→ P 4/1

Check Sheet

Company Name: Champion Int'l Corp
Permit Number: AC 17-142000 4
PSD Number:
County: Escambia
Permit Engineer:
Others involved:

Application:

- [x] Initial Application
- [x] Incompleteness Letters
- [x] Responses
- [ ] Final Application (if applicable)
- [ ] Waiver of Department Action
- [ ] Department Response

Intent:

- [x] Intent to Issue
- [x] Notice to Public
- [x] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
  - Attachments:
    - [ ]
    - [ ]
    - [ ]
- [ ] Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] County
  - [x] Other
- [x] Proof of Publication
- [ ] Petitions - (Related to extensions, hearings, etc.)

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [ ] BACT Determination

Post Permit Correspondence:

- [x] Extensions
- [x] Amendments/Modifications
- [ ] Response from EPA
- [ ] Response from County
- [ ] Response from Park Services

In the folder labeled as follows there are documents, listed below, which were not reproduced in this electronic file. Those documents can be found in the supplementary documents file drawer. Folders in that drawer are arranged alphabetically, then by permit number.

Folder Name: Champion International Corp.
Escambia County
Permit(s) numbered: AC 17-142004

Period During Which DOCUMENT WAS SUBMITTED (APPLICATION, PD & TE, FINAL DETERMINATION, POST PERMIT)	Detailed Description
Application 11/13/87	1. 30"x42" BLUEPRINT: ENGINEERING FLOW DIAGRAM INC. G SYSTEM BLOW HEAT RECOVERY MODIF. PENSACOLA MILL 2. 30"x42" BLUEPRINT: NCG COLLECTION AND INCINERATION PROCESS AND INSTRUMENTATION DIAGRAM

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

RECEIVED
JUN - 7 1990
DER - BAQM

Champion
Champion International Corporation

May 31, 1990

Mr. Michael D. Harley, Engineer
Bureau of Air Quality Management
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee FL 32301

RE: DER File No. AC17-142004

Dear Mr. Harley:

Champion has completed construction of the necessary equipment required to comply with the Florida DER TRS Rule, and as permitted under AC17-142004. The equipment is currently in operation. In addition, the necessary testing required by the permit is complete. However, the Northwest District Office has rejected Champion's Contingency Plan, which is a necessary condition of the operating permit. At this time, the details of a satisfactory contingency plan are being drafted into a consent order with the Northwest District Office. The proposed expiration date on the consent order is December, 1990.

Champion therefore requests a nine month extension of the construction permit. This extension will provide sufficient time to resolve the outstanding questions which the District has, and allow the continued operation of the improved NCG system which Champion has installed.

If there are any questions concerning this request, please contact me at (904) 968-2121, Ext. 2341.

Sincerely,

Russell Plenkers

Russell Plenkers
Assistant Process Engineer
Environmental Control

RAP/sa
cc: E. Middleswart
CHF/BA

P 938 762 827

RECEIPT FOR CERTIFIED MAIL

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

Sent to Mr. T. P. Crane, Jr., Champion Interantion	
Street and No. P.O. Box 87	
P.O., State and ZIP Code Cantonment, FL 32533	
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: 2-2-90 Permit: AC 17-142004	

PS Form 3800, June 1985

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. T. P. Crane, Jr. Vice President, Operations Mgr. Champion International Corp. P. O. Box 87 Cantonment, FL 32533	4. Article Number P 938 762 827 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Ronald F. Reeves Jr.	
7. Date of Delivery 6 JAN 90	

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

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

January 31, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. T.P. Crane, Jr.
Vice President, Operations Manager
Champion International Corporation
P. O. Box 87
Cantonment, Florida 32533

RE: Construction Permit Number AC 17-142004 for physical changes to the Digester Systems, Multiple Effect Evaporator Systems, the Condensate Stripper System, Brown Stock Diffusion Washer System, and the Lime Kiln

The Department has received and reviewed Champion's November 19, 1989, request for an extension of the expiration date of the above referenced permits. The Department grants the extension of time with the understanding that none of the compliance dates for the affected sources will be extended by this action. The applicable compliance dates are set forth in Part IX of F.A.C. Chapter 17-2 as well as the above referenced permits.

The following shall be changed and added to the permits:

Expiration Date Change:

From: November 28, 1989
To: May 28, 1990

Attachments to be Added:

10 D. T. Arceneaux's letter to M. D. Harley, dated November 19, 1989, and received November 27, 1989.

This letter shall be attached to construction permit number AC 17-142004 and shall become a part of the permit.

Sincerely,

Dale Twachtmann
Secretary

DT/mdh

cc: E. Middleswart, NE District
L. Sarratt, P.E.
D. Arceneaux

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: Dale Twachtmann

for FROM: Steve Smallwood

SUBJ: Approval of a Construction Permit Amendment for Champion International Corp. Construction Permit AC 17-142004

DATE: January 29, 1990

Attached for your approval and signature is a letter prepared by the Bureau of Air Regulation that will amend the construction permit for the above mentioned company to make physical changes to the NSPS Kamyr™ continuous digester system, the non-NSPS batch digester system, the non-NSPS No. 1 multiple effect evaporator system, the NSPS No. 2 multiple effect evaporator system, the NSPS condensate stripper system, the NSPS brown stock diffusion washer system (including filtrate tank), and the non-NSPS lime kiln by extending the expiration date. The extension will allow the applicant to continue to operate the affected sources while developing a contingency plan that is acceptable to the Northwest District Office. The applicant states that the required testing has been completed.

I recommend your approval and signature.

SS/mdh

attachments

RECEIVED
JAN 29 1990
Office of the Secretary

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

RECEIVED
NOV 27 1989
DER - BAQM

Champion
Champion International Corporation

November 19, 1989

Mr. Michael D. Harley, Engineer
Bureau of Air Quality Management
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: DER File No. AC 17-142004

Dear Mr. Harley:

Champion has completed the construction of the necessary equipment required to comply with the Florida DER TRS Rule, and as permitted under AC 17-142004. The equipment is currently in operation. In addition, the necessary testing required by the permit is complete. However, the Northwest District Office has rejected Champion's Contingency Plan, which is a necessary condition of the operating permit. We believe that this matter can be resolved, however not in a time frame necessary to obtain an operating permit before the expiration of the construction permit.

Champion would request therefore a six (6) month extension of the construction permit. This extension will provide sufficient time to resolve the outstanding questions which the District has, and allow the continued operation of the improved NCG system which Champion has installed.

If there are any questions concerning this request, please contact me at (904) 968-4253.

Sincerely,

David T. Arceneaux
etc

cc: Ed Middleswart, Northwest District Office, DER

375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087

CANTONMENT FLA.
NOV 22 '89
U.S. POSTAGE
.25

Champion
Champion International Corporation

MR. MICHAEL D. HARLEY, ENGINEER
BUREAU OF AIR QUALITY MANAGEMENT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

P 938 762 592

RECEIPT FOR CERTIFIED MAIL

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

Sent to Mr. T. P. Crane, Jr., Champion Int.	
Street and No. P.O. Box 87	
P.O., State and ZIP Code Cantonment, FL 32533	
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: 6-14-89 Permit: AC 17-142004	

PS Form 3800, June 1985

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:
(Bill Bannan) New V.P.
Mr. T. P. Crane, Jr.
Vice President, Operations Mgr.
Champion International Corp.
P.O. Box 87
Cantonment, FL 32533

4. Article Number
P 938 762 592

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X Daniel R Rhodes

7. Date of Delivery
6-15-89

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

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. T. P. Crane, Jr.
Vice President, Operations Manager
Champion International Corporation
P. O. Box 87
Cantonment, Florida 32533

June 13, 1989

Enclosed is construction permit No. AC 17-142004 for Champion International Corp. to make physical changes to the NSPS Kamyr continuous digester system, the non-NSPS No. 1 multiple effect evaporator system, the NSPS No. 2 multiple effect evaporator systems, the NSPS condensate stripper system, the NSPS brown stock diffusion washer system and the non-NSPS lime kiln. The purpose of the changes is to enable the permittee to reduce the venting of uncontrolled TRS emissions. The project at the permittee's pulp mill in Cantonment, Escambia County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this permit has the right to seek judicial review of the permit 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 this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy

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

Copy furnished to:

E. Middleswart, NW District
L. Sarratt, P.E.
D. Arceneaux, Champion International

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on June 14, 1989.

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.

Martha J Wise   June 14, 1989
Clerk   Date

Final Determination

Champion International Corporation

TRS Construction Permit:

Kamyr™ Continuous Digester System

Batch Digester System

No. 1 Multiple Effect Evaporator System

No. 2 Multiple Effect Evaporator System

Condensate Stripper System

Brown Stock Diffusion Washer System

Lime Kiln

Permit No. AC 17-142004

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

June 7, 1989

Final Determination

The application by Champion International Corporation to make physical changes to the NSPS Kamyr™ continuous digester system, the non-NSPS batch digester system, the non-NSPS No. 1 multiple effect evaporator system, the NSPS No. 2 multiple effect evaporator systems, the NSPS condensate stripper system, the NSPS brown stock diffusion washer system (including filtrate tank), and the non-NSPS lime kiln has been reviewed by the Bureau of Air Quality Management. The purpose of the changes is to enable the applicant to reduce the venting of uncontrolled TRS emissions. The projects are to located at the kraft pulp mill owned by Champion International, 375 Muscogee Road, Cantonment, Escambia County, Florida. The universal transverse mercator (UTM) coordinates of the project are Zone 16, 469.0 km East, and 3385.8 km North. Public notice of the Department's intent to issue the permits appeared in The Pensacola News Journal on March 10, 1989.

Copies of the Technical Evaluation and Preliminary Determination and associated materials have been available at the Northwest District office in Pensacola and the Bureau of Air Quality Management office in Tallahassee.

Comments were received both from the company and potentially affected parties. One of the potentially affected parties filed a petition for a hearing, which was subsequently dismissed with leave to amend. Copies of the comments are attached.

<u>Comment</u>: The potentially affected parties were concerned about effect of the proposed permit on the company's air emissions. These parties asked the Department to deny the permit if the company would be allowed to increase air emissions.

<u>Response</u>: The purpose of the permit is to allow the company to comply with the TRS 111(d) Rule that the Department adopted in early 1985. The permit allows the company to upgrade the existing TRS emission control system to reduce incidents that result in the venting of uncontrolled TRS emissions. Issuance of the proposed permit may slightly reduce the odorous emissions to which the potentially affected parties may be exposed.

<u>Comment</u>: The potentially affected parties were also concerned that the issuance of the air permit would allow the company to continue to operate, even if the parties prevailed in a water pollution action against the company.

<u>Response</u>: The issuance of an air pollution permit neither allows a company to operate a source of water pollution without an appropriate and valid water pollution permit, nor entitles a company to an appropriate and valid water pollution control permit.

Comment: The third party's petition for a hearing temporarily tolled the compliance calender of events in F.A.C. Rule 17-2.960. The company is entitled to an extension of the time allowed for compliance with the TRS regulations. The permittee verbally requested that the time allotted for submission of the required contingency plan be extended.

Response: Pursuant to F.A.C. Rule 17-2.960(1)(g)3., the Department has extended the date for compliance testing, certification, and calibration; the time allotted for submission of the contingency plan; and, the expiration date of the construction permit. The extension is equal to the 65 day period of time that elapsed between the date that the petition for a hearing was filed and the date that the Secretary's order dismissing the hearing became final.

Comment: Champion has requested that each of the limitations on operation rates in Specific Conditions Nos. 2 and 3 be amended to reflect its intended purpose. The primary concern is that the Department's limitations on maximum operation rates may not directly reflect maximum emissions and that the limitations on operation rates may be used for purposes other than air pollution control. So, the specific purpose of each of the conditions should be caveated as either "For testing, NSPS applicability purposes, and PSD purposes," or "design."

Response: The Department has incorporated most of the company's suggested language into the first two sentences of Specific Condition No. 2. The Department believes that it is neither necessary nor appropriate to specifically state the purpose of each individual permit condition. The limitations on operation rates are imposed for the purpose of implementing environmental laws and regulations. These limitations provide: (1) Reasonable assurance that each source is properly operated and maintained in a manner that minimizes emissions consistent with the design of the source and any emission control equipment; (2) One of the variables needed to define each source's "potential to emit" (U.S. vs. Louisiana Pacific); (3) Rates at which sources are to be tested; etc. If the permittee can, on the basis of actual testing, establish beyond any doubt that another operational variable more accurately reflects the potential of a source to emit, both to the NCG system and the atmosphere, then the Department will consider changing the variables to be monitored.

Comment: Champion has requested that Specific Conditions Nos. 2.a. and 2.b. be changed to specify the digester operation rates for PSD purposes on an annual average basis rather than a 30-day rolling average basis. It would be more economical in terms of time and cost for the company to record the long-term digester operation rates on an annual basis consistent with the concept of PSD.

