud Filters and Kiln Scrubbers No. 2 and No. 3

It is currently anticipated that new lime mud filters will be required at the wet end of the three lime kilns to increase the surface area and lime mud oxidation rates prior to calcination, thus reducing the TRS formed in the kiln exhausts.

The new lime kiln scrubber and the CEM installed on one of the lime kiln stacks in an earlier phase of the TRS Control Project, and the subsequent process optimization and testing, will be used to confirm the final requirements for continuous and reliable TRS emissions compliance. The new mud filters, if required, and the two remaining kiln scrubbers are currently scheduled for completion in mid-1989.

9. <u>No. 5 Recovery Boiler Conversion</u>

The last of the individual projects for the reduction of TRS is the conversion of No. 5 Recovery to low odor design. The earlier reactivation and conversion of Recovery No. 6 will allow for No. 5 to be converted to low odor design without a reduction in mill production rate for the long outage required for the No. 5 unit. The conversion completion is currently scheduled for end of year 1989.

III. DETAIL PROCESS DESCRIPTION

A. PROCESS

The green liquor produced in the recovery boiler smelt dissolving tank is causticized by the addition of Calcium Oxide (CaO). This reaction produces Calcium Carbonate sludge, or lime mud, and white liquor. The white liquor is returned to the digester area to cook the wood chips. The lime mud is washed and calcined at high temperature in the lime kiln to recover the Calcium Oxide, which is used for processing additional green liquor in the liquor cycle. Rotary kilns are used for lime mud reburning in the SJFP kraft pulp mill. The kiln is an open-ended inclined cylinder that is rotated so that lime mud added at the upper, or wet end gradually passes to the lower end and drops out at the dry end into a bin as dry lime. Fuel and air flow countercurrently to the lime from the lower end of the kiln. The kiln exhaust gases pass through a liquid venturi scrubber for particulate control. The rotary lime kiln is fired with natural gas or oil to dry and calcine the lime mud which is fed into the wet end.

The lime mud received from the caustic area is thickened to a high degree of solids prior to being introduced into the kiln.

The two major potential air pollutants from lime kilns are the gaseous emissions and the particulate emissions of entrained lime dust from the burning zone. The gaseous emissions are H_2S from the lime mud and, possibly, organic sulfur compounds from the scrubbing water.

B. EXISTING LIME KILNS

The existing lime kiln system at SJFP consists of three identical lime kilns arranged in parallel. The kilns were originally designed to calcine approximately 7.0 tons per hour of $CaCO_3$ product per kiln. Process and equipment modifications have resulted in increasing production capacity to 10.5 tons per hour product. Lime mud is fed to three 8 ft diameter x 10 ft lime mud filters at the wet end of the kilns, with each filter dedicated to its individual kiln. Thickened lime mud at approximately 55% solids is fed from each filter through screw conveyors into the associated lime kiln.

Kilns No. 1 & 2 include burners designed for fuel oil or natural gas. The burner for kiln No. 3 is designed to fire only fuel oil. Combustion air is drawn through each kiln by Induced Draft Fans with variable speed drives, one on each kiln. The flue gas from each kiln is processed through existing Zurn venturi scrubbers for particulate matter control, and then through moisture entrainment separators and out the elevated stack. Lime mud wash water with a pH of approximately 10 is currently utilized as the scrubbing medium for the scrubbers.

C. PARTICULATE CONTROL

1. Equipment Description

A new high pressure drop venturi scrubber will be installed on each of the three lime kilns. As discussed in Section II.B., the installation of a single scrubber on existing lime kiln No. 3 will be expedited. The venturi scrubber selected for this application is a Ducon Oriclone Venturi Scrubber size 48/96, type VVO, flooded elbow, and cyclonic separator. The separator will accommodate the integral recycle tank and connect to the bottom of the existing stack. Flue gas straightening vanes will be installed in the existing stack. An environmental test station will be provided for stack testing.

2. Design Criteria

The new lime kiln scrubbers are being designed to conform to the following design criteria:

Scrubber Inlet Conditions	Design
Temperature of Flue Gas - °F	550
% Oxygen in Flue Gas - %	2.0
Dry Flue Gas Flow - DSCFM	14,155
Wet Flue Gas Flow - ACFM	45,015
% Moisture	30-40%
Particulate Load: Lbs/Hr	6162.0

Scrubber Outlet Conditions	Design
Temperature of Flue Gas - °F	177
% Oxygen in Flue Gas - %	2.0
Dry Flue Gas Flow - DSCFM	14,155
Wet Flue Gas Flow - ACFM	32,933
Outlet Particulate: Lbs/Hr	10.29

Scrubber Parameters	Design
% Particulate Removal	99.83
Venturi Pressure Drop H_2O	22.0
Scrubbing Liquid GPM	494

It is noted that the preceeding scrubbing liquid flow and venturi pressure drop are anticipated by the scrubber vendor and could be modified based on actual testing after the unit has been installed and optimized.

Figure 1 shows the relationship between the scrubber particulate removal efficiency and venturi pressure drop for the scrubber to be installed, based on typical kraft pulp mill lime kiln dust.

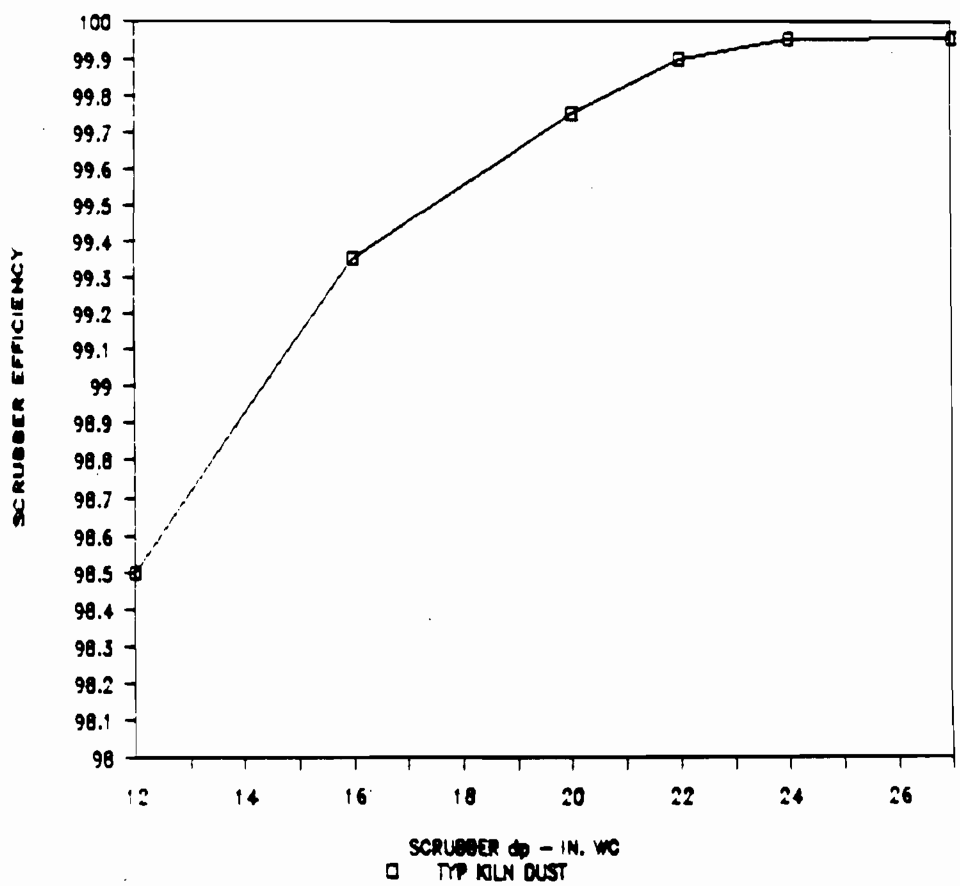


FIGURE 1

The lime kiln scrubbers are being designed such that the total particulate emission from all three kilns (operating simultaneously) will be equal to or less than the previously permitted limit from only two kilns.

D. TRS CONTROL

Sodium sulfide (Na_2S) carry-over from the causticizing eqiupment and the mud filter is responsible for most of the TRS emissions from the lime kiln. The following control strategies are included in the TRS Control Project and will be installed, either singly or in combination to reduce the TRS and NCG emissions from the three SJFP lime kilns in order to comply with the TRS Rule:

1. Substitute a clean process water stream to be used on the kiln scrubbers. The pH of the scrubber water makeup is approximately 6-7.5, and the pH of the recycled scrubbing liquid is estimated to be approximately 10.

2. Increase excess oxygen in lime kiln flue gas to a minimum 2 percent O_2 by volume or greater.

3. Modify the lime mud filtering system as required to reduce sulfur compounds in the lime kiln mud feed. This includes the installation of a new 10 ft diameter x 12 ft lime mud filter on each lime kiln sized for approximately 0.65 TPD/FT^2.

4. Add the capability to scrub flue gas with caustic soda. Since this will result in both SO_2 and NCG being removed from the flue gas, this will return sulfidity to the process, a sometimes undesirable effect. This side effect, and the high cost of caustic soda reagent, normaly argue in favor of using this option only on an intermittent basis if required during TRS emission surges.

The initial installation of the No. 3 lime kiln scrubber will include the installation of a TRS Continuous Emissions Monitor (CEM), followed by subsequent installation of CEM's on the remaining two lime kilns during the later phase of the project. The initial scrubber installation will be completed during the second quarter of 1988, with the subsequent kiln modifications scheduled for 3rd quarter 1989. This will allow 8-10 months for evaluation and testing of additional strategies designed to reliably comply with all current state and federal TRS limitations.

IV. EMISSION CALCULATIONS

A. POLLUTANTS LISTED IN TABLE 500-2

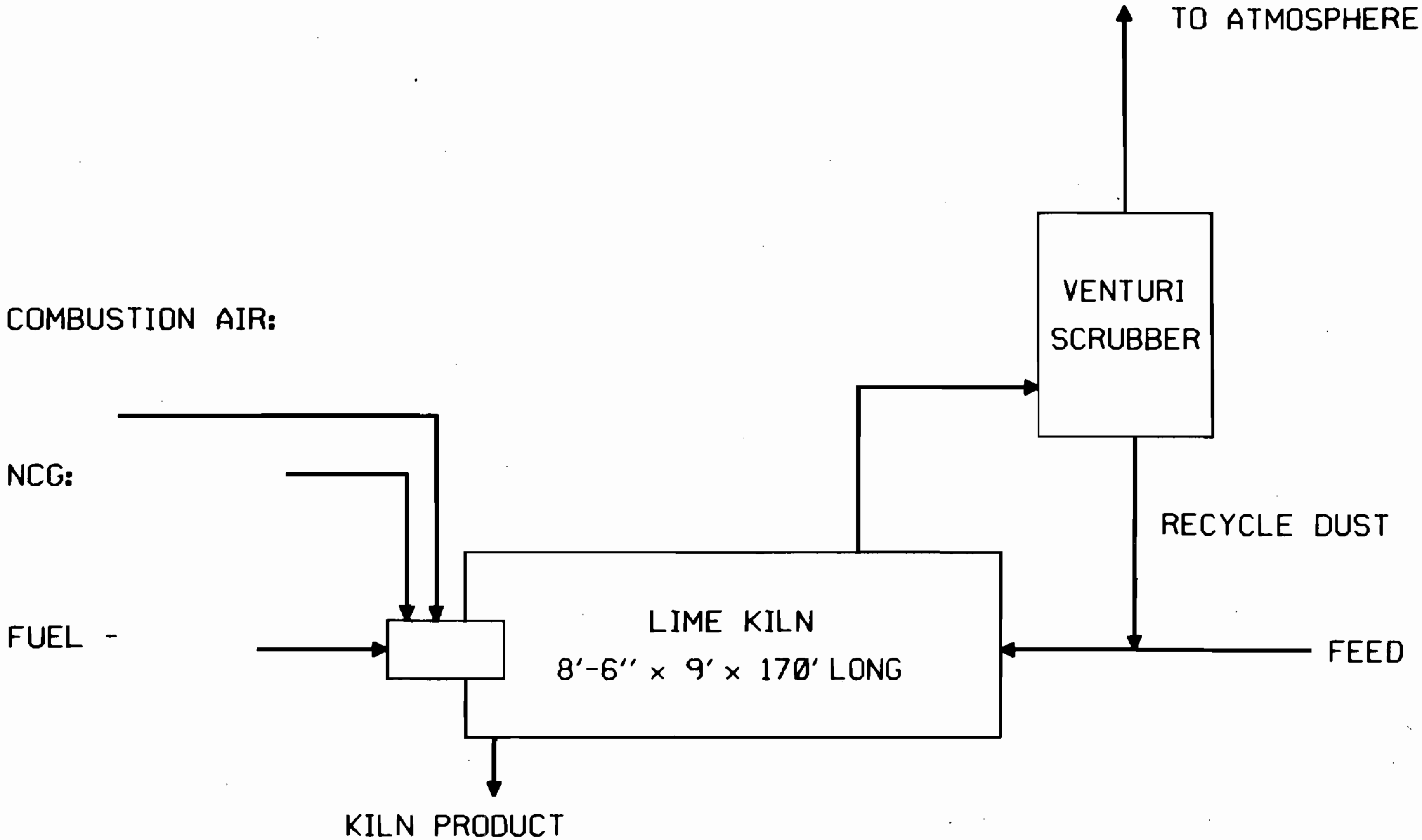
The pollutants that will be addressed in this report are:

- o Carbon Monoxide (CO)
- o Nitrogen Dioxide (NO_2)
- o Sulfur Dioxide (SO_2)
- o Particulate Matter (PM)
- o Total Reduced Sulfur (TRS) and sulfur compounds
- o Volatile Organic Compounds (VOC)

The remaining pollutants -

- o Sulfuric Acid Mist
- o Vinyl Cloride
- o Lead
- o Mercury
- o Asbestos
- o Beryllium

are not measurable in lime kiln flue gas or, to our knowledge, have never been measured and thus will not be addressed here.