Response: Since the company indicated that the desire was to avoid the paper work required by rolling averages, Specific Conditions Nos. 2.a. and 2.b. have been amended to allow the longest straight averaging time that the EPA will accept. Specific Conditions Nos. 2.a. and 2.b. allow the daily operation rates of the digesters to be averaged on a straight monthly basis rather than on a 30-day rolling basis.

Comment: Champion believes that it is inappropriate and counterproductive for the Department to limit the operation rates of non-production equipment. The operation rate of the condensate stripper should not be limited because the company considers the condensate stripper to be both a piece of pollution control equipment and an integral part of the Kamyr™ digester. The company states that the condensate stripper is designed to use the contaminated flash steam from the Kamyr™ digester to strip odorous gases from the contaminated condensates produced by several sources. The stripped condensates are then reused in the process. The operation rate of the condensate stripper system is not presently measured.

Response: Specific Condition No. 2.d. remains as written. The condensate stripper is by definition, 40 CFR 60 Subpart BB, a separate source of air pollution. Since the stated purpose of the condensate stripper is to remove odorous gases from contaminated condensate, it is logical to expect the quantity of condensate stripped to be directly related to the quantity of odorous gases emitted from the condensate stripper. The emissions from the condensate stripper are vented to the NCG system, conveyed to the lime kiln for incineration, and then vented to the atmosphere. So, it is necessary to limit the operation rate of the condensate stripper to: (1) Provide reasonable assurance that it is properly operated and maintained; (2) Define its potential to emit (U.S. vs. Louisiana Pacific); (3) Specify the rate of operation for source testing purposes; etc. If the permittee can, on the basis of actual testing, establish beyond any doubt that another operational variable more accurately reflects its potential to emit, both to the NCG system and the atmosphere, then the Department will consider changing the variable to be monitored.

Comment: Champion asked the Department to amend Specific Conditions Nos. 2.e. and 2.f. to allow the operation rates of the No. 1 and No. 2 multiple effect evaporators to be measured at the inlet rather than at the concentrator outlet. The company states that the operation rates of the multiple effect evaporator systems (which by definition include the concentrators) are presently measured at the inlet.

Response: Specific Conditions Nos. 2.e. and 2.f. have been amended to conform to the company's request. It is the

Department's understanding that this rate reflects the maximum quantity of black liquor solids to be processed by each of the multiple effect evaporation systems.

Comment: Champion asked the Department to amend Specific Condition No. 3 to specify the natural gas firing rate of the lime kiln as a design rate that would not require monitoring. The company does not presently maintain fuel use records on an hourly basis and does not want to incur the additional cost of maintaining these records.

Response: Specific Condition No. 3 remains unchanged. The fuel firing rate and the sulfur content of the fuel are directly related to the emissions from combustion sources such as the lime kiln. The Department does not feel that it is unreasonable to expect the company to maintain the required records.

Comment: Champion has asked that Specific Condition 4 be amended to allow Vent I (diffusion washer) and Vent II (washer filtrate tank) to emit directly to the atmosphere. Neither the Department nor the EPA required the company to control emissions from these vents when the diffusion washer system was originally permitted in 1979. But, the company was required to continuously monitor emissions from the vents. The company decided that it was more economical to collect and incinerate the emissions. As a result, the 1979 construction permit was amended to require the collection and incineration of the emissions from these vents. The company points out that the EPA has taken actions which exempt brown stock diffusion washer systems from the requirements of 40 CFR 60 Subpart BB. Uncontrolled TRS emissions from the brown stock diffusion washer system are estimated to be less than 0.7 tons per year compared to an estimated TRS emission reduction of 70 tons per year resulting from the other aspects of the proposed project.

Response: The Department has amended the proposed permit to reflect the company's request. This action is based on a review of the information supplied by the company in support of the request. In addition, the 40 CFR 60 Subpart BB of the federal regulations has been reviewed to determine whether the requested action conforms to those regulations. On May 20, 1986, the EPA published a notice in the Federal Register (51 FR 18538) amending the requirements of 40 CFR 60 Subpart BB to deregulate brown stock diffusion washer systems. The notice stated, "Today's rulemaking promulgates six revisions and two corrections to the standards. These revisions will:.....and (6) exempt diffusion washers from the TRS standard for brown stock washer systems." The EPA used this notice to amend the definition of brown stock washer system, 40 CFR 60.281(e), by adding the sentence, "Diffusion washers are excluded from this definition." Based on the Department's review of the federal rulemaking, the above referenced statements deregulate the brown stock diffusion washer systems.

The final action of the Department is to issue the permit with the amendments described above.

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:
Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533

Permit Number: AC 17-142004
Expiration Date: Nov. 28, 1989
County: Escambia
Latitude/Longitude: 30°36'20"N
87°19'26"W
Project: Construction of Physical Changes to the Batch Digester System, Kamyr™ Digester System, Brown Stock Diffusion Washer System, Condensate Stripper System, Nos. 1 and 2 Multiple Effect Evaporator Systems, and Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 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:

The construction of physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.), and the lime kiln. The proposal includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to enable the applicant to reduce the venting of uncontrolled TRS emissions.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Nov. 28, 1989

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

Attachments are listed below:

1. Permit application for noncondensable gas (NCG) handling system (batch digester system, Kamyr™ digester system, condensate stripper system, Nos. 1 and 2 multiple effect evaporator systems, and lime kiln), received November 13, 1987.

2. C. H. Fancy's letter to T. P. Crane, dated December 11, 1987.

3. D. T. Arceneaux's letter to C. H. Fancy, dated September 19, 1988, received October 14, 1988.

4. C. H. Fancy's letter to D. T. Arceneaux, dated November 10, 1988.

5. D. T. Arceneaux's letter to C. H. Fancy, dated December 19, 1988, received December 21, 1988.

6. D. T. Arceneaux's letter to M. D. Harley, dated January 13, 1989, received January 18, 1989.

7. Technical Evaluation and Preliminary Determination dated March 3, 1989.

8. D. T. Arceneaux's letter to M. D. Harley, dated April 17, 1989, received April 19, 1989.

9. Final Determination dated June 7, 1989.

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.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Nov. 28, 1989

GENERAL CONDITIONS:

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 therefor 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.

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 non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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 non-compliance 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)
(X) Compliance with New Source Performance Standards (Kamyr™ digester system, condensate stripper system, No. 2 multiple effect evaporator system)

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.

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 non-NSPS batch digester system, NSPS Kamyr™ digester system, non-NSPS brown stock diffusion washer system, NSPS condensate stripper system, non-NSPS No. 1 multiple effect evaporator system, NSPS No. 2 multiple effect evaporator system, and the non-NSPS lime kiln are permitted to operate continuously (i.e., 8760 hrs./yr.).

2. The following are the maximum operation rates for each of the permitted sources for purposes of the environmental laws and regulations implemented by this permit. These operation rates shall be monitored and recorded.

a. For testing purposes and NSPS applicability purposes, the maximum production rate of the batch digester system shall be 45 tons of air dry unbleached pulp (TADUP)/hr. and 864 TADUP/day. Tests for compliance shall be conducted with the lime kiln operating at 90-100% of the maximum lime kiln operating rate and with the batch digester system operating as near the maximum production rate as possible, but in no case shall the operation rate of the digesters be less than 85% of the maximum operation rate when testing. For PSD purposes the maximum operation rate shall be 756 TADUP/day as a monthly average.

b. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr™ digester system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day as a monthly average.

c. For testing purposes and NSPS applicability purposes, the maximum production rate of the brown stock diffusion washer system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day as a monthly average.

PERMITTEE:
Champion International Corp.

SPECIFIC CONDITIONS:

Permit Number: AC 17-142004

Expiration Date: Nov. 28, 1989

d. The maximum operation rate of the condensate stripper shall not exceed 215,000 lbs./hr. (430 gals./min.) of liquid feed to the condensate stripper.

e. The maximum operation rate of the No. 1 multiple effect evaporator system shall not exceed 181,000 lbs. of dry black liquor solids (BLS)/hr. measured as flow and solids input to the No. 1 multiple effect evaporator system.

f. The maximum operation rate of the No. 2 multiple effect evaporator system shall not exceed 97,000 lbs. of dry BLS/hr. measured as flow and solids input to the No. 2 multiple effect evaporator system.

g. The maximum operation rate of the lime kiln shall not exceed 14.5 tons/hr. of calcium oxide plus inerts, and is based on an input of 48,857 lbs./hr. of lime mud (calcium oxide plus 15% inerts).

3. The maximum rate of natural gas firing in the lime kiln shall not exceed 130,000 dry standard cubic feet (60°F and 14.7 psia)/hr. during normal operations including maximum production. A maximum firing rate of 216,000 dry standard cubic feet (60°F and 14.7 psia)/hr. shall be allowed for heat up after a cold shutdown or during unusual conditions. The maximum sulfur content of the natural gas shall not exceed 0.3% by weight (1 grain/100 dry standard cubic feet).

4. The emissions from the batch digester system (consisting of 12 batch digester systems); the Kamyr™ digester system; the condensate stripper system; the No. 1 multiple effect evaporator system; and, the No. 2 multiple effect evaporator system shall be collected and incinerated in the lime kiln. TRS emissions from Vent I (diffusion washer) and Vent II (washer filtrate tank) of the brown stock diffusion washer system may be vented to the atmosphere providing gases and vapors from the Kamyr™ digester system are not vented to the brown stock diffusion washer system. All TRS gases burned in the lime kiln shall be subjected to a minimum temperature of 1200°F for at least 0.5 second. TRS emissions shall be determined by EPA Methods 1, 2, 3, and either 16 or 16A (40 CFR 60 revised as of July 1, 1988).

Note: Each batch digester system includes the blow tank(s), blow heat accumulator, turpentine condenser system, etc. The Kamyr™ digester system includes the Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc. The No. 1

multiple effect evaporator system includes 6 evaporator effects, 2 concentrators, a hotwell, etc. The brown stock diffusion washer system includes the diffusion washer, the washer filtrate tank, etc. The No. 2 multiple effect evaporator system includes 6 evaporation effects (counting the concentrator), condenser, etc. Actual mass emissions from each system shall be determined prior to and after any future changes, meaning those changes to the permitted systems not specifically authorized by these permits.

5. TRS emissions from the lime kiln shall not exceed 20 ppmv on a dry basis at standard conditions corrected to 10% oxygen as a 12-hour average. Mass TRS emissions from the lime kiln shall exceed neither 4.40 lbs./hr. nor 19.3 tons/yr. The mass TRS emissions are the maximum permitted aggregate total mass emissions allowed for the permitted sources. TRS emissions shall be determined by EPA Methods 1, 2, 3, and either 16 or 16A.

6. Particulate emissions from the lime kiln shall exceed neither the limits allowed by the process weight table in F.A.C. Rule 17-2.610, nor 26.1 lbs./hr. nor 19.3 tons/yr. Particulate emissions shall be determined by EPA Methods 1, 2, 3, and 5 (40 CFR 60 revised as of July 1, 1988).

7. Visible emissions from the lime kiln shall be limited to 20 percent opacity. If the Department observes visible emissions in excess of 20 percent opacity beyond the dissipated steam plume, it shall be considered good reason to believe that the applicable mass emission limiting standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with F.A.C. Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after notification by the Department.

8. The lime kiln shall be equipped with a TRS continuous emission monitoring system pursuant to all applicable requirements of F.A.C. Rule 17-2.710 and 40 CFR 60. Excess emissions of TRS shall be reported and evaluated pursuant to the applicable requirements of F.A.C. Rule 17-2.710(4).

9. All excess emissions from the batch digester system, the Kamyr™ digester system, the condensate stripper system, the No. 1 multiple effect evaporator system, the No. 2 multiple effect evaporator system, the noncondensable gas handling (NCG) system, and the lime kiln shall be subject to the applicable requirements of F.A.C. Rules 17-2.240 [Circumvention], 17-2.250 [Excess Emissions], 17-2.600(4)(c)1.c. [Specific Source Emission Limiting Standards-Kraft (Sulfate) Pulp Mills and Tall Oil

SPECIFIC CONDITIONS:

Plants-TRS-Digester Systems, etc.], and 17-4.130 [Plant Operation Problems]. The required contingency plan shall be submitted to the DER Northwest District office no later than 105 days before the expiration date of this permit.

10. All monitoring and recording systems shall be regularly calibrated and maintained in proper working condition pursuant to written procedures and schedules based on the recommendations of the instrument manufacturer.

11. The lime kiln shall be equipped with the point source sampling facilities required by F.A.C. Rule 17-2.700. Point source compliance testing shall be conducted with all sources operating at 90 to 100 percent of operation rates allowed by Specific Conditions Nos. 2 and 3. All point source emission tests shall be conducted using the applicable methods and procedures in F.A.C. Rule 17-2.700.

Note: For testing purposes, Specific Condition No. 2.a. allows the operation rate of the batch digester system to be as low as 85 percent of the maximum operation rate allowed by Specific Condition No. 2.a.