B. KILN FLOW DIAGRAM

FIGURE 4-1

C. PARTICULATE MATTER

1. Maximum Allowable Limitation

The previous permit limitation is 15.43 lb/hr per kiln with two kilns in operation. The maximum allowable limit for three kilns in operation =

$$\frac{15.43 \text{ lb/hr} \times 2 \text{ kilns}}{3 \text{ kilns}} = 10.29 \text{ lb/hr per kiln.}$$

2. Calculated Emissions

Design Flow at $550^{\circ}F = 1010^{\circ}R$ and 2% O_2

$$\text{Flue Gas} = (45{,}015 \text{ ACFM}) \times \left(\frac{528^{\circ}R}{1010^{\circ}R}\right)$$

$$= 23{,}533 \text{ SCFM of Wet Gas}$$

$$H_2O \text{ Vapors} = 17{,}151 \text{ ACFM} \times \left(\frac{528^{\circ}R}{1010^{\circ}R}\right)$$

$$= 8{,}966 \text{ SCFM of } H_2O$$

Flow to Kiln Scrubber = 23,533 - 8,966 = 14,567 DSCFM

At design conditions given in Section III.C.2, dust load =

$$\frac{6162 \text{ lb/hr}}{60 \text{ min/hr}} = 102.7 \text{ lb/min}$$

$$\text{Scrubber Inlet Dust Loading} = \frac{102.7 \text{ lb}}{\text{min}} \times \frac{7000 \text{ grains}}{1 \text{ lb}} \times \frac{\text{min}}{14{,}567 \text{ DSCF}}$$

$$= 49.35 \text{ grains/DSCF}$$

Scrubber Outlet

$$\text{Dust Loading} = \frac{0.1715\ \text{lb}}{\text{min}} \times \frac{7000\ \text{grains}}{1\ \text{lb}} \times \frac{\text{min}}{14{,}567\ \text{DSCF}})$$

$$= 0.0824\ \text{grains/DSCF at } 2\%\ O_2$$

Scrubber Outlet Dust Loading Corrected to 10% O_2 =

$$\left(\frac{0.0824\ \text{grains}}{\text{SCFD}} \right) \times \left(\frac{21-10}{21-2} \right) = 0.0477\ \text{Grains/DSCF}$$

Scrubber Outlet in Lb/Hr =

$$\left(\frac{0.1715\ \text{lb}}{\text{min}} \right) \times \left(\frac{60\ \text{min}}{\text{hr}} \right) = 10.29\ \text{Lb Particulate/Hr}$$

Scrubber Efficiency =

$$\left(1 - \frac{\text{PM out}}{\text{PM in}}\right) \times 100 = \left(1 - \frac{10.29\ \text{lb/hr}}{102.7\ \text{lb/min} \times 60\ \text{min/hr}}\right) \times 100$$

$$= 99.83\%$$

D. TOTAL REDUCED SULFUR

1. Maximum Allowable Limitation

The TRS Rule for existing lime kilns is 20 ppm by volume, dry basis, corrected to 10% O_2.

$$20 \text{ ppm @ } 10\% \ O_2 = 20 \text{ ppm} \times \left(\frac{21-2}{21-10} \right) = 34.55 \text{ ppm @ } 2\% \ O_2$$

fuel oil 4-5-88 RBM

The maximum flow rate is for ~~gas~~ firing, design condition - ~~45,015~~ acfm at ~~38.1%~~ 34.2 H_2O and 2% O_2

Dry Flow = 45,015 x (1 - ~~.381~~ .342 4-5-88 RBM) = 27,864 CFM, dry basis

Correct to Standard Conditions -

4-5-88 RBM

$$\text{Flue Gas Flow} = 27{,}864 \text{ DCFM} \times \left(\frac{528^\circ R}{1010^\circ R} \right) = \cancel{14{,}567}\ 15{,}084 \text{ DSCFM}$$

Calculated Anticipated TRS Emissions =

4-5-88 4:58 PM Victor Hutcheson phone call to RBM. RBM

$$\left(\frac{\cancel{14{,}567}\ 15{,}084 \text{ DSCF}}{\text{min}} \right) \times \left(\frac{34.55 \text{ parts}}{1{,}000{,}000} \right) \times \left(\frac{1 \text{ mole}}{385 \text{ DSCF}} \right) \times$$

$$\left(\frac{34 \text{ lb } H_2S}{1 \text{ mole}} \right) \times \left(\frac{1440 \text{ min}}{\text{day}} \right) \times \left(\frac{1 \text{ day}}{24 \text{ hrs}} \right)$$

= ~~2.67~~ 2.76 lbs/hr TRS as H_2S or ~~11.68~~ 12.09 Tons TRS per year (365 days/year)

2. Potential Emissions

From AP-42 Factor Table, TRS from all three kilns = 0.75 lb S/Ton expressed as sulfur.

The potential emission, expressed as H_2S is converted as follows:

Potential TRS Emission Factor =

$$\frac{0.75 \text{ lb S}}{\text{TADP}} \times \frac{34 \text{ mole wt } H_2S}{32 \text{ mole wt S}} = 0.797 \text{ lb } H_2S/\text{TADP}$$

The maximum permitted production rates of the digester systems are as follows:

Batch Digester System	1500 TADP/Day
Continuous Digester System	800 TADP/Day
Total Potential Production	2300 TADP/Day

Total Potential TRS Emissions From Three Kilns =

$$\frac{2300\ \text{TADP}}{\text{Day}} \times \frac{0.797\ \text{lb TRS}}{\text{TADP/Day}} \times \frac{\text{Day}}{24\ \text{Hr}} = 76.38\ \text{lb TRS/Hr}$$

Potential TRS Emission Per Kiln =

$$\frac{76.38\ \text{lb/hr}}{3\ \text{kilns}} = 25.46\ \text{lb TRS/Hr or } 111.5\ \text{Tons TRS/Yr}$$

(365 Days/Year)

E. SULFUR DIOXIDE

The total SO_2 generated in the lime kiln from the incineration of NCG is calculated to be 708.45 lbs SO_2 per hour.

NCASI has been consulted and studies have shown that approximately 99% of all SO_2 generated in the lime kiln from the NCG is scrubbed out of the flue gas in the kiln and in the wet scrubber.

SO_2 in kiln scrubber exhaust =

708.45 lb SO_2/Hr X (1-.99) =

7.08 lb SO_2/Hr = 31.03 Tons SO_2 per year

F. NITROGEN OXIDES

1. Hourly Maximum and Potential Emissions

Reference NCASI Technical Bulletin NO. 107, "A Study of Nitrogen Oxides Emissions from Lime Kilns". This document indicates NO_x emissions are highly variable from lime kilns fired with oil and/or gas. Because of this variability, the highest measured emission factor was used: 1.125 lb/10^6 BTU.

Lime kiln heat input = 141.2 TPD x 9.3 x 10^6 BTU/ton /24 hr/day

= 54.72 x 10^6 BTU/hr

54.72 x 10^6 BTU/hr x 1.125 lb/10^6 BTU = 61.6 lb/hr NO_x/kiln

2. Estimated Annual Potential Emissions

From NCASI Technical Bulletin No. 107, Table 3, average (of low and high points of range) NO_x emissions from gas firing were 0.73 lb/10^6 BTU. This average factor was used for estimation of annual emissions for gas firing.

Average Hourly = 54.72 x 10^6 BTU/hr x 0.73 lb/10^6 BTU

= 39.95 lb/hr NO_x/kiln

39.95 lb/hr x 8,760 hr/yr / 2,000 lb/ton = 175 TPY NO_x/kiln

G. CARBON MONOXIDE

1. Maximum and Potential Emissions

Reference NCASI Technical Bulletin NO. 416, Carbon Monoxide Emissions from Selected Combustion Sources Based Upon Short-Term Monitoring Records". This document indicates CO emission from lime kilns to be variable. Table 6 for older kilns (Kiln C) indicates 0.08 lb of CO per million BTU.

$$\frac{141.2 \text{ Tons}}{\text{day}} \times \frac{9.3\text{x}10^{6} \text{ BTU}}{\text{Ton}} \times \frac{0.08 \text{ lb CO}}{1\text{x}10^{6} \text{BTU}} \times \frac{1 \text{ day}}{24 \text{ hour}} =$$

4.38 lb CO/Hr/Kiln = 19.17 Tons CO per year

H. VOLATILE ORGANIC COMPOUNDS

1. Maximum and Potential Emissions

Reference NCASI Technical Bulletin No. 358, "A Study of Kraft Process Lime Kiln Total Gaseous Non-Methane Organic Emissions". Three kilns were tested. Kiln A was considered most representative of the three existing kilns. The emissions averaged 0.41 lb/ton CaO, with a maximum value of 0.96 lb/ton CaO.

Based upon average values, emissions are 2.4 lb/hr for each kiln, or 7.24 lb/hr, for all three kilns. This value equals 10.56 TPY/kiln.

Based upon maximum values, emissions are 5.65 lb/hr, for each kiln, or 16.95 lb/hr for all three kilns. This equals 24.75 TPY/kiln.

It is estimated that the destruction of NCG in the kiln will not contribute anything to the above estimated values.

I. PROCESS CALCULATIONS

Lime Mud ($CaCO_3$) Utilization Rate at 100% availability CaO = 21,008 lbs $CaCO_3$/hr.

Product Weight (lbs/hr of $CaCO_3$) at 100% availability CaO. Converted to CaO:

$$21,008 \text{ lbs/hr} \times \frac{56}{100} \frac{(CaO\ \ )}{(CaCO_3} = 11,764 \text{ lbs CaO/hr}$$

Total Process Product Rate and Input Rate Calculation

Assume 20% recirculation rate (i.e. only 80% of wet end feed will exit as product and 20% will be carried out by flue gas and be captured by the venturi scrubber). This recycle rate is based on the experience of Rust International Corporation. The dust captured by the Venturi Scrubber is pumped with the scrubber water to the lime mud washer and thus the dust is recycled into the kiln and represents a dead load recycled through the kiln.

The product is 90% available lime. This is based on laboratory test results.

Basic Equation:

$$\underset{MW=100}{\overset{1.0 \text{ lb}}{CaCO_3}} \xrightarrow{\text{Heat}} \underset{MW=56}{\overset{0.56 \text{ lb}}{CaO}} + \underset{MW=44}{\overset{0.44 \text{ lb}}{CO_2}}$$

At 90% lime availability the inerts = 10% of the product rate.

$$\text{Inerts} = 0.1\ (\text{Product CaO} + \text{Inerts})$$

$$= 0.1\ (11{,}764 + \text{Inerts}) = 11{,}764 + .1\ \text{Inerts}$$

$$.9\ \text{Inerts} = 11{,}764\ \text{lbs/hr}$$

$$\text{Inerts} = \frac{1176\ \text{lbs/hr.}}{.9} = 1307\ \text{lb/hr}$$

Therefore the total product rate is the sum of the CaO product and the inerts.

Total Product Rate = 11,764 + 1307 lb/hr = 13,071 lb/hr

Basic Equation at 90% CaO:

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inert}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244}$$

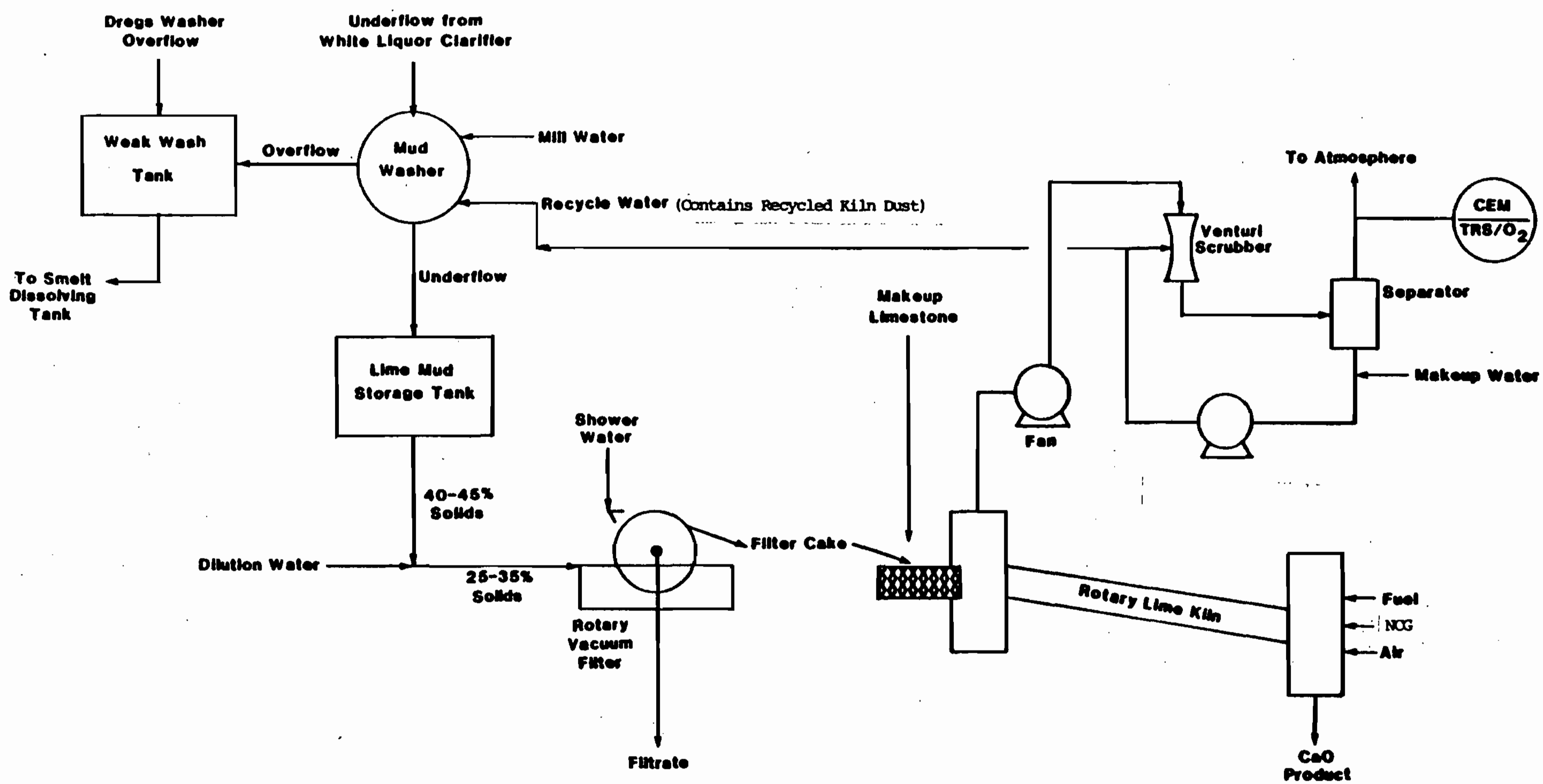
Therefore the total process input rate is 1307 + 21,008 = 22,315 lbs/hr.

Basic Equation at 90% CaO with 20% scrubber capture recirculation:

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} + \underbrace{\underset{CaCO_3}{5579}}_{\text{Recycle}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inerts}}{1307}}_{\text{Products}} + \underset{CO_2}{9{,}244} + \underset{CaCO_3}{5579}$$

Therefore the total process input rate including recycle is 1307 + 21008 + 5579 = 27,894 lbs/hr

V. ATTACHMENTS



St. Joe Forest Products Co.
Lime Kiln System - 3 Kilns In Parallel

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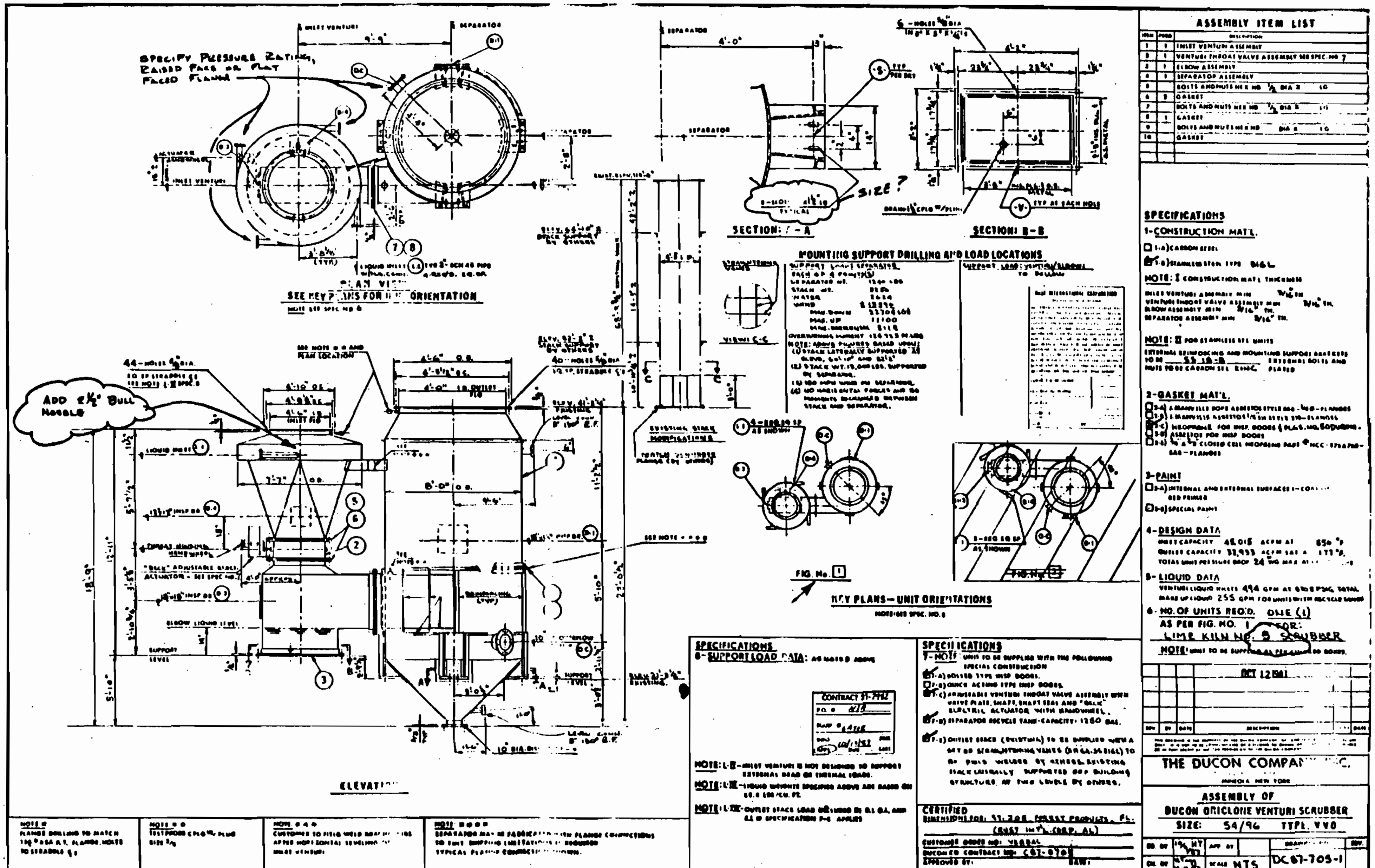

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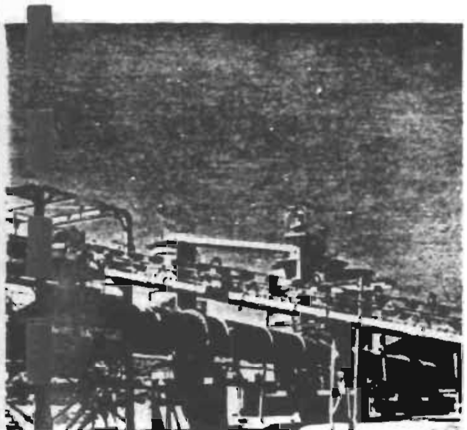
Controlling Emissions from Lime Kilns and Slakers

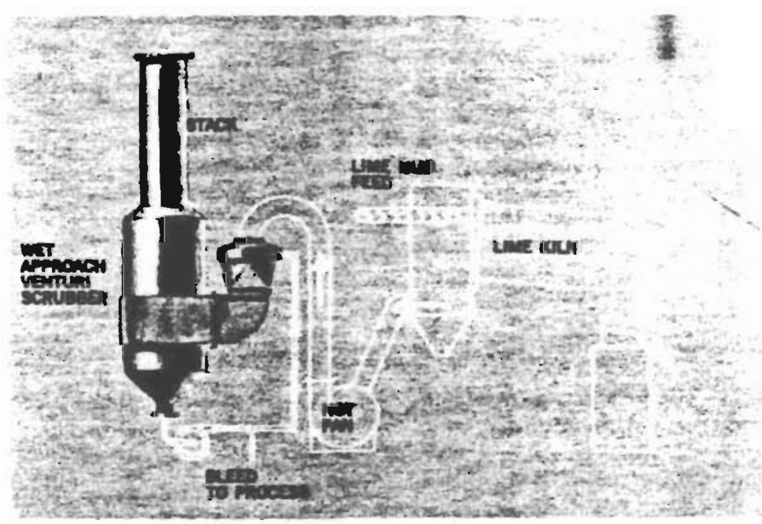
The treatment of green liquor with hydrated lime to produce white liquor for the digestors involves two sources of dust emission and air pollution — the lime kiln and the lime slaking system.

The lime kiln system:

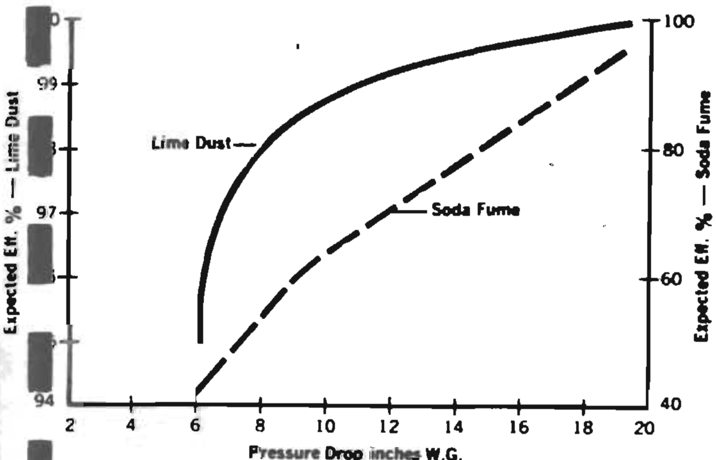
In both Rotary and Fluid Bed Lime Kiln Systems, the lime is fed as mud (55-65% solids) and calcined to active lime oxide. The particulate matter emitted is coarse calcium oxide and submicron soda fume, ranging from 10 to 20 grains per scf. Today, most mills specify dust removal efficiencies of 99+% on lime dust as CaO, up to 95% of Na_2O depending upon soda content. Generally, soda emission can be reduced by adequate washing and kept below 1% in the mud feed. For controlling lime kiln emissions, the Ducon high efficiency wet approach Venturi is recommended. The wetted wall venturi inlet eliminates wet-dry line build-up and allows direct recycle of high (0-40%) solids slurry. The externally adjustable throat is used to control the pressure drop and gas flow. The unit is self-cleaning, with no nozzles or trays to plug. Efficiency of the wetted wall venturi can be varied between 95 and 99.9%, depending on pressure drop.



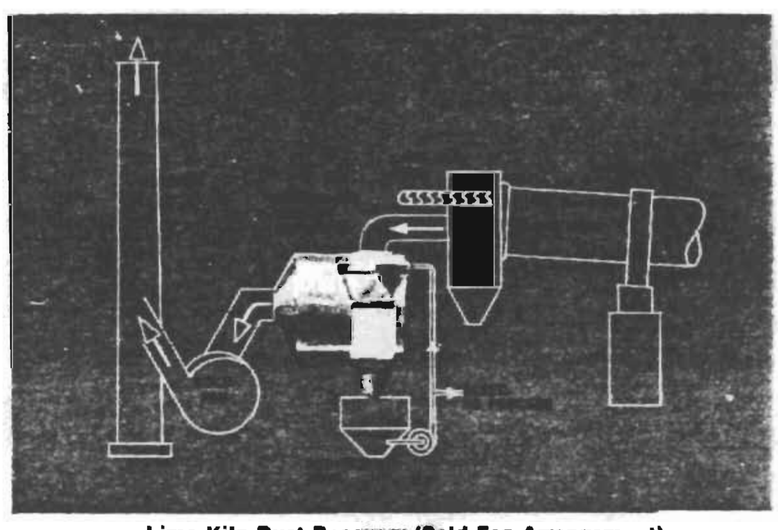
Du[illegible]n Scrubber installation on lime kiln.



Lime Kiln Dust Recovery (Hot Fan Arrangement)



The above curve indicates expected removal efficiencies of lime dust and soda fume based on inlet dust loading of 10 grains per scf with soda content.