12. The permittee shall test the lime kiln for SO_2 emissions prior to and after the construction authorized in this permit. The purpose of the testing will be to establish the changes in SO_2 emissions for PSD tracking purposes. The tests shall be performed using EPA Method 6 in accordance with F.A.C. Rule 17-2.700(6)(b)6. or an alternate method approved by the Department in accordance with F.A.C. Rule 17-2.700. The testing required by this permit condition is on a one-time basis.

13. Initial compliance testing, certification, and calibration shall be completed not later than 135 days before the expiration date of this permit. Compliance tests shall be conducted annually, thereafter. The compliance test reports shall include all of the information required by F.A.C. Rule 17-2.700(7). The test report shall be submitted within 30 days after completion of the testing. Notification of testing shall be furnished to the DER Northwest District office at least 15 days prior to the date that testing is to commence.

14. The permanent source identification numbers assigned to the permitted sources are as follows:

10PEN17004253	Batch Digester System.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Nov. 28, 1989

SPECIFIC CONDITIONS:

10PEN17004254	Kamyr™ Continuous Digester System, Condensate Stripper System, and Brown Stock Diffusion Washer System.
10PEN17004255	No. 1 and No. 2 Multiple Effect Evaporator Systems.
10PEN17004228	Lime Kiln.

Please cite the appropriate number on all test reports and other correspondence for each permitted point source.

15. The permittee for good cause, may request that this construction permit be extended. Such request shall be submitted to the BAQM prior to 60 days before the expiration date of the permit (F.A.C. Rule 17-4.090).

16. The application for an operation permit must be submitted to the Northwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after the completion of compliance testing whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 7 day
of June, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

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

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

RECEIVED
JUN 7 1989
Office of the Secretary

TO: Dale Twachtmann

for FROM: Steve Smallwood

SUBJ: Approval of Construction Permit No. AC 17-142004
Champion International Corporation

DATE: June 7, 1989

Attached for your approval and signature is a permit prepared by Central Air Permitting for the above mentioned company to make physical changes to the NSPS Kamyr™ continuous digester system, the non-NSPS batch digester system, the non-NSPS No. 1 multiple effect evaporator system, the NSPS No. 2 multiple effect evaporator systems, the NSPS condensate stripper system, the NSPS brown stock diffusion washer system (including filtrate tank), and the non-NSPS lime kiln. The purpose of the changes is to enable the applicant to reduce the venting of uncontrolled TRS emissions. The projects are to located at the kraft pulp mill owned by Champion International, 375 Muscogee Road, Cantonment, Escambia County, Florida.

The Department's action is expected to resolve the issues that resulted in the company's request for an extension of time to file for an administrative hearing. The company has withdrawn its request following a review of the attached material. Your order dismissing Ester Johnson's request for a hearing has become final.

I recommend your approval and signature.

SS/CH/h

attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ESTER L. JOHNSON,

Petitioner

vs.

OGC FILE NO. 89-0311

CHAMPION INTERNATIONAL CORP.
and STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Respondents.

RECEIVED
MAY 10 1989
DER - BAQM

FINAL ORDER DISMISSING PETITION FOR HEARING WITH LEAVE TO AMEND

On March 20, 1989, the Department of Environmental Regulation, Bureau of Air Quality Management, received a combined request for extension of time and petition for informal hearing from Petitioner, Ester L. Johnson, objecting to the Department's Intent to Issue a permit to Champion International Corporation (see Exhibit 1).

Florida Administrative Code Rule 17-103.155(2) provides the following guidance on what must be included in a petition for a formal administrative proceeding:

(a) The name, address, and telephone number of each Petitioner, the applicant's name and address, the Department File Number and the county in which the project is proposed;

(b) A statement of how and when each Petitioner received notice of the Department's action or proposed action;

(c) A statement of how each Petitioner's substantial interests are affected by the Department's action or proposed action;

RECEIVED
MAY 09 1989
DIVISION OF
WATER MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO	
ACTION DUE DATE	

1. TO: (NAME, OFFICE, LOCATION)	
1. ~~Steve Smallwood~~	Initial / Date
2. Patty 5/12	Initial / Date
3. RECEIVED	Initial / Date
4. MAY 10 1989	Initial / Date

REMARKS: DER - BAQM

FYI

If this is the permit I think it is, we need to go ahead and issue asap.

Alain

INFORMATION

- Review & Return
- Review & File
- Initial & Forward

DISPOSITION

- Review & Respond
- Prepare Response
- For My Signature
- For Your Signature
- Let's Discuss
- Set Up Meeting
- Investigate & Report
- Initial & Forward
- Distribute
- Concurrence
- For Processing
- Initial & Return

FROM: Mike Batt

DATE 5-9-89

PHONE 8-0130

(d) A statement of the material facts (i.e., those facts upon which the Department's action or proposal is based) disputed by Petitioner, if any;

(e) A statement of the facts that Petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes Petitioner contends require reversal or modification of the Department's action or proposed action;

(g) A statement of the relief sought by Petitioner, stating precisely the action Petitioner wants the Department to take with respect to the Department's action or proposed action.

Petitioner's request for extension of time and/or informal hearing does not comply with Rule 17-103.155(2) and therefore does not contain sufficient information to determine whether a formal administrative proceeding should be held. Specifically, the request does not include the items listed below:

1) The petition did not describe the contested proposed agency action or reference the Department Permit File Number of the contested project.

2) The petition failed to allege how the Petitioner's substantial interests are affected by the Department's proposed action on this permit application.

3) The petition failed to address the existence or non-existence of any dispute over the material facts upon which the Department's proposed action is based.

4) The petition did not identify which rules or statutes that the petitioner contends require reversal or modification of the Department's proposed action.

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO	
ACTION DUE DATE	

1. TO: (NAME, OFFICE, LOCATION)	
Mike Harley	Initial
	Date
2. Air Bureau	Initial
	Date
3. RM 309 K	Initial
	Date
4.	Initial
	Date

REMARKS:

RECEIVED

MAY 9 1989

DER - BAQM

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

FROM: Steve Hall

DATE 5-9-89

PHONE

Rule 17-103.070, Florida Administrative Code provides the following guidelines for the submission and disposition of requests for extension of time to file a petition for a Section 120.57 hearing:

(1) The hearing officer, or if no hearing officer is presiding, the Secretary of the Department, may for good cause shown grant an extension of time for the service of filing of any pleading required or permitted by Department rule.

(2) A request for extension of time must be served on all parties and filed with the Department. A request shall set forth the grounds for granting of an extension, contain a certificate that the moving party has consulted with the opposing party or his counsel concerning the extension, and state whether or not the opposing party objects to such an extension. Written objections may be filed within five days of service of the request for extension.

The petitioner's request does not provide any allegations of grounds for granting of the requested extension of time to file for a Section 120.57 hearing. Such an extension may only be granted upon a showing of good cause by the Petitioner.

In consideration of the deficiencies listed above, it is ORDERED that the request for extension of time/petition for informal hearing filed by Petitioner is hereby DISMISSED.

Such dismissal is without prejudice to Petitioner filing an amended petition which addresses said deficiencies. The amended petition must be filed (received) in the Office of General Counsel, Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 within 15 days from the date set forth in the Certificate of Service on the last page of this Order. This Order constitutes final agency action of the Department unless a timely amended petition is filed in conformance with this Order.

Any party to this Order has the right to seek judicial review of the Order 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 this Order is filed with the clerk of the Department.

DONE AND ORDERED this 4 day of May, 1989, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann

DALE TWACHTMANN
Secretary

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: (904)488-4805

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk — Date 5-5-89

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished to Ester L. Johnson, 13090 Lillian Highway, Pensacola, Florida 32506 by U.S. Mail on this 8th day of May, 1989.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

STEVEN K. HALL
Assistant General Counsel

2600 Blair Stone Road
Tallahassee, FL 32399-2400

Best Available Copy

Estie L. Johnson
13090 Lillian Highway
Pensacola, Florida
32506

Florida Department of Environmental Regulations
Champion International Corp. Legal No. 35777
Bureau of Air Quality Management

a) Estie L. Johnson, 13090 Lillian High Way, Pensacola Florida request for extension of time and a informal hearing under 40 C.F.R. Part 124. Under section 120.57 Florida Statutes.

b) Notice of Intent to Issue by Florida Department of Environmental Dept. to Champion International Corp. was Published in Pensacola News Journal, Friday March 10, 1989. AC 17-142004

c) My family and I have lived on Perdido Bay for over 32 years. I've seen a big change in the air quality now and what it use to be, at times air quality so bad causes eyes to water and nose to run.

d) — It would take a scientist or biologist to
e) — answer these questions and I am just a mother
(f) — and grandmother.
g) —

The need is to hold an informal Hearing so that this permitt can be explained to the Fullest.

RECEIVED
MAR 20 1989
DER BAQM

Respectively,
Estie L. Johnson
13090 Lillian High Way
Pensacola Florida 32506

EXHIBIT 1

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

4-17-89
Cantonment, FL

file copy

Champion
Champion International Corporation

RECEIVED
APR 19 1989
DER - BAQM

April 17, 1989

Mr. Michael D. Harley, Engineer
Bureau of Air Quality Management
State of Florida
Florida Department of Environmental
Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: DER File No. AC 17-142004

Dear Mr. Harley:

Attached for your review are Champion's comments on the NCG Construction Permit Application and DER's Draft Permit, AC 17-142004. These comments should address the concerns both of the department and Champion. The two (2) significant issues addressed are the operation rates in Specific Condition 2, and the treatment of Vents I and II from the Kamyr diffusion washer. Champion is requesting that these vents not be treated for the reasons discussed in the attached comments. Champion is also submitting alternate language for Specific Condition 2 and 3 which we believe is more in line with the agreement reached between the industry and the department.

If you or your staff have any questions concerning these comments, please call. I will call on Friday, April 21, 1989, to discuss the status.

Sincerely,

SC

David T. Arceneaux

David T. Arceneaux
Supervisor
Environmental Control

DTA/sc

Attachments

cc: Ed Middleswart, DER
copied: M. Harley
CHF/BT

Comments on DER Permit, AC 17-142004

OPERATION RATES

The operation rates identified in Specific Condition 2 are generally the design maximum rates for each source. Champion's concern is the establishment of an operation rate permit limit independent of emission and inconsistent with regulations. The establishment of any permit limit is viewed by Champion to be a significant event requiring adherence to that value. The necessary monitoring and review required, as well as tracking compliance imposes a significant work load. Where these limits are necessary to protect the environment, Champion believes them to be important and a proper condition in a permit. However, where a limit is not necessary, then the establishment of a production limit imposes unnecessary monitoring and tracking burden.

The specific concerns in Specific Condition 2 relate to the establishment of production rates independent of emissions. It is this reason that the production rates should be stated as to their intended purposes, and only be actual limits where there is a direct impact on emissions. In addition, the establishment of production rates for non-production equipment (i.e., pollution control equipment) is unnecessary and counter-productive. The condensate stripper is designed to remove odor gases from condensate before reuse. The stripper is an integral part of the Kamyr digester and uses the contaminated flash steam from the Kamyr to strip contaminated condensate from several sources. However, there is not a measurable production value associated with the stripper.

With the above comments in mind, Champion would like to propose the following language for Condition 2.

SPECIFIC CONDITIONS:

2. The following are the maximum operation rates for each of the permitted sources for the indicated purposes. These operation rates shall be monitored and recorded.

   a. For testing purposes and NSPS applicability purposes, the maximum production rate of the batch digester system shall be 45 tons of air dry unbleached pulp (TADUP)/hr. and 864 TADUP/day.

Tests for compliance shall be conducted with the lime kiln operating at 90-100% of the maximum lime kiln operating rate and with the batch digester system operating as near the maximum production rate as possible, but in no case shall the operation rate of the digesters be less than 85% of the maximum operation rate when testing. For PSD purposes, the maximum operation rate shall be 756 TADUP/day on an annual average.

b. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr digester system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average.

c. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr brown stock diffusion washer system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average.

d. The design hydraulic loading of the condensate stripping column is 215,000 pounds/hour (430 gallons/minute) of liquid feed.

e. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 1 multiple effect evaporator system shall be 181,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

f. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 2 multiple effect evaporator system shall be 97,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

g. The maximum operation rate of the lime kiln shall not exceed 14.5 tons per hour of calcium oxide and is based on an input of 48,857 pounds per hour of lime mud feed.

3. The design rate of natural gas firing in the lime kiln is 130,000 dry standard cubic feet ($60^{o}F$ and 14.7 psia) per hour during normal operation including maximum production. The maximum design rate of natural gas firing is 216,000.

DIFFUSION WASHER SYSTEM

Champion is requesting that Vents I and II from the diffusion washer system be emitted to the atmosphere without treatment. When originally permitted in 1979, the BACT review by both DER and EPA resulted in a determination that these vents be emitted untreated. The vents were however, required to be monitored. The company at that time decided that collection and treatment were less expensive then monitoring. Since that determination, EPA NSPS rules have changed and allow for the venting of sources when the total mass TRS is less than 0.01 pounds per ton ADP (Subpart BB, 60.283(a)(1)(vi)) without requiring continuous monitoring. The basis of this exemption was work done by NCASI and reported in Technical Bulletin No. 406 (copy attached).

The two (2) vessel Kamyr digester system operating at the Pensacola Mill contained within the system a hi-heat wash zone and cooling zone. Thus, odor gases generated in the digester and released through the normal "blowing" process are collected in the NCG system. Flash steam is collected in flash tanks and used in the condensate stripper. All normal odor gas sources are thus collected and incinerated. Figure 1 shows the entire Kamyr system. The cooled, washed pulp is discharged through the Kamyr outlet device to the diffusion washer. This process is called "low temperature blowing" and is shown on Figure 2. The diffusion washer system takes the partial washed pulp and completes washing before high density storage (Figure 3). The filtrate tank is a two (2) compartment tank which holds filtrate from both extraction stages. The operational function of diffusion washers is explained in detail in the NCASI Bulletin.

The top cover of the diffusion washer contains a vent pipe to permit exchange of air when the washer is being filled or emptied. Normal washer operation is to have fixed liquid/stock level. Thus, the vent is an atmospheric vent with essentially no flow but with a large surface area. It is this feature which makes the vent incompatible with the new NCG collection system.

The existing system is a low concentration, high flow system using fans to transport gases, with dilution from ambient air. The collection of a large surface area with no forced flow is not a problem. The new system however, is a stream-ejector driven high concentration/low flow system. It would be impracticable to collect a large surface area system.

Although this request would allow the venting of existing control sources, the impact on air quality would be negligible. The total mass emissions of TRS gases from these sources is very small (<0.005 pounds/TADP), and would represent <0.7 tons per year at H2S. In comparison, the improved NCG system will collect and incinerate approximately 5% additional TRS gases from the batch digester system. At an estimated generation of 10 pounds of TRS per ton of pulp, this represents approximately 70 tons per year of additionally controlled TRS.

In conclusion, as stated above, the new system is not compatible with collecting diffusion washer vents. These vents were allowed to be vented in the original BACT determination, and current NSPS regulations exempt these vents from control and monitoring.

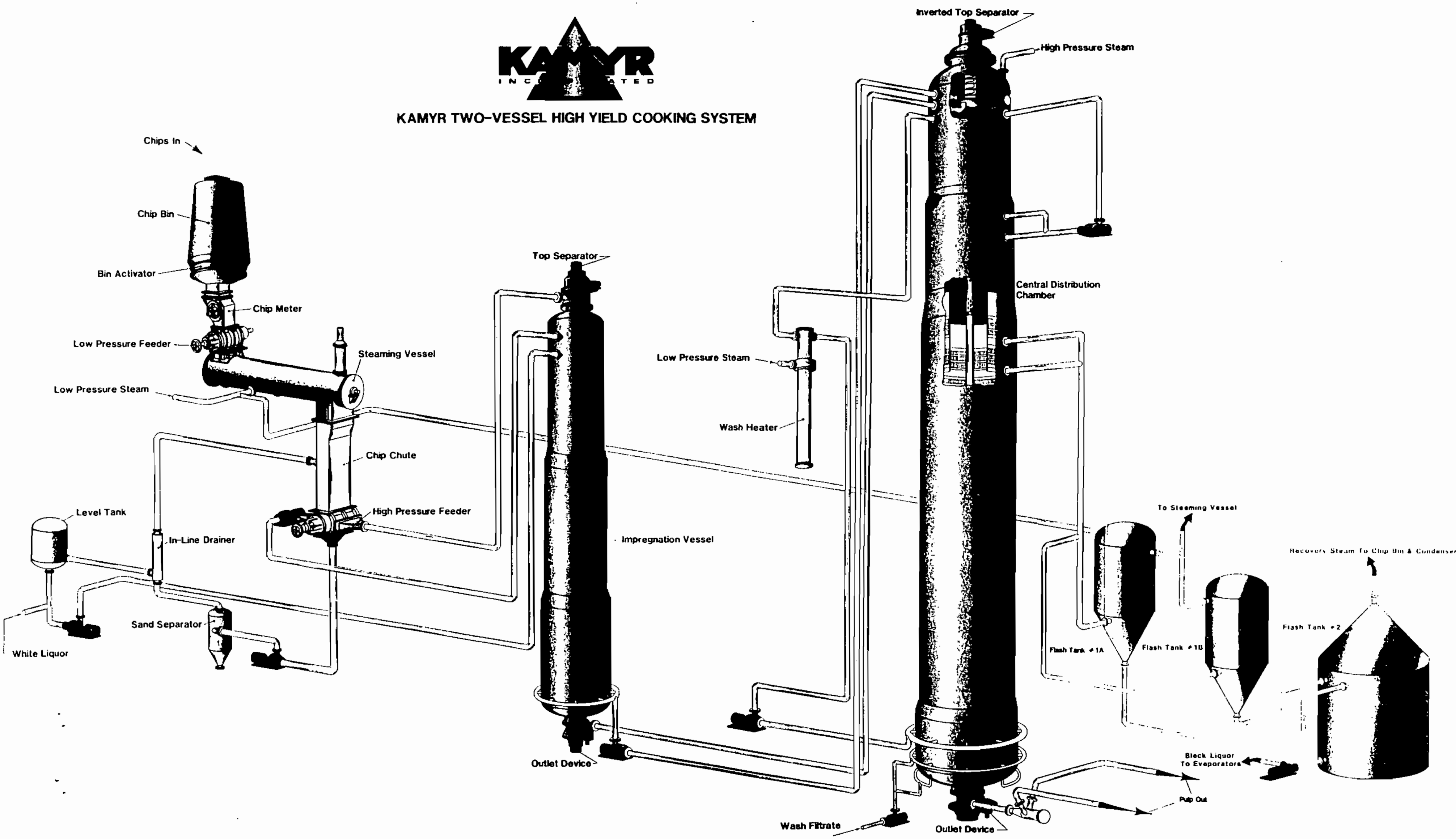
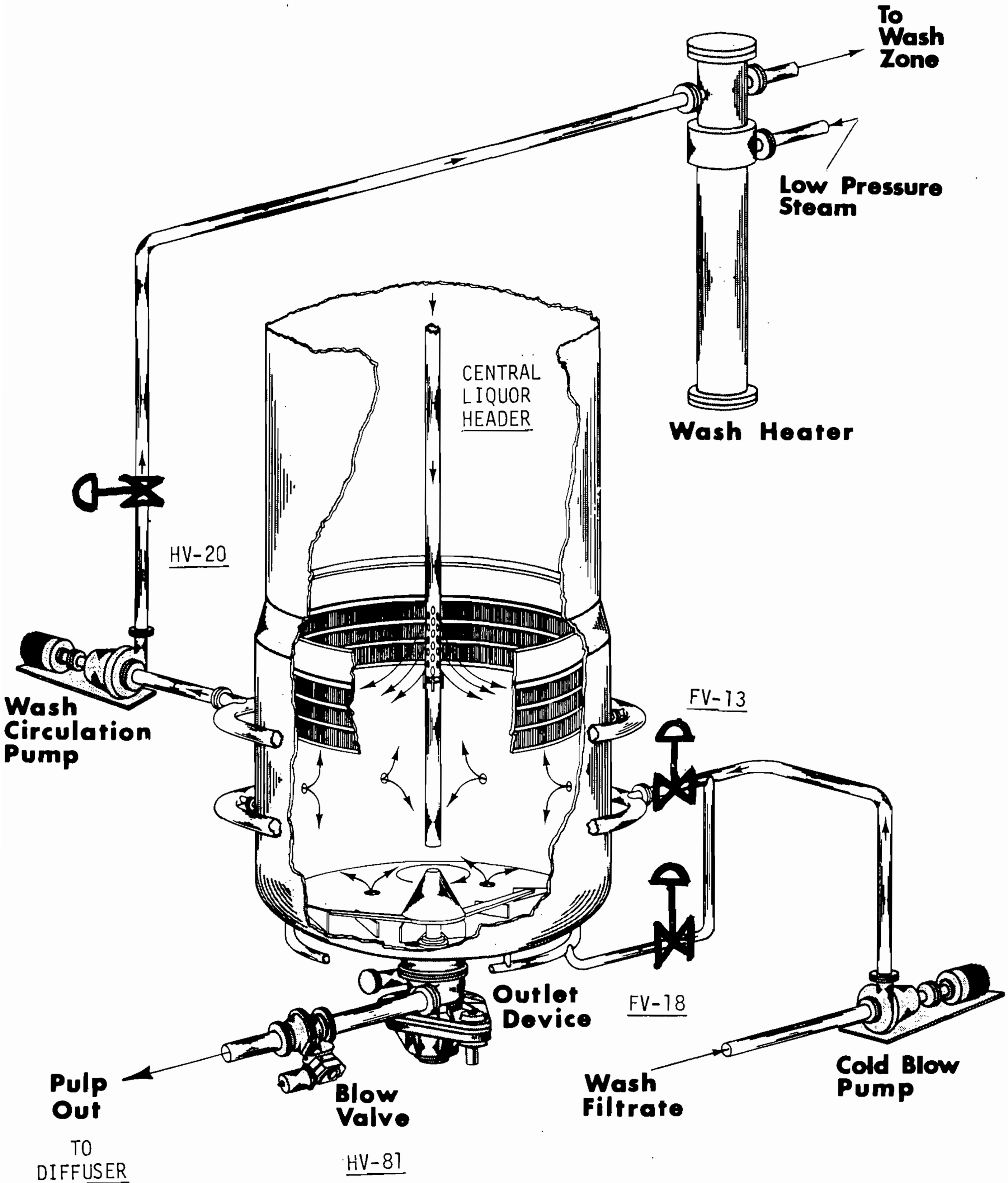

KAMYR
INCORPORATED
KAMYR TWO-VESSEL HIGH YIELD COOKING SYSTEM
Chips In
Chip Bin
Bin Activator
Chip Meter
Low Pressure Feeder
Steaming Vessel
Low Pressure Steam
Chip Chute
Level Tank
In-Line Drainer
High Pressure Feeder
Sand Separator
White Liquor
Top Separator
Impregnation Vessel
Outlet Device
Low Pressure Steam
Wash Heater
Inverted Top Separator
High Pressure Steam
Central Distribution Chamber
To Steaming Vessel
Recovery Steam To Chip Bin & Condenser
Flash Tank #1A
Flash Tank #1B
Flash Tank #2
Black Liquor To Evaporators
Pulp Out
Wash Filtrate
Outlet Device