Lime Kiln Dust Recovery (Cold Fan Arrangement)

Table 25
Range of analyses of fuel oils

Grade of Fuel Oil	No. 1	No. 2	No. 4	No. 5	No. 6
Weight, percent					
Sulfur	0.01-0.5	0.05-1.0	0.2-2.0	0.5-3.0	0.7-3.5
Hydrogen	13.3-14.1	11.8-13.9	(10.6-13.0)*	(10.5-12.0)*	(9.5-12.0)*
Carbon	85.9-86.7	86.1-88.2	(86.5-89.2)*	(86.5-89.2)*	(86.5-90.2)*
Nitrogen	Nil-0.1	Nil-0.1	—	—	—
Oxygen	—	—	—	—	—
Ash	—	—	0-0.1	0-0.1	0.01-0.5
Gravity					
Deg API	40-44	28-40	15-30	14-22	7-22
Specific	0.825-0.806	0.887-0.825	0.966-0.876	0.972-0.922	1.022-0.922
Lb per gal	6.87-6.71	7.39-6.87	8.04-7.30	8.10-7.68	8.51-7.68
Pour point, F	0 to −50	0 to −40	−10 to +50	−10 to +80	+15 to +85
Viscosity					
Centistokes @ 100F	1.4-2.2	1.9-3.0	10.5-65	65-200	260-750
SUS @ 100F	—	32-38	60-300	—	—
SSF @ 122F	—	—	—	20-40	45-300
Water & sediment, vol %	—	0-0.1	tr to 1.0	0.05-1.0	0.05-2.0
Heating value					
Btu per lb, gross (calculated)	19,670-19,860	19,170-19,750	18,280-19,400	18,100-19,020	17,410-18,990

* Estimated.

Table 27
Selected samples of natural gas from United States fields

Sample No. / Source of Gas	1 Pa.	2 So. Cal.	3 Ohio	4 La.	5 Okla.
Analyses					
Constituents, % by vol					
H_2 Hydrogen	—	—	1.82	—	—
CH_4 Methane	83.40	84.00	93.33	90.00	84.10
C_2H_4 Ethylene	—	—	0.25	—	—
C_2H_6 Ethane	15.80	14.80	—	5.00	6.70
CO Carbon monoxide	—	—	0.45	—	—
CO_2 Carbon dioxide	—	0.70	0.22	—	0.80
N_2 Nitrogen	0.80	0.50	3.40	5.00	8.40
O_2 Oxygen	—	—	0.35	—	—
H_2S Hydrogen sulfide	—	—	0.18	—	—
Ultimate, % by wt					
S Sulfur	—	—	0.34	—	—
H_2 Hydrogen	23.53	23.30	23.20	22.68	20.85
C Carbon	75.25	74.72	69.12	69.26	64.84
N_2 Nitrogen	1.22	0.76	5.76	8.06	12.90
O_2 Oxygen	—	1.22	1.58	—	1.41
Specific gravity (rel to air)	0.636	0.636	0.567	0.600	0.630
Higher heat value					
Btu/cu ft @ 60F & 30 in. Hg	1,129	1,116	964	1,002	974
Btu/lb of fuel	23,170	22,904	22,077	21,824	20,160

LABORATORY ANALYSIS REPORT

E.W. SAYBOLT & CO., INC.

OFFICE GARYVILLE, LOUISIANA

BEST AVAILABLE COPY

CUSTOMER REF. NO.: RGLS-85173

DATE: JANUARY 16, 1986

~~VESSEL~~ TANK(S): 200-6

LABORATORY NO.:

INVOICE NO.: (IV) #5036

DESCRIPTION

Sample designated as:
NO. 6 FUEL OIL

Identifying Marks:
SHORE TANK 200-6 SAMPLED
AT MARATHON PETROLEUM COMPANY
BEFORE LOADING BARGES:
"HOLLYWOOD-3004 & 3008"

Submitted by:
E.W. SAYBOLT & COMPANY, INC.

Client:
A/C MARATHON PETROLEUM COMPANY
C/O STUART PETROLEUM COMPANY

NOTES

— This laboratory report may not be published or used except in full. It shall not be used in connection with any form of advertising unless written consent is received from an officer of E. W. Saybolt & Co., Inc.
— Results were based on analysis made at the time samples were received at the laboratory.
— Samples, if any, shall be retained for a period of 45 days unless a longer period is requested in writing.
— Sample nomenclature is designated by the customer.

ANALYSIS

D287	GRAVITY, API @ 60 DEG F	12.6
	TOP	12.6
	MIDDLE	12.6
	BOTTOM	12.5
D93	FLASH POINT, PMCC	166 DEG F
D445	VISCOSITY, S.F. @ 122 DEG F	204 SECS.
	TOP	205 SECS.
	MIDDLE	202 SECS.
	BOTTOM	204 SECS.
D97	POUR POINT	35 DEG F
D95	WATER BY DISTILLATION	0.05%
D473	SEDIMENT BY EXTRACTION	0.07%
D1552	SULFUR	2.92%
	TOP	2.93%
	MIDDLE	2.91%
	BOTTOM	2.92%
D482	ASH CONTENT	0.06%
D189	CARBON RESIDUE, CONRADSON	16.1%
D240	THERMAL VALUE: BTU/LB.	18,383
D240	THERMAL VALUE: BTU/GAL.	149,963
AA	VANADIUM	147 PPM
AA	SODIUM	15 PPM
IP143	ASPHALTENES	8.8%
AA	SILICON	12 PPM
AA	ALUMINUM	14 PPM

MEMBERS ASTM – API – SAE

E. W. SAYBOLT & CO., INC.

FORM NO LAB 200 (7/84)—2

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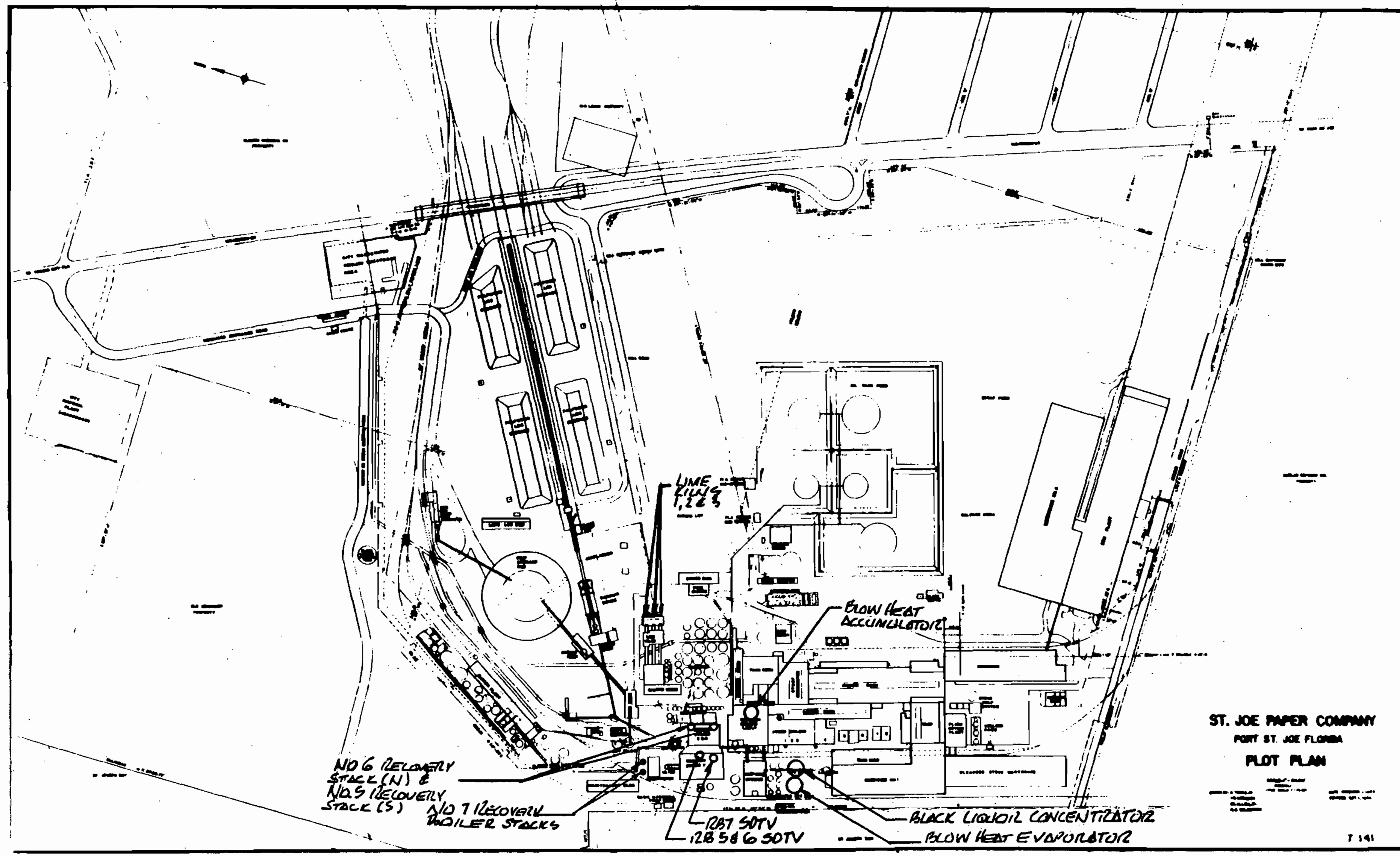

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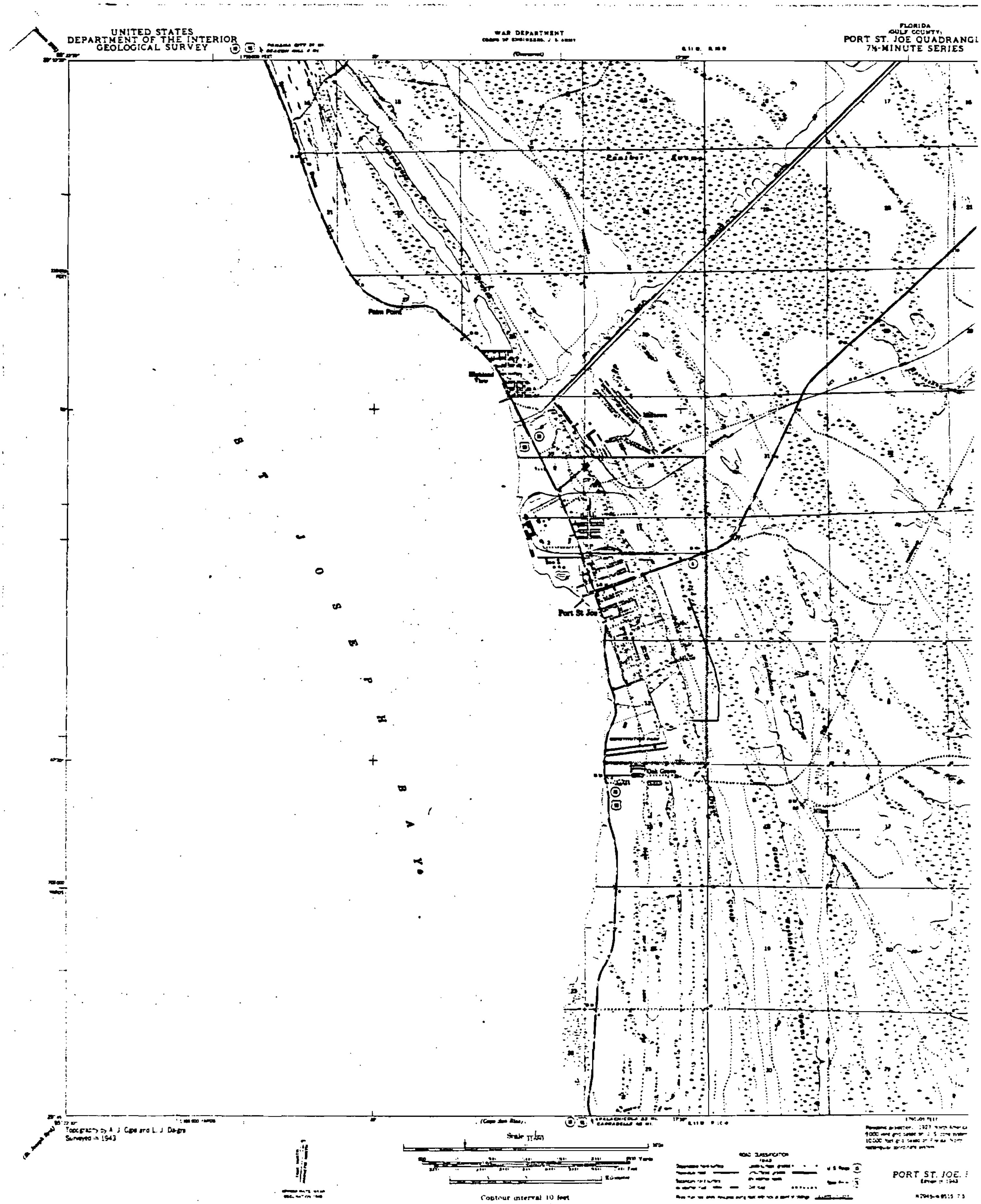

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

Bruce - FYI
TC

St. Joe FOREST PRODUCTS COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

October 16, 1987

RECEIVED
OCT 19 1987

Mr. Jack Preece
Department of Environmental Regulation
160 Governmental Center
Pensacola, Florida 32501

Dear Mr. Preece: Re: Interim Operating Permits' Revisions for TRS Sources

In an effort to expedite the permitting process to comply with the TRS Rule, the Central Air Permitting group in Tallahassee has suggested we amend our interim operating permits for TRS sources. Please consider this letter as our formal request for necessary revisions to these permits. Based on our discussions with CAPS in Tallahassee and yesterday's telephone conference with you, we request permit changes as follows.

1. #5 Recovery Boiler, Permit #AO23-96175 - Change the existing permitted operating rate from 900,000 lbs/day black liquor solids to 1,200,000 lbs/day black liquor solids. Issue a separate Operating Permit for the smelt dissolving tank. The permit change will be contingent upon tests at the higher firing rate with particulate emissions limited to a total of 1,035 lbs., the sum of emissions from the precipitator and smelt dissolving tank. After conversion of this unit to low odor, the boiler will be limited to 900 lbs/day particulate and the smelt tank will be limited to 135 lbs/day (0.45 lbs/3000 lbs. black liquor solids) per our agreement with CAPS. Testing at the higher rate is tentatively scheduled for the week of October 26, 1987, pending your approval. The TRS limit will be 17.5 ppm for the boiler and .048 lbs/3000 lbs. BLS for the smelt tank.

2. #6 Recovery Boiler, Permit #AO23-96174 - We request the same permitted rate for #6 Recovery Boiler as requested for #5 Recovery Boiler. No. 6 Recovery Boiler is adjacent to #5 Recovery Boiler. Both boilers are by the same manufacturer and were constructed at the same time as identical units. Test results from #5 Recovery Boiler should, therefore, be applicable to #6 Recovery Boiler. Compliance tests for #6 Recovery Boiler will be conducted following boiler repair and conversion to low odor. The boiler and smelt tank will be permitted the same as #5 Recovery Boiler with the same emissions limitations.

3. #7 Recovery Boiler, Permit #A023-96177 - Change the existing permitted operating rate from 3,180,000 lbs/day black liquor solids to 3,600,000 lbs/day black liquor solids. Issue separate Operating Permits for the smelt dissolving tanks. The permit change will be contingent upon tests at the higher firing rate with particulate emissions limited to a total of 3657 lbs., the sum of emissions from the precipitator and smelt dissolving tank. After conversion of this unit to low oder, the boiler will be limited to 3180 lbs/day particulate and the two (2) smelt tanks will be limited to a total of 477 lbs/day (0.45 lbs/3000 lbs. black liquor solids) per our agreement with CAPS. Testing at the higher rate is tentatively scheduled for the week of October 26, 1987 pending your approval. The TRS limit will be 17.5 ppm for the boiler and .048 lbs/ 3000 lbs. BLS for the smelt dissolving tanks.

4. Multiple Effect Evaporators No's. 2, 3, and 4, Permit #A023-106808 - Change the existing permitted rate from 417,000 lbs/hr. black liquor at 14% solids for each of #2 and #3 sets to 500,000 lbs/hr. black liquor at 14% solids. Change #4 set from 805,000 lbs/hr. black liquor at 14% solids to 925,000 lbs/hr. black liquor at 14% solids.

5. #1 Accumulator Tank, Permit #A023-92146 - Change existing permit from 837 tons ADP/day to 900 tons ADP/day. This accumulator tank and #2 Accumulator tank will be replaced by a new single accumulator tank. This tank will be part of a single digester system. TRS gases from this accumulator will be discharged to an NCG system.

6. #2 Accumulator Tank, Permit #A023-92142 - Change existing permit from 558 tons ADP/day to 600 tons ADP/day. This tank will be replaced as explained above.

7. Batch Digesters' Turpentine Condenser, Permit #A023-92145 - Change existing permit to 1500 tons ADP/day for ten (10) batch digesters. The batch digesters' turpentine condenser will be upgraded as part of the TRS program. TRS gases from this source will be discharged to the NCG system.

8. Lime Kiln No's. 1, 2, and 3, Permits No's. A023-96171, 96172, and 96173 The present permitted operating rate of 10.50 tons/hr. of $CaCO_3$ input per kiln is the desired rate. We would like the interim Operating Permits changed to allow the operation of all three (3) kilns at the same time. We agree to retain the existing limitation of 30.86 lbs/hr. total particulate emission even if all three (3) kilns were to be operated at the maximum rate. During the interim, we will continue to operate the kilns so as not to exceed the particulate limit of 30.86 lbs/hr. After the new scrubbers are installed, we will conduct compliance tests to demonstrate that the 30.86 lbs/hr. particulate limitation will be met at the maximum operating rate with three (3) kilns operating simultaneously.

We appreciate the efforts you and the other District Office people have put into this permitting process. We believe we have made real progress. I hope these requested changes will hasten the day when the necessary Construction Permits are granted. Please direct any questions to may attention.

Yours very truly,

ST. JOE FOREST PRODUCTS COMPANY

Lewis W. Taylor

Lewis W. Taylor
Environmental Coordinator

LWT:mak

cc: Mr. Harold Quackenbush
Mr. Robert Nedley
Mr. Ferrel Allen
Mr. Noel Phillips
Mr. Vic Hutcheson
Mr. Terry Cole

Copied: B. Mitchell
N. Harley
B. Thomas

File#'s: AC 29-136376, 377, 378
23-131963

P 274 007 679

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to R. E. Nedley	
Street and No. St. Joe Forest Products Co. P.O. Box 190	
P.O., State and ZIP Code Port St. Joe, FL 32456-0190	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 10/2/87 AC 23-136376, -136377, -136378	

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
R. E. Nedley, V.P.
St. Joe Forest Products Company
P.O. Box 190
Port St. Joe, FL 32456-0190

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 274 007 679

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X Eric L. McRay

6. Signature – Agent
X

7. Date of Delivery
10-6-87

8. Addressee's Address (*ONLY if requested and fee paid*)
202 Monument

DOMESTIC RETURN RECEIPT

file copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

DEPARTMENT OF ENVIRONMENTAL REGULATION
STATE OF FLORIDA

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

October 2, 1987

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. R. E. Nedley
Vice President
St. Joe Forest Products Company
P.O. Box 190
Port St. Joe, Florida 32456-0190

Dear Mr. Nedley:

Re: Completeness Review for Applications to Construct
AC23-136376, -136377 and -136378

The Department received Mr. Lewls W. Taylor's cover letter and supplemental material, dated September 1, 1987, on September 3, 1987. Based on a review of this material, the above referenced applications are deemed incomplete. The following information, including all assumptions, calculations and reference material, shall be submitted to the Bureau of Air Quality Management before their status can, again, be ascertained:

1) What is the maximum gas flow rate in scfm through each of the existing scrubber systems?

2) For the last 5 years, what has been the actual process through-put rate of $CaCO_3$ for each lime kiln on an average hourly basis and annual basis? What has been the maximum hourly process through-put rate per lime kiln for the same time frame?

3) For the last five years and per lime kiln, what are the dates that the lime kilns have been shut-down and brought back on-line?

4) Once the initial $CaCO_3$ loss to the scrubber, which you labeled as "recycle", is made-up for in the first hour, please justify any further make-up beyond the initial make-up and what is the disposition of the collected $CaCO_3$? Provide a material and chemical balance for each causticizing system, including the number and size of all appurtenances, such as storage tanks, bins, etc., and show all losses, discardings, etc. Provide a detailed analysis and flow scheme of the scrubber medium per lime kiln/causticizing system.

Mr. R. E. Nedley
Page 2
October 2, 1987

5) What is the maximum process through-put capacity for each of the existing lime kilns? Are these capacities greater than what has been permitted? If so, please justify and explain, including any vendor guarantees, documentation, engineering calculations, etc.

6) Are the burners that are being used as the heat sources for each existing lime kiln being altered or replaced? If so, explain and provide specifications, which should include the maximum firing rate of the fuel and the maximum Btu/hr heat input rate.

7) What is the present scrubbing medium being used? Will this change with the proposed scrubber systems? If so, please explain.

8) What is the pH of the present and proposed scrubbing medium?

If there are any questions, please call Bruce Mitchell at (904) 488-1344 or write to me at the above address.

Sincerely,

for D H Thomas

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CF/BM/ss

cc: Jack Preece, NW Dist.
Betsy Pittman, Esq.
Lewis W. Taylor
Victor L. Hutcheson, P.E.

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe PAPER COMPANY

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

DER
SEP 30 1987
BAQM

September 28, 1987

AC 23-136376-78

Mr. Steve Smallwood
Bureau Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Smallwood:

I would like to take this opportunity to express my sincere appreciation to you for the time taken from your busy schedule on September 17, 1987 to meet with the representatives of St. Joe concerning our TRS Compliance Plan. The time granted us by you and your staff past normal working hours was "above and beyond the call of duty" and we are most grateful.

Your presence and sincere assistance in solving the apparent problems with our No. 6 recovery boiler permit application has restored my faith in the system. Without your valuable guidance at the meeting, I believe both of our staffs would have continued to argue the details of their respective positions for months. I am confident that we can now proceed forward with our common goal of reducing TRS emissions at our Port St. Joe Mill.

St. Joe is committed to the TRS Compliance Plan presented at the meeting and I cannot stress enough the importance of maintaining the time schedule of the plan. I am very concerned that delays in the schedule would subject the TRS budget funds to retraction by the Board of Directors of St. Joe for utilization on other projects at various subsidiaries. Such action could, along with possible economic downturns within the next few years, place us in a position of having to reduce our proposed plan and possibly requesting delays in compliance for certain sources. Because of the above reasons, I am requesting that you continue to monitor our situation as permit applications are submitted for the remaining sources at the mill.

Again, I thank you for your valuable assistance and the time allowed by your staff for the September 17, 1987 meeting with us.

Sincerely,

ST. JOE FOREST PRODUCTS COMPANY

R. E. Nedley

R. E. Nedley
Vice-President

REN/crm

Copied: Mike Harley
CHF/BT
All files
3-1-88 mr

No envelope
∴ no PM Dt.

File copy

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe Paper Company

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

September 1, 1987

DER
SEP 3 1987
BAQM

Mr. Clair Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Your letter of 7/30/87 concerning Construction Permit No's . AC23-136376, -136377, and -136378

Based on consultations with your staff, we desire at this time to amend our Construction Permit Applications of June 30, 1987 to reflect present permitted conditions. Enclosed are four (4) copies of the affected pages for each kiln permit, together with a calculation sheet showing the derivation of all numerical values.

At this time, we seek only to replace the existing scrubbers with improved units with no change in the process through-put rate of $CaCO_3$ per source or overall total.

We look forward to working with you in expediting the permitting process.

Yours very truly,

ST. JOE FOREST PRODUCTS COMPANY

Lewis W. Taylor

Lewis W. Taylor
Environmental Coordinator

LWT:mak

Enclosures

cc: Mr. Harold Quackenbush
Mr. Robert Nedley
Mr. Ferrel Allen
Mr. Noel Phillips
Mr. J. Pruce - NW Dist. - 9/3/87

ST. JOE CONTAINER COMPANY, WITH CORRUGATED CONTAINER PLANTS LOCATED IN:

ATLANTA, GEORGIA • BALTIMORE, MARYLAND • BIRMINGHAM, ALABAMA • CHARLOTTE, NORTH CAROLINA • CHESAPEAKE, VIRGINIA • CHICAGO, ILLINOIS
DALLAS, TEXAS • DOTHAN, ALABAMA • SOUTH HACKENSACK, NEW JERSEY • HARTFORD CITY, INDIANA • HOUSTON, TEXAS • LAKE WALES, FLORIDA
LAURENS, SOUTH CAROLINA • LOUISVILLE, KENTUCKY • MEMPHIS, TENNESSEE • PITTSBURGH, PENNSYLVANIA • PORT ST. JOE, FLORIDA • ROCHESTER, NEW YORK
WILMINGTON, DELAWARE • NEW ENGLAND CONTAINER DIVISION CHICOPEE, MASSACHUSETTS

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe: ______________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

a. If yes, has "offset" been applied? __________

b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

c. If yes, list non-attainment pollutants. ______________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

a. If yes, for what pollutants? ______________________________

b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

Raw Materials and Chemicals Used in your Process, if applicable:

scription	Contaminants Type	Contaminants % Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	Particulate	see below	21,008 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$
2. Product Weight (lbs/hr): 11,764 lbs/hr. (CaO at 100% availability)

Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of ontaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission lbs/yr	Potential[4] Emission T/yr	Relate to Flow Diagram
Particulate	10.29 -	15.43	See Attached Letter	15.43		26,990	
TRS @ H_2S	2.35		17-2.600 (4) (c) 5.a.20 ppm	2.35		91.81	

Section V, Item 2.

erence applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, (1) - 0.1 pounds per million BTU heat input)

lculated from operating rate and applicable standard.

ission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0503 MMCF/hr.	.0529 MMCF/hr.	52.98
#6 Oil	338 gal/hr.	375 gal/hr.	56.29
Non-condensible gases	1569 SCFM	2,141 SCFM	11,080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

DESIGN BASIS

1. Temperature — 550° F
2. Flue Gas ACFM — 42,477
3. Dust Loading Lbs/Min — 102.7
4. Particulate Loading: Inlet 53.90 gr/scfd — Oulet .0905 gr/scfd
5. % Particulate Removal — 99.83

Calculations

1. Section III:

   A. Lime Mud ($CaCO_3$) Utilization Rate at 100% availability CaO = 21008 lbs/$CaCO_3$hr.

   B. Product Weight (lbs/hr) at 100% availability CaO

   21,008 lbs/hr $CaCO_3$ input at 100% availability

   Converting to CaO: 21,008 lbs/hr. X $\frac{56}{100}$ $\frac{(CaO\ \ )}{(CaCO_3)}$ = 11,764 lbs/hr CaO

   C. Total Process Product Rate and Input Rate Calculation

   1. Assume 20% recirculation rate (i.e. only 80% of wet end feed will exit as product and 20% will be carried out by flue gas and captured by the venturi scrubber). This recycle rate is based on the experience of Rust International Corporation.