FIGURE 1

FIGURE 2

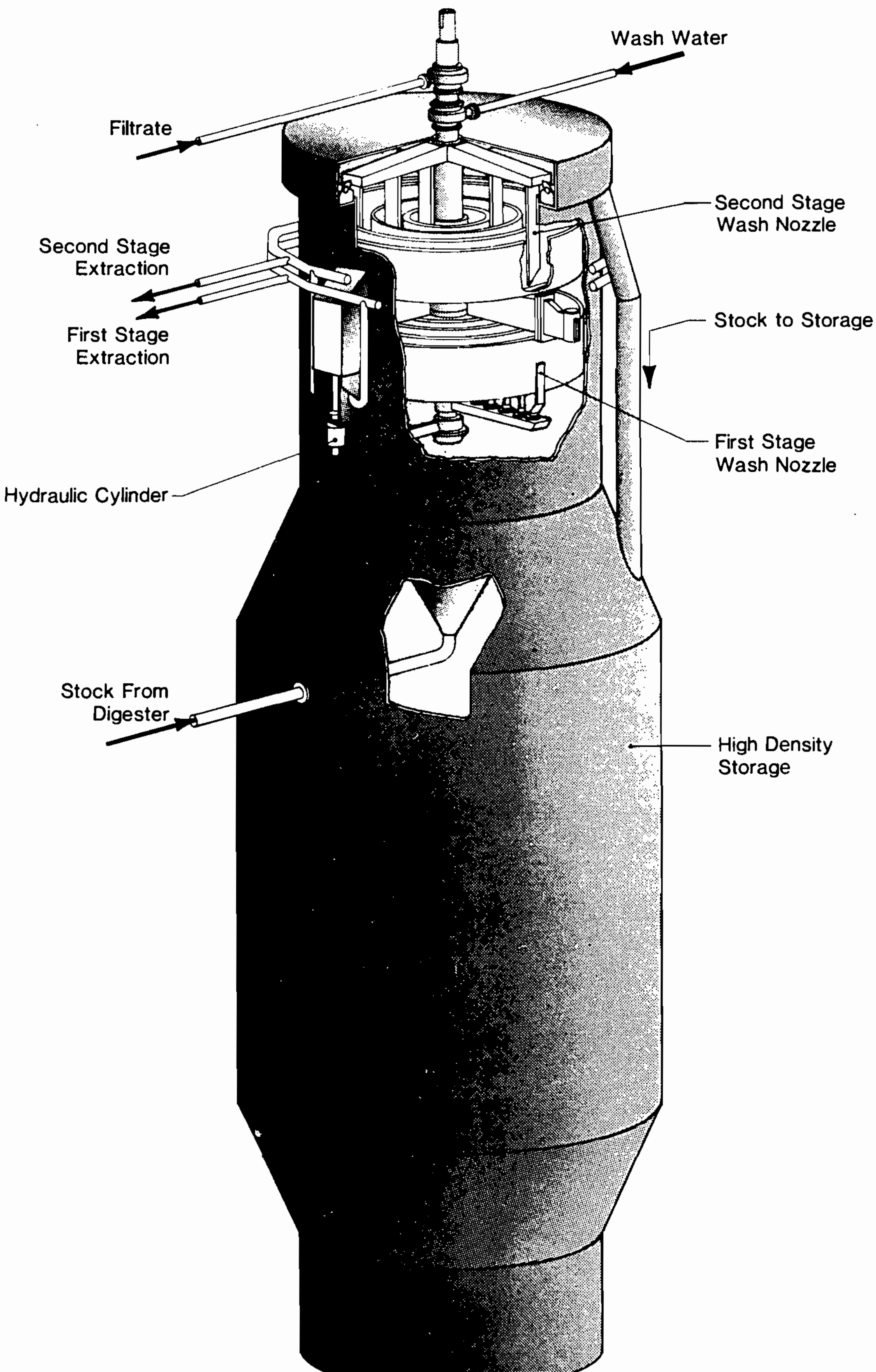


LOW TEMPERATURE BLOWING

TWO-STAGE BROWNSTOCK DIFFUSER MOUNTED ON HIGH DENSITY STORAGE

1-0213-68

FIGURE 3



CHARLES ~~HAROLD~~ file

ncasi technical bulletin

NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC., 260 MADISON AVENUE, NEW YORK, N.Y. 10

EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

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TECHNICAL BULLETIN NO. 406

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NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC.
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EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

In the recently distributed Draft Background Information Document and Draft Proposed Emission Standards, which are part of the New Source Performance Standards (NSPS)-mandated review of NSPS for the kraft pulping industry, the United States Environmental Protection Agency (EPA) included a proposal that total reduced sulfur (TRS) emissions from kraft brownstock diffusion washers be subject to control. In considering brownstock diffusion washer control, EPA has assumed that TRS emissions from this source are similar to those from drum washers. The estimates for cost effectiveness include therefore an assumed emission rate, although the estimated volume which might require treatment has been reduced.

The experience of National Council and industry personnel relative to emissions of reduced sulfur compounds from unit operations involving liquid/air contact in which kraft process black liquor is (or is perceived as being) the source of these emissions, is that a number of factors are important to the magnitude of emissions. Unfortunately, very little data on TRS concentrations and gas flows from brownstock diffusion washers had been generated by industry, or by the diffusion washer manufacturer, and none of the data which had been obtained have appeared in the accessible literature. Consequently, the National Council undertook a study to determine the composition and emission rate of reduced sulfur gas emissions from diffusion washer vents.

The attached technical bulletin prepared by Dr. Robert P. Fisher, Investigative Programs Manager, is based on measurements carried out on nine diffusion washer vents in the kraft industry. Dr. Robert P. Fisher, Mr. David C. Rovell-Rixx, Research Engineer, Mr. Charles G. Simon, Research Chemist assisted by Leon J. Larson, and Van H. Dozier, all of the Southern Regional Center, carried out the field studies.

In summary, the study showed gas flow rates from kraft brownstock diffusion washers to be extremely low. Total reduced sulfur concentrations ranged from 3 to 30 ppm with a mean of 17 ppm. The mean mass emission rate of total reduced sulfur from diffusion washers was found to be less than 0.001 lbs/ton pulp compared to a mean of about 0.1 lb/ton pulp from conventional washers. Even though the concentration of total reduced sulfur from brownstock diffusion washers was generally found to be greater than that allowed for new conventional washer sources, diffusion washers were found to be a far less significant source in terms of mass emission rate.

Your comments and questions on the contents of this technical bulletin are solicited and should be directed to me or to Dr. Robert P. Fisher, Investigative Programs Manager, P.O. Box 14483, Gainesville, Florida 32604 (telephone - 904-377-4708).

Yours very truly,

Russell O. Blosser
Technical Director

ROB:mh
Attach.

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EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

I INTRODUCTION

In the recently distributed Draft Background Information Document and Draft Proposed Emission Standards, which are part of the New Source Performance Standards (NSPS)-mandated review of NSPS for the kraft pulping industry, the United States Environmental Protection Agency (EPA) included a proposal that total reduced sulfur (TRS) emissions from brownstock diffusion washers be subject to control. In considering brownstock diffusion washer control, EPA has assumed that TRS emissions from this source are similar to those from drum washers. The estimates for cost effectiveness include therefore an assumed emission rate, although the estimated volume which might require treatment has been reduced.

The experience of National Council and industry personnel relative to emissions of reduced sulfur compounds from unit operations involving liquid/air contact in which kraft process black liquor is (or is perceived as being) the source of these emissions, is that a number of factors, among them the air turbulence/contact which the black liquor encounters, are important to the magnitude of emissions. Because of the significantly lower opportunity for air contact with black liquor in a multi-stage diffusion pulp washer, as opposed to a series of vacuum drum washers, TRS emissions from the vents on diffusion washers would be expected to be significantly lower than those from vacuum drum washers. Unfortunately, very little data on TRS concentrations and gas flows from brownstock diffusion washers have been generated by industry, or by the diffusion washer manufacturer, and none of the data which have been obtained have appeared in the accessible literature. Consequently, the National Council investigation described in this report was undertaken, with the following objectives:

(1) the measurement of gas flow rates from continuous brownstock diffusion washer vents;

(2) the determination of TRS concentrations in diffusion washer vent emissions;

(3) the identification of reduced sulfur species and the determination of individual species concentrations in these emissions;

(4) the correlation of continuous brownstock diffusion washer operating practices with magnitudes of washer vent gas flow rates and TRS concentrations;

(5) the comparison of continuous brownstock diffusion washer vent TRS mass emission rates (new data) with TRS mass emission rates from conventional vacuum drum brownstock washer vents (existing data);

(6) the collection and presentation of TRS mass emission rate data from continuous brownstock diffusion washer filtrate tank vents.

II BACKGROUND

A. Brownstock Washer Systems

(1) Operating Principles of Diffusion Washers - As opposed to conventional systems in which pulp is washed sequentially on rotary drum vacuum filters exposed to the atmosphere, washing in a diffusion washer is an enclosed process not involving air contact. Although the opportunity for oxidation of liquor sulfide is thereby reduced, the potential for the release of volatile organic sulfides from the liquor accompanying the pulp is also reduced.

The following description of the operation of a brownstock diffusion washer is quoted from Kamyr product literature (1), with permission. Figures 1, 2, and 3 are also from this reference.

> High consistency pulp enters the conical bottom of the unit and passes slowly upwards through the first [Figure 1] and second [Figure 2] stage diffusers.
>
> The diffuser performs the function of draining the liquor from the pulp. By means of the distribution nozzles, wash medium equal to the amount extracted is added plus the amount of dilution factor required to accomplish the desired washing.
>
> The liquor withdrawn from the diffuser flows to a small (five minute retention) filtrate tank.
>
> The diffuser assembly is a series of concentric double sided screen rings. Each ring is made of two perforated plates spaced and joined approximately two inches apart. The rings are spaced approximately 20 inches apart. The screen plates are welded together top and bottom to form a hollow shell. The bottom of the shell contains a drainage channel. The screen assembly, made up of