   2. The product is 90% available lime. This is based on laboratory test results.

   3. Basic Equation:

   $$\underset{MW=100}{\overset{1.0\#}{CaCO_3}} \xrightarrow{\text{Heat}} \underset{MW=56}{\overset{0.56\#}{CaO}} + \underset{MW=44}{\overset{0.44\#}{CO_2}}$$

   4. At 90% lime availability the inerts = 10% of the product rate.

   Inerts = 0.1 (Product CaO = Inerts)

   = 0.1 (11,764 + Inerts) = 11,764 + .1 Inerts

   .9 Inerts = 11,764 lbs/hr.

   Inerts = $\frac{\text{1176 lbs/hr.}}{.9}$ = 1307 lb/hr.

   Therefore the total product rate is the sum of the CaO product and the inerts.

   Total Product Rate = 11,764 + 1307 lb/hr. = 13,071 lb/hr.

5. Basic Equation at 90% CaO

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inert}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244}$$

6. Therefore the total process input rate is 1307 + 21,008 = 22,315 lbs/hr.

7. Basic Equation at 90% CaO with 20% scrubber capture recirculation.

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} + \underset{\substack{CaCO_3\\ \text{Recycle}}}{5579} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inerts}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244} + \underset{CaCO_3}{5579}$$

8. Therefore the total process input rate including recycle is
1307 + 21008 + 5579 = 27,894 lbs/hr.

D. Contaminants:

1. Particulate - The scrubber is designed to control the stack emission to 10.29 lbs/hr. to provide operating flexibility. The current permit limit is 15.43 lbs/hr/kiln with two kilns in operation.
10.29 lbs/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 45.07 t/yr.
Potential = 102.7 lbs/min dust loading X 60 min/hr X 24 hr/day X 365 days/yr ÷ 2000lbs/ton = 26,990 t/yr.

2. TRS:

$$42{,}477 \text{ ACFM} \times \frac{(70 + 460)}{(550 + 460)} \times \frac{20}{1{,}000{,}000} \times \frac{1}{387} \times 34 = .0392 \text{ lb/min.}$$

.0392 lbs/min. X 60 min/hr. = 2.35 lbs/hr.
2.35 lbs/hr. X 24 hr/day X 365 days/yr. ÷ 2000 lbs/ton = 10.29 t/yr.
Potential emission: from AP42 TRS = 0.75 lbs/ton ADP
1400 t/day X .75 lb/ton X 365 days/year ÷ 2000 lb/ton ÷ 2 kilns = 95.81 t/yr.

AC 23-136377

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? _____

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. _____

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? _____

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

Raw Materials and Chemicals Used in your Process, if applicable:

scription	Contaminants Type	Contaminants % Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	Particulate	see below	21,008 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$

2. Product Weight (lbs/hr): 11,764 lbs/hr. (CaO at 100% availability)

Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of ontaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission lbs/yr	Potential[4] Emission T/yr	Relate to Flow Diagram
Particulate	10.29 -	15.43	See Attached Letter	15.43		26,990	
TRS @ H_2S	2.35		17-2.600 (4) (c) 5.a.20 ppm	2.35		91.81	

Section V, Item 2.

erence applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, (1) - 0.1 pounds per million BTU heat input)

lculated from operating rate and applicable standard.

ission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0503 MMCF/hr.	.0529 MMCF/hr.	52.98
#6 Oil	338 gal/hr.	375 gal/hr.	56.29
Non-condensible gases	1569 SCFM	2,141 SCFM	11,080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ____________ Percent Ash: ____________

Density: ____________ lbs/gal Typical Percent Nitrogen: ____________

Heat Capacity: ____________ BTU/lb ____________ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ____________

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ____________ Maximum ____________

G. Indicate liquid or solid wastes generated and method of disposal.

None

BEST AVAILABLE COPY

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

DESIGN BASIS

1. Temperature — 550° F
2. Flue Gas ACFM — 42,477
3. Dust Loading Lbs/Min — 102.7
4. Particulate Loading: Inlet 53.90 gr/scfd; Oulet .0905 gr/scfd
5. % Particulate Removal — 99.83

Calculations

1. Section III:

   A. Lime Mud ($CaCO_3$) Utilization Rate at 100% availability CaO = 21008 lbs/$CaCO_3$hr.

   B. Product Weight (lbs/hr) at 100% availability CaO

   21,008 lbs/hr $CaCO_3$ input at 100% availability

   Converting to CaO: $21{,}008 \text{ lbs/hr.} \times \frac{56}{100} \frac{(CaO\ \ )}{(CaCO_3)} = 11{,}764$ lbs/hr CaO

   C. Total Process Product Rate and Input Rate Calculation

   1. Assume 20% recirculation rate (i.e. only 80% of wet end feed will exit as product and 20% will be carried out by flue gas and captured by the venturi scrubber). This recycle rate is based on the experience of Rust International Corporation.
   2. The product is 90% available lime. This is based on laboratory test results.
   3. Basic Equation:

   $$\underset{MW=100}{\overset{1.0\#}{CaCO_3}} \xrightarrow{\text{Heat}} \underset{MW=56}{\overset{0.56\#}{CaO}} + \underset{MW=44}{\overset{0.44\#}{CO_2}}$$

   4. At 90% lime availability the inerts = 10% of the product rate.

   Inerts = 0.1 (Product CaO = Inerts)

   = 0.1 (11,764 + Inerts) = 11,764 + .1 Inerts

   .9 Inerts = 11,764 lbs/hr.

   Inerts = $\frac{1176 \text{ lbs/hr.}}{.9}$ = 1307 lb/hr.

   Therefore the total product rate is the sum of the CaO product and the inerts.

   Total Product Rate = 11,764 + 1307 lb/hr. = 13,071 lb/hr.

5. Basic Equation at 90% CaO

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inert}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244}$$

6. Therefore the total process input rate is 1307 + 21,008 = 22,315 lbs/hr.

7. Basic Equation at 90% CaO with 20% scrubber capture recirculation.

$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} + \underset{\text{Recycle}}{\underset{CaCO_3}{5579}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inerts}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244} + \underset{CaCO_3}{5579}$$

8. Therefore the total process input rate including recycle is 1307 + 21008 + 5579 = 27,894 lbs/hr.

D. Contaminants:

1. Particulate - The scrubber is designed to control the stack emission to 10.29 lbs/hr. to provide operating flexibility. The current permit limit is 15.43 lbs/hr/kiln with two kilns in operation.

   10.29 lbs/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 45.07 t/yr.

   Potential = 102.7 lbs/min dust loading X 60 min/hr X 24 hr/day X 365 days/yr ÷ 2000lbs/ton = 26,990 t/yr.

2. TRS:

   $$42{,}477 \text{ ACFM} \times \frac{(70 + 460)}{(550 + 460)} \times \frac{20}{1{,}000{,}000} \times \frac{1}{387} \times 34 = .0392 \text{ lb/min.}$$

   .0392 lbs/min. X 60 min/hr. = 2.35 lbs/hr.

   2.35 lbs/hr. X 24 hr/day X 365 days/yr. ÷ 2000 lbs/ton = 10.29 t/yr.

   Potential emission: from AP42 TRS = 0.75 lbs/ton ADP

   1400 t/day X .75 lb/ton X 365 days/year ÷ 2000 lb/ton ÷ 2 kilns = 95.81 t/yr.

AC 23-136378

E. Requested permitted equipment operating time: hrs/day_____; days/wk_____; wks/yr_____;

if power plant, hrs/yr_____; if seasonal, describe:________________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

   a. If yes, has "offset" been applied? __________

   b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

   c. If yes, list non-attainment pollutants. ______________________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

   a. If yes, for what pollutants?______________________________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

Raw Materials and Chemicals Used in your Process, if applicable:

scription	Contaminants Type	% Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	Particulate	see below	21,008 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 27,894 lbs/hr. $CaCO_3$
2. Product Weight (lbs/hr): 11,764 lbs/hr. (CaO at 100% availability)

Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of ontaminant	Emission[1] Maximum lbs/hr	Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission lbs/yr	T/yr	Relate to Flow Diagram
Particulate	10.29 -	15.43	See Attached Letter	15.43		26,990	
TRS @ H_2S	2.35		17-2.600 (4) (c) 5.a.20 ppm	2.35		91.81	

Section V, Item 2.

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ission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0503 MMCF/hr.	.0529 MMCF/hr.	52.98
#6 Oil	338 gal/hr.	375 gal/hr.	56.29
Non-condensible gases	1569 SCFM	2,141 SCFM	11,080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ______________ Percent Ash: ______________

Density: ______________ lbs/gal Typical Percent Nitrogen: ______________

Heat Capacity: ______________ BTU/lb ______________ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______________

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average ______________ Maximum ______________

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patholog-ical)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

DESIGN BASIS

1. Temperature — 550° F
2. Flue Gas ACFM — 42,477
3. Dust Loading Lbs/Min — 102.7
4. Particulate Loading: Inlet 53.90 gr/scfd; Oulet .0905 gr/scfd
5. % Particulate Removal — 99.83

Calculations

1. Section III:

   A. Lime Mud ($CaCO_3$) Utilization Rate at 100% availability CaO = 21008 lbs/$CaCO_3$hr.

   B. Product Weight (lbs/hr) at 100% availability CaO

   21,008 lbs/hr $CaCO_3$ input at 100% availability

   Converting to CaO: $21{,}008 \text{ lbs/hr.} \times \frac{56}{100} \frac{(CaO)}{(CaCO_3)} = 11{,}764$ lbs/hr CaO

   C. Total Process Product Rate and Input Rate Calculation

   1. Assume 20% recirculation rate (i.e. only 80% of wet end feed will exit as product and 20% will be carried out by flue gas and captured by the venturi scrubber). This recycle rate is based on the experience of Rust International Corporation.

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   $$\underset{MW=100}{\overset{1.0\#}{CaCO_3}} \xrightarrow{\text{Heat}} \underset{MW=56}{\overset{0.56\#}{CaO}} + \underset{MW=44}{\overset{0.44\#}{CO_2}}$$

   4. At 90% lime availability the inerts = 10% of the product rate.

   Inerts = 0.1 (Product CaO = Inerts)

   = 0.1 (11,764 + Inerts) = 11,764 + .1 Inerts

   .9 Inerts = 11,764 lbs/hr.

   Inerts = $\frac{1176 \text{ lbs/hr.}}{.9}$ = 1307 lb/hr.

   Therefore the total product rate is the sum of the CaO product and the inerts.

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6. Therefore the total process input rate is 1307 + 21,008 = 22,315 lbs/hr.

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$$\underbrace{\underset{\text{inerts}}{1307} + \underset{CaCO_3}{21{,}008}}_{\text{Feed}} + \underset{\text{Recycle}}{\underset{CaCO_3}{5579}} \longrightarrow \underbrace{\underset{CaO}{11{,}764} + \underset{\text{inerts}}{1307}}_{\text{Product}} + \underset{CO_2}{9{,}244} + \underset{CaCO_3}{5579}$$

8. Therefore the total process input rate including recycle is 1307 + 21008 + 5579 = 27,894 lbs/hr.

D. Contaminants:

1. Particulate - The scrubber is designed to control the stack emission to 10.29 lbs/hr. to provide operating flexibility. The current permit limit is 15.43 lbs/hr/kiln with two kilns in operation.

   10.29 lbs/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 45.07 t/yr.

   Potential = 102.7 lbs/min dust loading X 60 min/hr X 24 hr/day X 365 days/yr ÷ 2000lbs/ton = 26,990 t/yr.

2. TRS:

$$42{,}477 \text{ ACFM} \times \frac{(70 + 460)}{(550 + 460)} \times \frac{20}{1{,}000{,}000} \times \frac{1}{387} \times 34 = .0392 \text{ lb/min.}$$

   .0392 lbs/min. X 60 min/hr. = 2.35 lbs/hr.

   2.35 lbs/hr. X 24 hr/day X 365 days/yr. ÷ 2000 lbs/ton = 10.29 t/yr.

   Potential emission: from AP42 TRS = 0.75 lbs/ton ADP

   1400 t/day X .75 lb/ton X 365 days/year ÷ 2000 lb/ton ÷ 2 kilns = 95.81 t/yr.