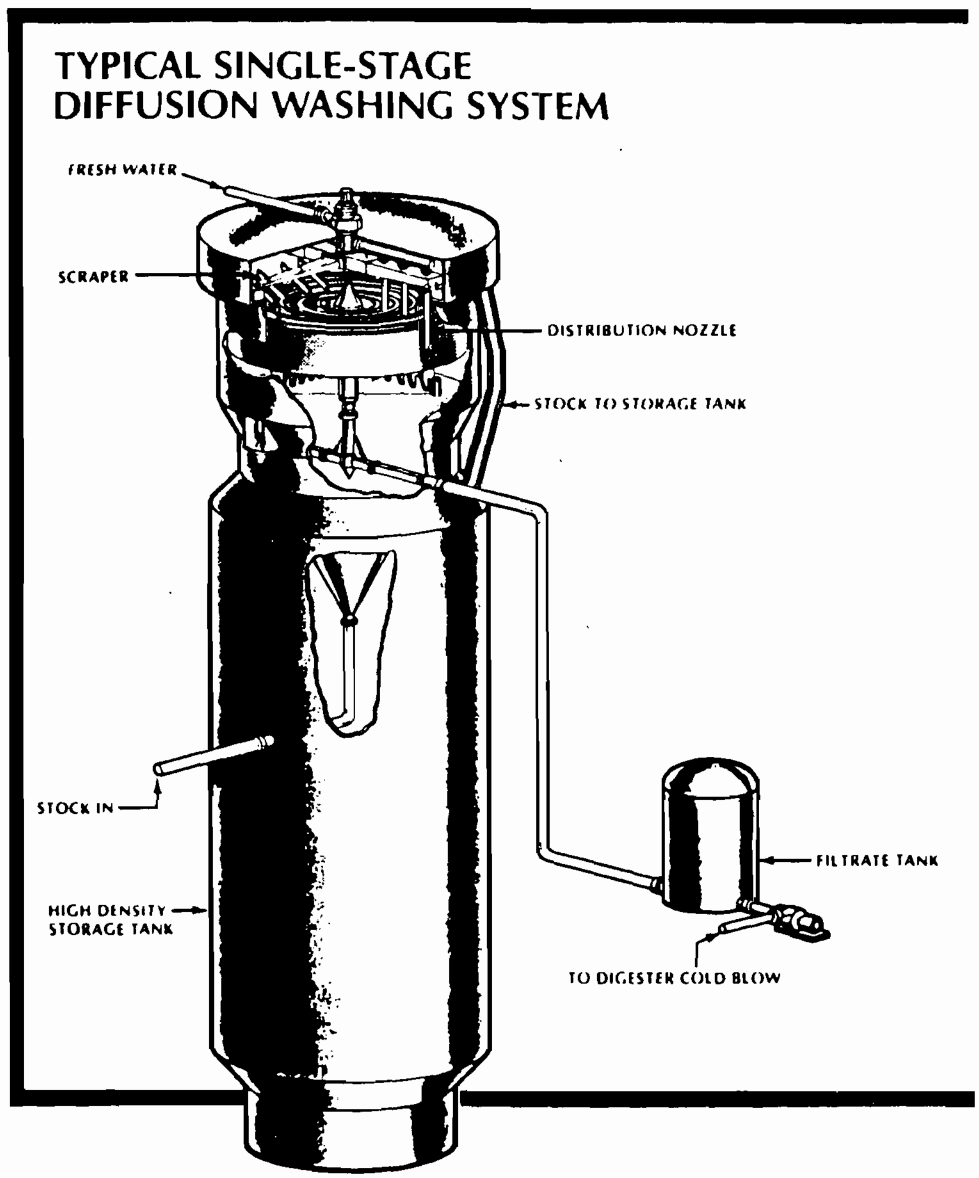

FIGURE 1 SINGLE STAGE DIFFUSION WASHER - VENT NOT SHOWN

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

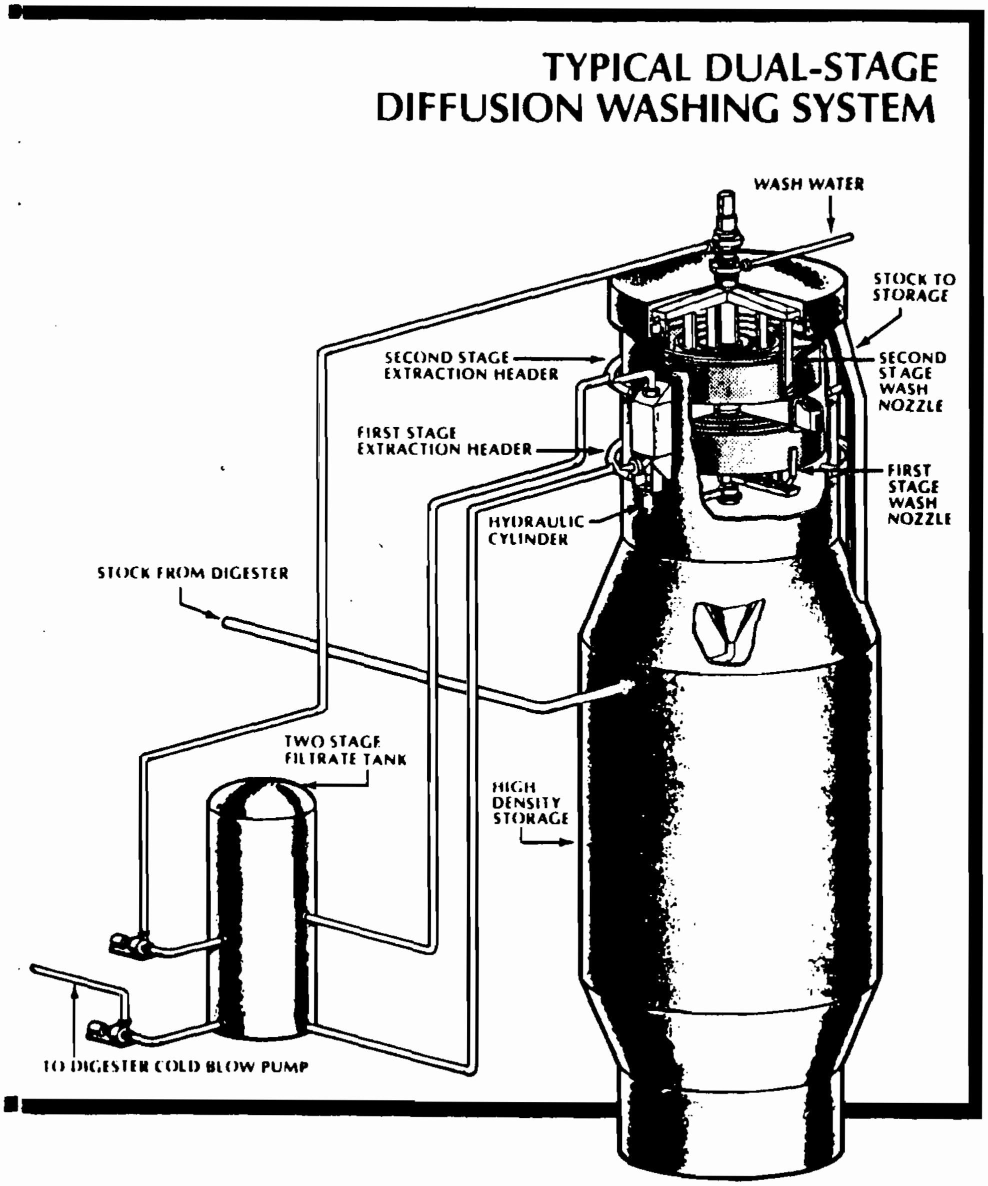

FIGURE 2 DUAL STAGE DIFFUSION WASHER - VENT NOT SHOWN

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

several rings of screen plates, is simultaneously interconnected and supported by radial drainage arms. [Refer to Figure 3]

Displaced liquor, collected through the screen rings, flows into the drainage channel, then into the radial drainage arms and from there it is directed into the collecting headers outside the tower shell. It then flows into a small sized filtrate tank.

During the operation the whole diffuser screen assembly is moving up and down in the pulp. Automatically operated hydraulic cylinders lift the screen assembly at a speed

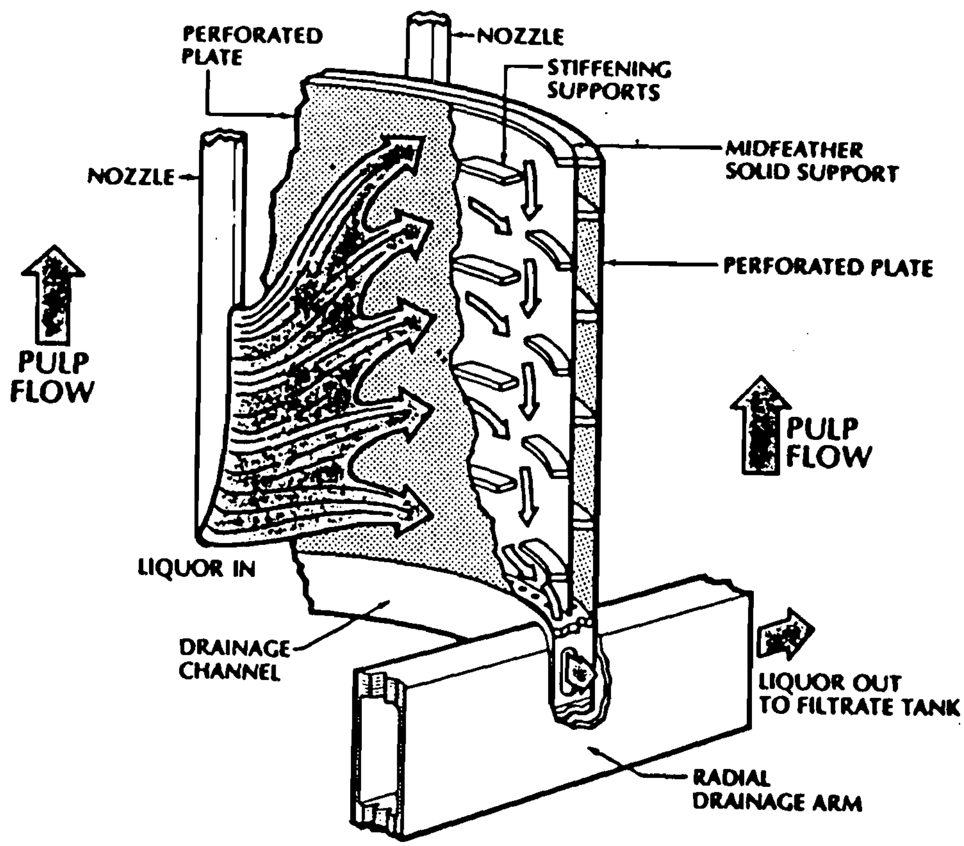

FIGURE 3 CROSS SECTION OF A TYPICAL SCREEN RING

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

which slightly exceeds the upward velocity of the pulp through the tower. At the end of the lift, the screen assembly is moved rapidly downwards. This latter movement between the screen unit and the pulp keeps the plate perforations wiped free of fibers. This cycle is continually repeated, with the upstroke duration of approximately one minute for the lift and less than one second for the downstroke.

The washing medium is introduced into the pulp through rotating distribution nozzles. The nozzles rotate at approximately 7.5 RPM. Passing between the screen rings, the discharge from the nozzles leaves a path of washing medium in the pulp. The wash liquid then rapidly displaces the liquor in the pulp both outwardly and inwardly to the nearest screen ring.

A feature of diffusion washing is that the pulp remains at the same consistency throughout the washing process, approximately 10%.

The washed pulp is discharged at the top of the diffuser tank by means of a scraper which moves the pulp horizontally to a pulp collection launder ring.

The discharged pulp travels from the diffusion washer either to a high density storage chest, or to a refiner, followed by storage.

(2) Diffusion Washer Vents - Although not indicated in Figures 1 and 2, the covers of all of the diffusion washers examined by NCASI staff (9 washers), and, to the knowledge of NCASI staff, the covers of all diffusion washers, contain a vent pipe which communicates directly to the atmosphere (discounting those that are vented to incineration systems). The purpose of this vent is to permit exchange of air when the washer is being filled or emptied, e.g., for maintenance (the washer normally operates at a fixed upper liquid/stock level, i.e., the level of the launder), or to permit air exchange during minor level changes within the washer. It is emission of reduced sulfur gases from this vent which is the concern of this report.

Also not indicated in Figures 1 or 2 is the vent pipe on the filtrate tank. Again, this vent pipe permits tank breathing during internal filtrate level changes. Gas flow rates and TRS concentrations from several filtrate tank vents were measured during the course of this study.

B. TRS Emissions from Drum Washer Systems - Summary of Existing Data

Results of NCASI (2) and NCASI/EPA (3) studies of reduced sulfur emissions from conventional rotary vacuum drum washer vents were reported in 1972 and 1974, respectively. The sulfur gas emissions were found primarily to consist of dimethyl sulfide and dimethyl disulfide. Thirty washer roof vents were sampled, and TRS emissions were found to range from 0.01 to 0.6 lb TRS/ton air dried pulp (lbs/TADP), with a median of 0.05 and a mean of 0.1 lb/TADP. The source of the wash water was shown to have a significant effect on TRS emissions: on 14 systems using fresh water, the median emission was 0.04 lb/TADP; on 5 systems using condensate, the median TRS emission rate was 0.35 lb/TADP.

Because conventional vacuum drum stock washing systems require that wash liquor (and thus air) be pulled through the drums via vacuum, emissions from vacuum pump exhausts, termed undervent emissions, were examined in the studies reported in references (2) and (3). Results of measurements on 32 undervent systems showed exhaust emissions ranging from 0.01 to 0.63 lb/TADP, with median and mean values of 0.11 and 0.16 lb/TADP, respectively. Continuous brownstock diffusion washer systems do not pull air across the pulp during washing, and there are no equivalent undervent emissions.

C. TRS Emissions from Continuous Diffusion Washer Systems - Summary of Prior (Unpublished) Data

Although no reports on TRS emissions from continuous brownstock diffusion washer vents have appeared in the literature, several individual companies have made data available to NCASI, and Kamyr, Inc. has supplied to NCASI some older data. The most pertinent of these data are reported in Table 1. It should be emphasized that the degree of confidence which may be placed in all of the data of Table 1 is not known, as gas flow and TRS measurement methods employed are not known for most data entries. Important from these data are two observations: (a) TRS emissions exceeded 5 ppm in three out of four cases, and (b) the mass contribution from these sources is very low, in all instances <0.005 lb TRS/TADP. This latter observation may be compared to (a) the total mill mass emissions permitted under NSPS, which, if summed for all sources, is approximately 0.25 lb/TADP, exclusive of the smelt dissolving tank; and (b) the mean mass contribution observed from conventional washer systems (roof vents only) of 0.1 lb/TADP.

III MEASUREMENT METHODOLOGY

A. Introduction

The procedures employed in the NCASI measurement of TRS concentrations and gas flow at nine diffusion washer vents and

TABLE 1 CONTINUOUS KRAFT BROWNSTOCK DIFFUSION WASHER TRS EMISSIONS: DATA REPORTED TO NCASI BY VARIED SOURCES

INFORMATION SOURCE	IDENTIFICATION	SALT CAKE LOSS, lb Na_2SO_4/TADP	TRS, ppm	TRS, lb/ADTP
Kamyr	1st Stage Washer After Cont. Digester	120	226	0.0045
Kamyr	2nd Stage Washer After Cont. Digester	ca. 35 to 60	23	0.002
Kamyr	"Last" Stage Washer	ca. 15 to 25	1.2	1×10^{-6}
Mill Data	Two-Stage Washing After Cont. Digester	ca. 35 to 40	1 to 24	$<8 \times 10^{-4}$

filtrate tank vents are discussed in this section. The TRS measurement procedures were standard; the gas flow measurement procedure required a modification of conventional equipment due to the peculiarities of the source being measured.

B. Gas Velocity Measurement

The following characteristics of the diffusion washer vents and gas emissions are important relative to velocity/flow measurement:

(1) The vent typically is constructed of 18 in. o.d. circular fiber glass pipe, 4 to 6 ft. in height, with an upper right angle bend and an upper horizontal run of 12 to 24 inches. There is one vent per washer.

(2) There is no mechanical evacuation through the diffusion washer vent. What gas flows out of the vent does so due to level changes within the washer, or due to temperature differences (resulting in relief of internal gas expansion) between the washer and the atmosphere. This gas is thus of a low outward velocity.

(3) The exit gas is saturated with water (e.g., 150°F) and due to cooling along many of the vents, condensed water is present in many of the vent emissions.

(4) The vent is fixed to a hinged cover which fits over the top of the diffusion washer. Back pressure applied to the vent gas may result in an increase in fugitive emissions from between the top of the washer and the lip of the cover.

These characteristics narrow the choice of velocity/flow measurement techniques: item (4) rules out the use of a large plastic bag for total flow collection (this was tried, however); item (3) makes the use of a hot-wire anemometer difficult; the low velocity (2) rules out a conventional pitot tube.

Council staff chose to use a swinging vane anemometer for gas velocity measurement. An Alnor Series 6000P Velometer (Alnor Instrument Company, Niles, Illinois) was modified as follows: ca. 5 ft. x 3/8 in. i.d. tubing was installed to connect the Model 6060P probe to the anemometer body. A ca. 3/8 in. hole was drilled in the housing of the anemometer body, and an air-tight fitting was installed to permit measurement of gas temperature in the anemometer body with a small mercury thermometer. The connecting tubing was slightly longer than standard, and this permitted gas temperatures to cool to ambient levels during passage of the gas through the anemometer body. Water droplets were also removed in the tubing. The gas temperature in the anemometer body was employed for corrections to standard conditions.

The Velometer so-modified was calibrated employing a thin plate orifice in a wind tunnel at the University of Florida's Department of Environmental Engineering Sciences in Gainesville.