P 274 007 721

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. R.E. Nedley, V.P. St. Joe Forest Products Co.	
Street and No. P.O. Box 190	
P.O., State and ZIP Code Port St. Joe, FL 32456	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 07/30/87 Permit: AC 23-136376, 377 and 378	

★ U.S.G.P.O. 1985-480-794

PS Form 3800, June 1985

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to: Mr. R.E. Nedley
Vice President
St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, FL 32456

4. Type of Service:	Article Number
☐ Registered ☒ Certified ☐ Express Mail ☐ Insured ☐ COD	P 274 007 721

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X Eric McNair

6. Signature – Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

File

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

DEPARTMENT OF ENVIRONMENTAL REGULATION
STATE OF FLORIDA

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

July 30, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. E. Nedley
Vice President
St. Joe Forest Products Company
Post Office Box 190
Port St. Joe, Florida 32456

Dear Mr. Nedley:

Re: Applications to Construct Air Pollution Sources
Permit Nos. AC 23-136376, -136377 and -136378

The Department received Mr. Lewis W. Taylor's cover letter dated June 30, 1987, and the above referenced application packages (3) on July 1, 1987. Based on a technical review of the information, the applications have been deemed incomplete and the following information, including all assumptions, reference documents and calculations, will have to be submitted to the Bureau in order to, again, ascertain their status:

1. Based on the TRS Inventory Forms for the 3 lime kilns found in Volume 3, State of Florida's State Implementation Plan Revision for 111(d) Sources of Total Reduced Sulfur at Kraft (sulfate) Pulp Mills and Tall Oil Plants, and the Specific Conditions of the Interim Operating Permits Nos. AO 23-96171, -96172 and -96173, the above referenced application packages are subject to the New Source Review requirements of the Prevention of Significant Deterioration regulations pursuant to Florida Administrative Code (FAC) Rule 17-2.500(5). Therefore, submit to the Bureau all of the required information pursuant to FAC Rule 17-2.500(5), which includes the general application, technology review, Best Available Control Technology determination, ambient impact analysis, additional impact analysis, preconstruction air quality monitoring analysis, preconstruction monitoring, and permit application information required.

2. Since there is a proposed increase in the process through-put rate of $CaCO_3$ on a per source and over-all total basis from the previous maximum operating rates of 21,008 lbs/hr (pounds per hour) and 21.01 tons per hour, respectively:

Mr. R. E. Nedley
Page Two
July 30, 1987

a. Submit the net change in the potential TRS (total reduced sulfur) emissions in lbs/hr and tons per year (TPY) between the previously permitted maximum process through-put rates of $CaCO_3$ and the proposed rates.

b. Referencing No. 2.a., submit the net emission changes in lbs/hr and TPY for the pollutants particulate matter and sulfur dioxide.

c. How much additional fuel in gallons per hour per source will be required to process the proposed through-put rate of $CaCO_3$ versus the previously established maximum through-put rate? What is the density of the fuel oil? Submit the net potential emission changes of all pollutants associated with the increase in fuel consumption.

d. Each source will become an affected source subject to the New Source Performance Standards, 40 CFR 60, Subpart BB. For each affected pollutant, calculate and submit the potential and allowable pollutant emissions in lbs/hr and TPY.

3. Pursuant to the proposed process through-put rate increase of $CaCO_3$ per source and over-all total, what other mill sources will be affected requiring process through-put rate increases and what are their net potential pollutant emission changes?

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,

CHFancy

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: J. Preece
L. Taylor
V. L. Hutcheson, P.E.

file copy

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

DISTRICT ROUTING SLIP

TO: Jack Preece DATE: 7/8/87

			C.C. TO:
	PENSACOLA	NORTHWEST DISTRICT	
XXX	PANAMA CITY	Northwest District Branch Office	
	TALLAHASSEE	Northwest District Branch Office	
	TAMPA	SOUTHWEST DISTRICT	
	ORLANDO	ST. JOHNS RIVER DISTRICT	
	JACKSONVILLE	NORTHEAST DISTRICT	
	GAINESVILLE	Northeast District Branch Office	
	FORT MYERS	SOUTH FLORIDA DISTRICT	
	PUNTA GORDA	South Florida District Branch Office	
	MARATHON	South Florida District Branch Office	
	WEST PALM BEACH	SOUTHEAST FLORIDA DISTRICT	
	PORT ST. LUCIE	Southeast Florida Subdistrict	

Reply Optional ☐ Date Due: ______ Reply Required ☐ Date Due: ______ Info. Only ☐

COMMENTS:

Attached please find the applications (3) for Lime Kiln #1, #2 & #3 with venturi scrubber for St. Joe Forest Products Company. Please submit your comments to Bruce Mitchell (SC) 278-1344 by July 30, 1987.

Sincerely,

Maggie Janes

Maggie Janes
Planner

FROM: C.H. Fancy

TEL.: (SC) 278-1344

NOTES

7/7/87

Dear Ms Janes,

Here are the copies of the permit applications for our #'s 1, 2, & 3, Lime Kilns that I left out of our original submittal. Thanks for calling

Laura Taylor

DER

JUL 8 1987

BAQM

July 7, 1987 AC 23-136376, -77, -78

At approximately 10:00 a.m. I spoke with Mr. Lewis Taylor of St. Joe Forest Products Company and requested that he send us three (3) more application for each lime kiln he requested a permit for. He said he has a copy of each but they are not signed by Mr. Nedley. I suggested that he have a copy signed and return three (3) copies of each to me. He said that it would be in the afternoon mail. mj

File copy

18969

EXECUTIVE OFFICES
JACKSONVILLE, FLORIDA
MILL
PORT ST. JOE, FLORIDA

St. Joe FOREST PRODUCTS COMPANY

St. Joe Paper Company

P. O. BOX 190 • PORT ST. JOE, FLORIDA 32456-0190 • AREA CODE 904/227-1171

June 30, 1987

DER
JUL 01 1987
BAQM

Mr. Clair Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Enclosed are the construction permit applications to replace the venturi scrubbers on each of our three lime kilns. This submittal conforms to the agreed upon date in our Final Compliance Plan for TRS Sources.

This project will replace the existing venturi wet scrubbers with larger units. These larger units will result in better particulate control and will provide for a greater degree of TRS absorption.

With respect to Section III:, Item D., venturi wet scrubbers have been and remain the method of choice to control particulate emissions from lime kilns in the pulp and paper industry. Due to recent improvements in scrubber design, there are now a number of both high pressure and low pressure models available that will control emissions to meet existing as well as new source performance standards.

At this time we are evaluating proposals from a number of vendors who will guarantee equipment to meet our design criteria. We are confident that our final selection will meet all applicable emission limiting standards.

If you require any additional information, please let me know.

Yours very truly,

ST. JOE FOREST PRODUCTS COMPANY

Lewis W. Taylor

Lewis W. Taylor
Environmental Coordinator

RECEIVED
DER - MAIL ROOM
1987 JUL - 1 AM 11:01

LWT/rsk

cc: Jack Preese
Bruce Mitchell } 7/8/87
Permits attached

1031

July 7, 1987
10:23am

contacted Mr. Lewis Taylor, and he will send 3 copies for each Lime Kiln today.

mrg

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Nº 76170

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from St. Joe Forest Products Company Date July 6, 1987

Address P. O. Box 190, Port St. Joe, FL 32456-0190 Dollars $ 3000.00

Applicant Name & Address Rennie W. Taylor, P. O. Box 190 Port St Joe, FL 32456-0190

Source of Revenue √ #. 352

Revenue Code 001031 Application Number AC ~~23~~-126376, PSD-77, ~~78~~

By [illegible signature]

DESIGN BASIS

1. Temperature 550° F
2. Flue Gas ACFM 42,477
3. Dust Loading Lbs/Min 102.7
4. Particulate Loading: Inlet 53.90 gr/scfd Outlet .0905 gr/scfd
5. % Particulate Removal 99.83

Calculations

1. Section III:

A. Lime Mud ($CaCo_3$) Utilization Rate

140 tons/day CaO X 2000 lbs/ton = 280,000 lbs/day CaO

280,000 lbs/day CaO ÷ 24 hrs/day = 11,660 lbs/hr CaO

Converting to $CaCo_3$: 11,666 X $\frac{100(CaCo_3)}{56(CaO\ \ )}$ = 20,832 lbs/$CaCo_3$

20,832 lbs $CaCo_3$ ÷ .9 (availability) = 23,148 lbs/hr $CaCo_3$

B. Product Weight (lbs/hr)

23,148 lbs/hr $CaCo_3$ input

Converting to CaO: 23,148 lbs/hr X $\frac{56}{100}\frac{(CaO\ \ )}{(CaCo_3)}$ =

12,963 lbs/hr X .9 (availability) = 11,667 lbs/hr CaO

C. Contaminants:

(1) Particulate - The scrubber is designed to control the stack emission to 10.29 lbs/hr or less. The current permit limit is 15.43 lbs/hr/kiln with two kilns in operation.

10.29 lbs/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 45.07 t/yr

Potential = 102.7 lbs/min dust loading X 60 min/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 26,990 t/yr

(2) TRS:

42,477 ACFM X $\frac{(\ 70 + 460)}{(550 = 460)}$ X $\frac{20}{1,000,000}$ X $\frac{1}{387}$ X 34 = .0392 lb/min

.0392 lbs/min X 60 min/hr = 2.35 lbs/hr

2.35 lbs/hr X 24 hr/day X 365 days/yr ÷ 2000 lbs/ton = 10.29 t/yr

Potential emission: from AP42 TRS = 0.75 lbs/ton ADP

2000 t/day X .75 lb/ton X 365 days.year ÷ 2000 lb/ton ÷ 3 kilns = 91.25 ton/yr

Table 25
Range of analyses of fuel oils

Grade of Fuel Oil	No. 1	No. 2	No. 4	No. 5	No. 6
Weight, percent					
Sulfur	0.01-0.5	0.05-1.0	0.2-2.0	0.5-3.0	0.7-3.5
Hydrogen	13.3-14.1	11.8-13.9	(10.6-13.0)*	(10.5-12.0)*	(9.5-12.0)*
Carbon	85.9-86.7	86.1-88.2	(86.5-89.2)*	(86.5-89.2)*	(86.5-90.2)*
Nitrogen	Nil-0.1	Nil-0.1	—	—	—
Oxygen	—	—	—	—	—
Ash	—	—	0-0.1	0-0.1	0.01-0.5
Gravity					
Deg API	40-44	28-40	15-30	14-22	7-22
Specific	0.825-0.806	0.887-0.825	0.966-0.876	0.972-0.922	1.022-0.922
Lb per gal	6.87-6.71	7.39-6.87	8.04-7.30	8.10-7.68	8.51-7.68
Pour point, F	0 to −50	0 to −40	−10 to +50	−10 to +80	+15 to +85
Viscosity					
Centistokes @ 100F	1.4-2.2	1.9-3.0	10.5-65	65-200	260-750
SUS @ 100F	—	32-38	60-300	—	—
SSF @ 122F	—	—	—	20-40	45-300
Water & sediment, vol %	—	0-0.1	tr to 1.0	0.05-1.0	0.05-2.0
Heating value					
Btu per lb, gross (calculated)	19,670-19,860	19,170-19,750	18,280-19,400	18,100-19,020	17,410-18,990

* Estimated.

Table 27
Selected samples of natural gas from United States fields

Sample No. / Source of Gas		1 Pa.	2 So. Cal.	3 Ohio	4 La.	5 Okla.
Analyses						
Constituents, % by vol						
H_2	Hydrogen	—	—	1.82	—	—
CH_4	Methane	83.40	84.00	93.33	90.00	84.10
C_2H_4	Ethylene	—	—	0.25	—	—
C_2H_6	Ethane	15.80	14.80	—	5.00	6.70
CO	Carbon monoxide	—	—	0.45	—	—
CO_2	Carbon dioxide	—	0.70	0.22	—	0.80
N_2	Nitrogen	0.80	0.50	3.40	5.00	8.40
O_2	Oxygen	—	—	0.35	—	—
H_2S	Hydrogen sulfide	—	—	0.18	—	—
Ultimate, % by wt						
S	Sulfur	—	—	0.34	—	—
H_2	Hydrogen	23.53	23.30	23.20	22.68	20.85
C	Carbon	75.25	74.72	69.12	69.26	64.84
N_2	Nitrogen	1.22	0.76	5.76	8.06	12.90
O_2	Oxygen	—	1.22	1.58	—	1.41
Specific gravity (rel to air)		0.636	0.636	0.567	0.600	0.630
Higher heat value						
Btu/cu ft @ 60F & 30 in. Hg		1,129	1,116	964	1,002	974
Btu/lb of fuel		23,170	22,904	22,077	21,824	20,160

ATTACHMENT # 1

SJ-24
3/25/87

TABLE - NCG COMPOSITION FOR INCINERATION - CONDITION 1- MAXIMUM

RUST INTERNATIONAL CORPORATION FOR
ST.JOE FOREST PRODUCTS COMPANY
ST.JOE, FLORIDA
RUST CONTRACT NO. 21-2982
TRS CONTROL SYSTEMS

NCG'S FOR FOR INCINERATION- CONDITION 1 - MAXIMUM

COMPONENTS	HEAT VALUE	STRIPPER VENT		EVAP. VENTS		BATCH DIGESTERS TURPENTINE VENT		BATCH DIGESTERS MAIN BLOW		CONTINOUS DIGESTER DIGESTER VENT	
	BTU/lb	lbs/min	moles/min	lbs/min	moles/min	lbs/min	moles/min	lbs/min	moles/min	lbs/min	moles/min
H2S	6,863	0.003	0.00009	2.173	0.06391	0.146	0.00429	0.340	0.01000	0.281	0.00826
RSH	10,473	5.864	0.12217	1.767	0.03681	0.161	0.00335	0.376	0.00783	0.302	0.00629
R2S	12,449	1.169	0.01885	0.259	0.00418	0.204	0.00329	0.475	0.00766	0.240	0.00387
R2S2	9,548	0.123	0.00131	0.024	0.00026	0.073	0.00078	0.170	0.00181	0.104	0.00111
MeOH	9,760	2.134	0.06669	0.546	0.01706	0.192	0.00600	0.447	0.01397	0.271	0.00847
ACETONE	12,689	0.157	0.00280	0.167	0.00298	0.097	0.00173	0.227	0.00405	0.139	0.00248
TURP.	18,214	0.000	0.00000	0.302	0.00222	0.237	0.00174	0.026	0.00019	0.066	0.00049
DRY AIR- N2		0.109	0.00387	5.118	0.18175	8.080	0.28693	1.426	0.05064	3.952	0.14034
DRY AIR- O2		0.033	0.00103	1.542	0.04818	2.434	0.07606	0.429	0.01342	1.191	0.03721
H2O WITH NCG		33.573	1.86517	0.964	0.05354	0.942	0.05231	0.596	0.03312	0.996	0.05534
EJECTOR STEAM		26.667	1.48150	7.167	0.39772	5.222	0.29011	5.222	0.28980	5.222	0.29012
TOTAL		69.832	3.56348	20.029	0.80862	17.788	0.72661	9.735	0.43249	12.764	0.55398
VOLUME-ACFM		1,821		380		330		216		269	
TEMP. F		240		184		162		225		205	
VOLUME-SCFM		1,379		313		281		167		214	
HEAT INPUT- BTU/HR		5,998,894		2,989,271		800,773		1,291,463		880,977	
TOTAL VOLUME-SCFM	2,141										
TOTAL BTU/HOUR	11,080,401										

NOTES:

1. THREE SAPERATE VENT LINES TO THE BURNER, ONE EACH FROM EVAPORATOR AREA, DIGESTER AREA, AND STRIPPER SYSTEM. ARE COMBINED PRIOR TO INCINERATION.

2. A TOTAL OF 940 LBS/HOUR OF 50 PSIG STEAM IS REQUIRED TO PULL NCG'S FROM DIGESTER AREA VENTS COMBINED. FOR SIMPLICITY, STEAM USAGE IS EQUALLY DISTRIBUTED AMONG THESE SOURCES.

3. VOLUMETRIC FLOW RATES IN ACFM ARE BASED ON 14.7 PSIA PRESSURE.

File copy AC-23-136376
$1000.00

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501

DER
JUL 01 1987
BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [XX] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #1 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley , Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, Vice President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

1 See Florida Administrative Code Rule 17-2.100(57) and (104)

DER Form 17-1.202(1)
Effective October 31, 1982

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed ____________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

Florida Registration No. 37042 Date: ________ Telephone No. 205-930-1189

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases. The project will result in full compliance. Particulate and TRS emissions will be reduced.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #A023-96171 issued 2/15/85, expires 1/1/90

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____; if seasonal, describe: ______________________

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? __________

   a. If yes, has "offset" been applied? __________

   b. If yes, has "Lowest Achievable Emission Rate" been applied? __________

   c. If yes, list non-attainment pollutants. ______________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. __________

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. __________

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? __________

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? __________

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? __________

   a. If yes, for what pollutants? ______________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants Type	Contaminants % Wt	Utilization Rate - lbs/hr	Relate to Flow Diagram
Lime Mud ($CaCO_3$)	Particulate	see below	23,148 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 23,148 lbs/hr x .9 (availability) x .56 $\frac{CaO}{CaCO_3}$
2. Product Weight (lbs/hr): 11,667 lbs/hr (CaO)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1] Maximum lbs/hr	Emission[1] Actual T/yr	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission ~~xxxxxxx~~	Potential[4] Emission T/yr	Relate to Flow Diagram
Particulate	10.29	45.07	See Attached letter	10.29		26,990	
TRS @ H_2S	2.35	10.29	17-2.600 (4) (c) 5.a.20 ppm	1.41		91.25	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 - $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0506 MMCF/hr.	.0562 MMCF/hr.	56.29
#6 oil	338 gal/hr.	375 gal/hr.	56.29
non-condensible gases	1500 SCFM	2,141 SCFM	11.080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating. N/A

Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patholog-ical)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume (ft)^3	Heat Release (BTU/hr)	Fuel Type	Fuel BTU/hr	Temperature (°F)
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

Brief description of operating characteristics of control devices: ______

______

______

______

______

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

______

______

______

______

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life: 6. Operating Costs:

7. Energy: 8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. ____________ no. sites ____________ TSP ____________ ( ) SO2* ____________ Wind spd/dir

Period of Monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded ____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)________________________________

3. Upper air (mixing height) data obtained from (location)________________

4. Stability wind rose (STAR) data obtained from (location)_______________

C. Computer Models Used

1. ______________________________ Modified? If yes, attach description.

2. ______________________________ Modified? If yes, attach description.

3. ______________________________ Modified? If yes, attach description.

4. ______________________________ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	______________________	grams/sec
SO^2	______________________	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

File Copy

AC-23-136377

$1000.00

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501

DER
JUL 01 1987
BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #2 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley, Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, Vice President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed ____________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

Florida Registration No. 37042 Date: ____________ Telephone No. 205-930-1189

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases. The project will result in full compliance. Particulate and TRS emissions will be reduced.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #A023-96172 issued 2/15/85, expires 1/1/90.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr _____ ; if seasonal, describe: ______________________

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? ______

   a. If yes, has "offset" been applied? ______

   b. If yes, has "Lowest Achievable Emission Rate" been applied? ______

   c. If yes, list non-attainment pollutants. ______

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. ______

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. ______

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? ______

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? ______

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? ______

   a. If yes, for what pollutants? ______

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Lime Mud ($CaCO_3$)	Particulate	see below	23,148 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 23,148 lbs/hr x .9 (availability) x .56 $\frac{CaO}{CaCO_3}$

2. Product Weight (lbs/hr): 11,667 lbs/hr (CaO)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			~~lbs/yr~~	T/yr	
Particulate	10.29	45.07	See Attached letter	10.29		26,990	
TRS @ H_2S	2.35	10.29	17-2.600 (4) (c) 5.a.20 ppm	1.41		91.25	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 − $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0506 MMCF/hr.	.0562 MMCF/hr.	56.29
#6 oil	338 gal/hr.	375 gal/hr.	56.29
non-condensible gases	1500 SCFM	2,141 SCFM	11.080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating. N/A

Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patholog-ical)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste ____

Total Weight Incinerated (lbs/hr) ____ Design Capacity (lbs/hr) ____

Approximate Number of Hours of Operation per day ____ day/wk ____ wks/yr. ____

Manufacturer ____

Date Constructed ____ Model No. ____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel Type	Fuel BTU/hr	Temperature (°F)
Primary Chamber					
Secondary Chamber					

Stack Height: ____ ft. Stack Diamter: ____ Stack Temp. ____

Gas Flow Rate: ____ ACFM ____ DSCFM* Velocity: ____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ____

Brief description of operating characteristics of control devices: ____________

____

____

____

____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

____

____

____

____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1] Explain method of determining efficiency.
[2] Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. ____________ no. sites ____________ TSP ____________ ( ) SO^2* ____________ Wind spd/dir

Period of Monitoring ______/______/______ to ______/______/______
month day year month day year

Other data recorded ____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)____________________

3. Upper air (mixing height) data obtained from (location)____________________

4. Stability wind rose (STAR) data obtained from (location)____________________

C. Computer Models Used

1. ____________________ Modified? If yes, attach description.

2. ____________________ Modified? If yes, attach deecription.

3. ____________________ Modified? If yes, attach description.

4. ____________________ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	____________________	grams/sec
SO^2	____________________	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

File copy

AC- 23-136378
$1000.00

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501

10/23

DER
JUL 01 1987
BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROBERT V. KRIEGEL
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Lime Kiln [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: St. Joe Forest Products Company COUNTY: Gulf

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln #3 with venturi scrubber

SOURCE LOCATION: Street U. S. Highway 98 City Port St. Joe

UTM: East 425.0 North 2620.0

Latitude 29 ° 49 ' 11 "N Longitude 85 ° 18 ' 48 "W

APPLICANT NAME AND TITLE: R. E. Nedley, Vice President

APPLICANT ADDRESS: P. O. Box 190, Port St. Joe, Florida 32456

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of St. Joe Forest Products Co.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: R. E. Nedley

R. E. Nedley, President
Name and Title (Please Type)

Date: 6/30/87 Telephone No. 904-227-1171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed ______________________

Victor L. Hutcheson
Name (Please Type)

Rust International Corporation
Company Name (Please Type)

P. O. Box 101, Birmingham, Alabama 35201
Mailing Address (Please Type)

Florida Registration No. 37042 Date: ______ Telephone No. 205-930-1189

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This project will replace the existing venturi scrubber with a larger unit using clean water for particulate removal and absorption of reduced sulfur gases.

The project will result in full compliance. Particulate and TRS emissions will be reduced.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NLT 4/89 Completion of Construction October, 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The cost to replace the venturi scrubber is estimated to be $500,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Unit currently operating under Permit #A023-96173 issued 2/15/85, expires 1/1/90.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:______________________________

____

____

____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? ______

   a. If yes, has "offset" been applied? ______

   b. If yes, has "Lowest Achievable Emission Rate" been applied? ______

   c. If yes, list non-attainment pollutants. ______________________

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. ______

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. ______

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? ______

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? ______

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? ______

   a. If yes, for what pollutants?______________________________

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Lime Mud ($CaCO_3$)	Particulate	see below	23,148 lb/hr.	
	Calcium Compounds	26.00		
	Sodium Compounds	.53		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 23,148 lbs/hr x .9 (availability) x .56 $\frac{CaO}{CaCO_3}$
2. Product Weight (lbs/hr): 11,667 lbs/hr (CaO)

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			~~lbs/yr~~	T/yr	
Particulate	10.29	45.07	See Attached letter	10.29		26,990	
TRS @ H_2S	2.35	10.29	17-2.600 (4) (c) 5.a.20 ppm	1.41		91.25	

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Venturi Scrubber	Particulate	99.83	0.39 to 26.33 microns	eff = 1 − $\frac{\text{grains out}}{\text{grains in}}$
(see attached letter)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	.0506 MMCF/hr.	.0562 MMCF/hr.	56.29
#6 oil	338 gal/hr.	375 gal/hr.	56.29
non-condensible gases	1500 SCFM	2,141 SCFM	11.080 (See attached Table SJ-24)

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: See Attachment #1

Percent Sulfur: ____________ Percent Ash: ____________

Density: ____________ lbs/gal Typical Percent Nitrogen: ____________

Heat Capacity: ____________ BTU/lb ____________ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ____________

F. If applicable, indicate the percent of fuel used for space heating. N/A

Annual Average ____________ Maximum ____________

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 111 AMSL ft. Stack Diameter: 4 ft.

Gas Flow Rate: 42,477 ACFM 13,342 DSCFM Gas Exit Temperature: 550 °F.

Water Vapor Content: 25.9 % Velocity: 56.3 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patholog-ical)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Inciner-ated							
Uncon-trolled (lbs/hr)							

Description of Waste ______

Total Weight Incinerated (lbs/hr) ______ Design Capacity (lbs/hr) ______

Approximate Number of Hours of Operation per day ______ day/wk ______ wks/yr. ______

Manufacturer ______

Date Constructed ______ Model No. ______

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: ______ ft. Stack Diamter: ______ Stack Temp. ______

Gas Flow Rate: ______ ACFM ______ DSCFM* Velocity: ______ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) ______

Brief description of operating characteristics of control devices: ______

______

______

______

______

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

______

______

______

______

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life: 6. Operating Costs:

7. Energy: 8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1] Explain method of determining efficiency.
[2] Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1] Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. __________ no. sites __________ TSP __________ ( ) SO^2* __________ Wind spd/dir

Period of Monitoring ____ / ____ / ____ to ____ / ____ / ____
month day year month day year

Other data recorded ____________________

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location) ________________________

3. Upper air (mixing height) data obtained from (location) ________________________

4. Stability wind rose (STAR) data obtained from (location) ________________________

C. Computer Models Used

1. ________________________ Modified? If yes, attach description.

2. ________________________ Modified? If yes, attach description.

3. ________________________ Modified? If yes, attach description.

4. ________________________ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	________________________	grams/sec
SO^2	________________________	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.