During field measurements of vent velocity, the 12 in. Velometer probe was employed for traverses at the vent exit, rather than in a port in the vent, which would have had to have been installed for this purpose. Although this approach produces an approximation of velocity, it will be seen that the velocities at all installations except one were at or near the limit of detection of the Velometer, such that this approximation is not of consequence.

The Velometer was calibrated in several ranges of velocity, and used in most cases in its most sensitive configuration, which utilized a readout scale graduated from 0 to 300 feet per minute. A conservative estimate of the limit of detection of the Velometer was made as 50 feet per minute.

As the field measurement data are presented, it will be seen that the "<50 ft/min" velocity, translated in an 18 inch vent to "<88 ft^3/min," appears frequently. Considerable effort could have been expended in obtaining more accurate flow measurement data. In fact, however, this is not an issue. The only purpose of the velocity/flow data is to calculate TRS mass emissions: these are extremely low, even with the conservative (high) flow rates, as will be shown.

C. On-Site Coulometric Titration TRS Measurements

(1) Sample Collection - Grab samples of diffusion washer (and other) vent emissions were taken for all data collection reported here. A ¼ in. o.d. 316 stainless steel tube was placed into the vent to a depth of ca. four ft., and sample was drawn through a total of ca. 6 ft. of ¼ in. o.d. FEP tubing into a 1-L glass impinger containing ca. 500 mL of pH 5.6 citrate buffer (reference (4), Appendix D). A second, identical empty impinger was in-line for carryover moisture removal. The sample then travelled through a 316 stainless steel needle valve and a Teflon-diaphragm sampling pump (Air Dimensions, Inc., Model 19310T, Lansdale, Pennsylvania), then via ca. 3 ft. of ¼ in. o.d. FEP tubing into a ca. 30 L (24 in. x 24 in.) Tedlar gas sampling bag with Teflon inlet tubulature (Pollution Measurement Corporation, Oak Park, Illinois). Sampling at a flow rate of ca. 1 L/minute, ca. 10 minute sampling times were employed. The validity of collecting bag samples from non-combustion sources for later analysis for TRS is presented in NCASI Air Quality Improvement Technical Bulletin No. 97 (5). Nonetheless, samples were analyzed promptly using on-site combustion/coulometric titration analysis equipment. A vent analysis consisted of the collection of from one to six bags over a period of several hours, and analysis of the contents of each bag.

(2) Sample Analysis - The TRS analysis system consisted of a quartz combustion tube in a clamshell furnace heated to ca. 1700°F for TRS to SO_2 conversion, a Masterflex pump, a Barton coulometric titrator, and a rotameter. This is standard equipment for TRS measurement, and it is described in several references, e.g., (4).

D. Off-Site Gas Chromatographic TRS Measurement

In several of the field studies, Tedlar bag samples collected as discussed above were returned to the NCASI laboratory in Gainesville for later (24 to 72 hours after collection) analysis by gas chromatography. The primary purpose of this activity was to determine TRS species, rather than concentration. The gas chromatographic system with flame photometric detection employed in this work is described in reference (6), Appendix C.

E. TRS Gas Calibration

The gas chromatograph and the combustion/coulometric titration system were calibrated in the laboratory employing test gases generated from permeation tubes which were weighed in the NCASI laboratory, with the resulting weight loss data used to calculate permeation rates (as opposed to use of a manufacturer's stated permeation rate). The construction and use of permeation tube-based systems for instrument calibration with sulfur dioxide, hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide are discussed in several NCASI references, e.g., (4, 7).

Field calibration was also necessary for the on-site TRS analysis equipment. For this purpose, a commercially prepared compressed gas mixture of sulfur dioxide in nitrogen (Airco Products, Jacksonville, Florida) at a stated concentration of 9.2 ppm was analyzed with the SO_2-permeation tube-calibrated gas chromatograph, and found to be within 5 percent of the stated value. This cylinder was taken into the field and employed for on-site equipment calibration at studies at eight of nine diffusion washers. At the ninth washer, test gas from a cylinder containing 25.5 ppm hydrogen sulfide in nitrogen (Airco, similarly checked) was diluted with oxygen and employed to calibrate the complete combustion tube/coulometric titration system. (This complete system calibration check was also conducted in the laboratory prior to field use of the on-site analysis equipment.)

A calibration gas analysis was carried out before and after each TRS measurement in the field.

IV FIELD MEASUREMENT RESULTS

A. Site Identification

Vent analyses at nine separate continuous brownstock diffusion washers were conducted by NCASI staff during this investigation. Because relative to conventional brownstock washing systems, the number of diffusion washing systems is small, it is not difficult for persons familiar with the industry to determine the site of a given diffusion washer from even a brief description of the kraft mill at which it is installed. In order to secure the identity of the facilities at which these field measurements were made, only information necessary to describe features important to diffusion washer emissions is provided.

B. Diffusion Washer Vent Measurement Results

(1) Washer A - Results of measurements at Washer A are presented in Table 2. Washer A was the only washer at which positive flow from the diffusion washer vent was observed for a significant fraction (40 sec/72 sec) of the washer cycle. Discussions with Kamyr representatives relative to this matter concerned their observation that a "spongy" pulp with entrained air will react to the screen stroking in such a way as to show a "piston effect" (not necessarily completely in phase with the screen stroking) resulting in positive "puffs" out of the washer vent. Whether this was the cause of Washer A's vent flow, and why the pulp at only Washer A was spongy, was not determined.

Washer A was the only facility at which positive flow out of the vent occurred for a long enough time for gas sample collection to be made during this positive flow only. The 752 dry standard cubic feet per minute (DSCFM) observed as an approximate average flow during the positive puffs is weighted by a factor of 40/72 in the mass emission entry in Table 2. (In spite of Washer A's having the highest measured gas flow, mass emissions were only 0.001 lb/ADTP.)

Six separate bag samples of emissions from Washer A's vent were taken over the course of ca. 3 hours. The average ±2 standard deviation of the results of the analyses of these bags was 12.7 ± 4.8 ppm.

Gas chromatographic analyses of two bag samples performed 24 hours after vent sampling showed average concentrations as follows:

H_2S = 0.8 ppm
MeSH = not detected
Me_2S = 8.5 ppm
Me_2S_2 = 0.8 ppm

TABLE 2 RESULTS OF FIELD MEASUREMENTS OF CONTINUOUS BROWNSTOCK DIFFUSION WASHER VENT TRS CONCENTRATIONS AND GAS FLOWS

	WASHER A	WASHER B
Diffuser Description	1125 TPD 2-stage 6 ring, 20 ft. diam.	760 TPD 2-stage 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	13 (1.4×10^{-3}) [+ puffs only] (Me_2S)	3 ($<1 \times 10^{-4}$) [total] (Me_2S)
Vent Flow Rate, DSCFM	418 (time weighted)	<88
Wash Liquor Temp., °F	160	140-150 nominal
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. - Flow Δ Wash Liquor Top Stroke? -	 59 11 1 No	 75 10 0.8 No
Salt Cake Loss lb/ADTP, as Na_2SO_4	Not Measured	69
Source of Upper Stage Wash Liquor	Stripped & Cleaned Evap. Cond. ↓ Post-Diff. Sys. Washer Filtrate ↓ 2nd Stage Diff. Washer	Stripped & Cleaned Evap. Cond. ↓ Decker ↓ 2nd Stage Diff. Washer
Cooking Liquor Sulfidity	29 percent (C-test)	24.7 percent (active)
Hardwood/Softwood	10 percent/90 percent	Softwood

TABLE 2 (Continued)

	WASHER C	WASHER D
Diffuser Description	355 TPD 2-stage (modified) (o ring, 20 ft. diam.	590 TPD 2-stage (modified) 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) **[Sample Collection]** **(Major Component)**	20 (<1.2 x 10^{-3}) [total] (Assume Me_2S)	30 (<9.7 x 10^{-4}) [total] (MeSH)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 180	ca. 180
Washer Cycle		
Upstroke, sec. -		
Top, sec. -	total 88 sec.	total 70 sec.
Downstroke, sec. -		
Flow Δ Wash Liquor Top Stroke? -	Yes, dec. flow	Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	63	48
Source of Upper Stage Wash Liquor	Stripped Condensate	Stripped Condensate
Cooking Liquor Sulfidity	27-30 percent	28 percent
Hardwood/Softwood	Hardwood	Hardwood

TABLE 2 (Continued)

	WASHER E	WASHER F
Diffuser Description	532 TPD 2-stage (modified) 6 ring, 20 ft. diam.	532 TPD 2-stage (modified) 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) **[Sample Collection]** **(Major Component)**	18 ($<7.5 \times 10^{-4}$) [total] (Assume Me_2S)	30 ($<1.3 \times 10^{-3}$) [total] (Assume Me_2S)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 150	ca. 180
Washer Cycle **Upstroke, sec. -** **Top, sec. -** **Downstroke, sec. -** **Flow Δ Wash Liquor Top Stroke? -**	total 90 sec. Yes, dec. flow	total 93 sec. Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	73	76
Source of Upper Stage Wash Liquor	Linerboard White Water	Stripped Condensate
Cooking Liquor Sulfidity	28-29 percent	26-30 percent
Hardwood/Softwood	Softwood	Softwood

TABLE 2 (Continued)

	WASHER G	WASHER H
Diffuser Description	185 TPD 2-stage (modified) 6 ring, 14 ft. diam.	1300 TPD 2-stage, same filtrate both stages
Vent TRS, ppm (lb/ADTP) **[Sample Collection]** **(Major Component)**	22 ($<2.8 \times 10^{-3}$) [total] (Assume Me_2S)	5.9 ($<1 \times 10^{-4}$) [total] (Me_2S)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 180	130-140
Washer Cycle **Upstroke, sec. -** **Top, sec. -** **Downstroke, sec. -** **Flow Δ Wash Liquor Top Stroke? -**	total 81 sec. Yes, dec. flow	total = 66 top = 11 Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	72	35
Source of Upper Stage Wash Liquor	Stripped Condensate	Decker Filtrate
Cooking Liquor Sulfidity	Target 28 percent	25 (active alkali)
Hardwood/Softwood	Softwood	Softwood

TABLE 2 (Continued)

	WASHER J
Diffuser Description	450 TPD 3-stage 5 ring, 18 ft. diam.
Vent TRS, ppm (lb/ADTP) **[Sample Collection]** **(Major Component)**	6.4 (<2 x 10^{-4}) [total] (Assume Me_2S)
Vent Flow Rate, DSCFM	<74
Wash Liquor Temp., °F	150
Washer Cycle **Upstroke, sec. -** **Top, sec. -** **Downstroke, sec. -** **Flow Δ Wash Liquor Top Stroke? -**	 45 5 0.3 No
Salt Cake Loss lb/ADTP, as Na_2SO_4	30-35
Source of Upper Stage Wash Liquor	Fresh hot water
Cooking Liquor Sulfidity	23-26 percent (active alkali)
Hardwood/Softwood	Softwood

(2) Washer B - Results of measurements at Washer B are presented in Table 2. All diffusion washer vent gas flows were less than detectable, translating to less than 88 DSCFM, as discussed in III-B, above. Gas chromatographic analysis of one vent sample bag 24 hours after sample collection showed 3.2 ppm Me_2S, with the other sulfur compounds not detected (<0.1 ppm).

(3) Washer C - Results of measurements at Washer C are presented in Table 2. During vent velocity measurement, wind was gusting at 100 to 800 ft/min into the vent, and no gas flow was measured out of the vent. As a consequence, the vent gas flow was described as not detectable, which conservatively translates to <88 ft^3/min, as discussed above.

Gas chromatographic analyses of Washer C vent samples were not carried out. The mass emission rate was calculated assuming dimethyl sulfide to be the only TRS compound of significance.

(4) Washer D - Results of measurements at Washer D are presented in Table 2. There was no detectable gas flow from the vent during 96 percent of the 70 second cycle time. Just before the screens dropped ("banged"), as the washer commenced to "rattle," a ca. 200 ft/min puff was observed for ca. 2 seconds, followed by a ca. 400 ft/min puff for 1 second. Because for the remaining duration of the cycle, vent gas flow was not detectable (<50 ft/min), a weighted average could be applied, so that a "<59 ft/min" factor could be used. This was not done for the calculations presented in Table 2, as it is felt that the <50 ft/min velocity employed in the mass emission rate calculations is amply conservative (high).

Gas chromatographic analysis of a bag sample of Washer D vent emissions ca. 72 hours after sample collection indicated the following:

$$H_2S = 9.2 \text{ ppm}$$
$$MeSH = 15 \text{ ppm}$$
$$Me_2S = 6.5 \text{ ppm}$$
$$Me_2S_2 = 3.6 \text{ ppm}$$

The mean emission rate of $<9.7 \times 10^{-4}$ lb TRS/TADP reported in Table 2 was calculated from these data. Note that if the 38 ppm TRS (as SO_2) were employed in this calculation with the assumption that all of the TRS was dimethyl sulfide (which assumption was made for calculations for vents for which no gas chromatographic data are available), the mass rate would be $<1.2 \times 10^{-3}$ lb/TADP, not a significant difference.

(5) Washer E - Results of measurements at Washer E are indicated in Table 2. Vent flow measurement indicated a ca. 250 ft/min average positive velocity for 5 seconds of the 90 second washer cycle. This is not significant for mass rate emissions calculations, as discussed above, and a figure of <50 ft/min (<88

ft^3/min) was used for estimating mass emissions. Gas chromatographic analyses were not performed for this source.

(6) Washer F - Results of measurements taken at Washer F are summarized in Table 2. Measurement of the vent exit velocity indicated a ca. 100 ft/min puff for ca. 1 sec. duration, otherwise positive flow was not detectable. Gas chromatographic analyses were not performed for this source.

(7) Washer G - Results of measurements taken at Washer G are presented in Table 2. Vent flow measurement indicated no positive velocity above the limit of detection of the velocity measurement equipment. Gas chromatographic analyses were not performed.

(8) Washer H - Results of measurements performed at Washer H are summarized in Table 2. Velocity measurements at this vent showed no detectable gas velocity. A gas chromatographic analysis of one bag sample from this vent ca. 72 hours after collection indicated the following:

$$H_2S = 1.5 \text{ ppm}$$
$$MeSH = 1.1 \text{ ppm}$$
$$Me_2S = 2.0 \text{ ppm}$$
$$Me_2S_2 = \text{not detected}$$

(9) Washer J - Results of measurements performed at Washer J are indicated in Table 2. Velocity at the vent was not detectable, however, a moisture plume was observed originating from a ca. 11 in. x 7 in. port in the washer cover. Velocity measurements here during the washer cycle indicated ca. 400 ft/min for 15 seconds, and <50 ft/min for 45 seconds, indicating a flow rate <74 ft^3/min. (Note that this 60 second cycle period is 10 seconds longer than the washer cycle in operation as indicated by mill personnel.) On-site TRS measurements of three bag samples yielded a mean ±2 standard deviation result of 6.4 ± 1.1 ppm. Gas chromatographic analyses were not performed.

C. Filtrate Tank Vent Measurement Results

Results of on-site analyses of samples collected at four diffusion washer filtrate tanks are summarized in Table 3. The mass emission rates are all less than 0.003 lb TRS/TADP, making this a very minor pulp mill TRS source.

D. Field Measurement Results Interpretation

(1) Background - It was anticipated prior to the field data collection stage of this activity that differences in diffusion washer vent TRS emissions would be observed from washer to washer, and it was desired to collect pertinent operating data in order to be able to relate observed TRS emission magnitudes to general pulp mill and specific washer operating practice. Although these data were collected, it is seen that the variation

TABLE 3 TRS EMISSIONS FROM BROWNSTOCK DIFFUSION WASHER COMBINED FILTRATE TANK VENTS

WASHER SYSTEM (Table 2)	TRS, ppm	MAJOR TRS COMPONENT	VENT FLOW RATE, DSCFM	lb TRS/ ADTP	VENTED TO
A	45	Me_2S	330	2.8×10^{-3}	Vacuum System/ Incineration
B	88	Me_2S	<53	$<1.3 \times 10^{-3}$	Atmosphere
E	14	Assume Me_2S	<53 (estimated)	$<2.1 \times 10^{-4}$	Atmosphere
H	9	Assume Me_2S	<53	$<1.3 \times 10^{-4}$	Atmosphere

in TRS from washer to washer is not great, so that on the basis of these data a given parameter or set of parameters cannot be identified as controlling emissions. The operating data are presented in Table 2, and an explanation of their possible effect on washer TRS emissions follows:

(2) Wash Liquor Temperature - Logically, the higher the temperature of the wash liquor supplied through the nozzles of the washer arms in the upper washer stage, the greater the potential for release in the washer of volatile sulfur compounds from (a) the wash liquor and (b) the liquor which is being displaced. It is seen from Table 2 that these temperatures (mill-supplied data) ranged from 135 to 180°F. Simple linear regression of the temperature versus TRS data gives an equation with a correlation coefficient $r^2 = 0.70$. Although it is tempting to speculate that temperature is a controlling factor, logic dictates that it should be only one of several important factors. Also, the appropriate way to study the wash liquor temperature effect is to make a number of temperature versus TRS measurements at one washer. This was not possible in this first data collection activity.

(3) Washer Cycle Parameters - Upon observing the significant positive puffs of gas from the vent at washer A, an attempt was made to relate washer operation to this phenomenon, which was not observed at the eight other washers. It was felt that some difference in screen movement times, or the change in the flow of wash liquor as the screen reaches and remains at the top of its stroke (for backflushing), could be related to the puffing effect at washer A versus the other washers. No such relationship is apparent from the data of Table 2.

(4) Salt Cake Loss - When one focuses upon (a) the upper stage of a diffusion washer as the source of vent TRS emissions, and (b) the sulfur compound content of the liquor in that upper stage as being important to TRS emissions, and if one neglects for this consideration the contribution of sulfur compounds by the upper stage wash liquor, then, logically, the "cleaner" the pulp slurry in the upper stage, i.e., the greater the degree to which it has been washed by the time it reaches the upper portion of the upper washing stage, the lower the potential for TRS emissions from the washer vent. A measure of the degree to which the pulp has been washed is salt cake loss, expressed, e.g., as pounds of sodium sulfate per ton of air dried pulp. The higher the salt cake loss number the greater the amount of cooking liquor carried out of the washer in the pulp slurry, hence the greater the potential concentration of sulfur compounds in the upper portion of the washer.

The salt cake loss data of Table 2 do not show a significant correlation with vent TRS concentration. The lower salt cake loss washers, however, H and J, showing 30 to 35 lb/TADP, do show the second lowest emissions, 6 ppm.

(5) Source of Upper Stage Wash Liquor - As indicated in section II-B, above, the source of wash liquor was shown to have a significant effect on TRS emissions from conventional vacuum drum type brownstock washer systems. It was suspected that this might also be the case for diffusion washers, hence information on the source of the wash liquor employed for upper stage washing was collected, and is presented in Table 2.

One pair of entries in Table 2 provides interesting information on this point. Washers E and F are at the same mill, nearly identical in size and operation, but washer E at 18 ppm TRS employs linerboard white water for upper stage washing, while washer F at 30 ppm TRS employs stripped condensate. Washer F's wash liquor is also at a higher temperature (180 versus 150°F), which makes interpretation of the observation difficult.

All of the washers (four) with TRS emissions above 20 ppm employed stripped condensate for upper stage washing. Of the washers (five) with TRS emissions below 20 ppm, only two employed stripped condensate. The lack of information on the volatile sulfur compound content of these wash liquors makes interpretation of this observation difficult also.

(6) Other Parameters - It was anticipated that cooking liquor sulfidity and wood species pulped might have an effect on washer vent TRS emissions or sulfur gas species. This information is presented in Table 2, but no conclusions relative thereto are apparent.

V SUMMARY AND CONCLUSIONS

The following points summarize results of measurements made at nine continuous kraft process brownstock diffusion washers:

(1) Gas flow rates at eight of nine diffusion washer vents examined were very low, less than the limit of detection of the swinging vane anemometer employed in this work. A conservative (high) limit of detection for this instrument was estimated at 50 ft/min, which results in a typical diffusion washer vent gas flow rate of less than 90 ft^3/min.

(2) Total reduced sulfur gas emissions ranged from 3 to 38 parts per million with a median of 18 and a mean of 17 parts per million.

(3) Mass emission rates could only be presented as maximum possible values, due to the necessity of describing gas flows in "less than" terms. On this basis, vent emission rates ranged from less than 1×10^{-4} to less than 2.8×10^{-3} pounds total reduced sulfur per air dried ton of pulp, with a median of less than 9.7×10^{-4} and a mean of less than 9.8×10^{-4} pounds total reduced sulfur per air dried ton of pulp.

(4) Comparison of the mean mass emission rate for diffusion washer vents (<0.001 lb/TADP) with that determined for conventional drum washer vents (0.1 lb/TADP, reference (3)) indicates the former to be a much less significant source of reduced sulfur gases.

(5) Trends were noted relative to the possible influence of wash liquor source and temperature, and salt cake loss, on washer vent TRS emissions. Data collection to quantify these influences has not been undertaken.

VI LITERATURE REFERENCES

(1) "Kamyr Diffusion Washers and Displacement Bleaching Systems: Installations and Applications," Bulletin No. 500-A, Kamyr, Inc., Ridge Center, Glens Falls, New York 12801, June 30, 1981.

(2) "Factors Affecting Emission of Odorous Reduced Sulfur Compounds from Miscellaneous Kraft Process Sources," NCASI Air Quality Improvement Technical Bulletin No. 60, March, 1972.

(3) "Atmospheric Emissions from the Pulp and Paper Manufacturing Industry - Report of NCASI-EPA Cooperative Study Project," NCASI Air Quality Improvement Technical Bulletin No. 69, February, 1974.

(4) "A Guide to the Design, Maintenance, and Operation of TRS Monitoring Systems," NCASI Air Quality Improvement Technical Bulletin No. 89, September, 1977.

(5) "A Study of the Use of Bag Sampling in Determining TRS Emissions from Kraft Pulping Sources," NCASI Air Quality Improvement Technical Bulletin No. 97, September, 1978.

(6) "Laboratory and Field Examination of Several Alarm-Type H_2S Area and Personal Monitors for Use in the Kraft Pulp Mill Workplace Environment," NCASI Technical Bulletin No. 393, February, 1983.

(7) "A Laboratory and Field Study of Reduced Sulfur Sampling and Monitoring Systems," NCASI Air Quality Improvement Technical Bulletin No. 81, October, 1975.

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Champion
Champion International Corporation

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April 17, 1989

Mr. Michael D. Harley, Engineer
Bureau of Air Quality Management
State of Florida
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

RE: DER File No. AC 17-142004

Dear Mr. Harley:

Attached for your review are Champion's comments on the NCG Construction Permit Application and DER's Draft Permit, AC 17-142004. These comments should address the concerns both of the department and Champion. The two (2) significant issues addressed are the operation rates in Specific Condition 2, and the treatment of Vents I and II from the Kamyr diffusion washer. Champion is requesting that these vents not be treated for the reasons discussed in the attached comments. Champion is also submitting alternate language for Specific Condition 2 and 3 which we believe is more in line with the agreement reached between the industry and the department.

If you or your staff have any questions concerning these comments, please call. I will call on Friday, April 21, 1989, to discuss the status.

Sincerely,

David T. Arceneaux (sc)

David T. Arceneaux
Supervisor
Environmental Control

DTA/sc

Attachments

cc: Ed Middleswart, DER
copied: M. Harley
CHF/BT

Comments on DER Permit, AC 17-142004

OPERATION RATES

The operation rates identified in Specific Condition 2 are generally the design maximum rates for each source. Champion's concern is the establishment of an operation rate permit limit independent of emission and inconsistent with regulations. The establishment of any permit limit is viewed by Champion to be a significant event requiring adherence to that value. The necessary monitoring and review required, as well as tracking compliance imposes a significant work load. Where these limits are necessary to protect the environment, Champion believes them to be important and a proper condition in a permit. However, where a limit is not necessary, then the establishment of a production limit imposes unnecessary monitoring and tracking burden.

The specific concerns in Specific Condition 2 relate to the establishment of production rates independent of emissions. It is this reason that the production rates should be stated as to their intended purposes, and only be actual limits where there is a direct impact on emissions. In addition, the establishment of production rates for non-production equipment (i.e., pollution control equipment) is unnecessary and counter-productive. The condensate stripper is designed to remove odor gases from condensate before reuse. The stripper is an integral part of the Kamyr digester and uses the contaminated flash steam from the Kamyr to strip contaminated condensate from several sources. However, there is not a measurable production value associated with the stripper.

With the above comments in mind, Champion would like to propose the following language for Condition 2.

SPECIFIC CONDITIONS:

2. The following are the maximum operation rates for each of the permitted sources for the indicated purposes. These operation rates shall be monitored and recorded.

   a. For testing purposes and NSPS applicability purposes, the maximum production rate of the batch digester system shall be 45 tons of air dry unbleached pulp (TADUP)/hr. and 864 TADUP/day.

Tests for compliance shall be conducted with the lime kiln operating at 90-100% of the maximum lime kiln operating rate and with the batch digester system operating as near the maximum production rate as possible, but in no case shall the operation rate of the digesters be less than 85% of the maximum operation rate when testing. For PSD purposes, the maximum operation rate shall be 756 TADUP/day on an annual average. — MONTHLY

Since these are NSPS the underlined portion gave more than probably should

b. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr digester system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average. — MONTHLY

c. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr brown stock diffusion washer system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average. — MONTHLY

The operation rate of this source may be measured following the PSDW so long as factor is linear.

d. The design hydraulic loading of the condensate stripping column is 215,000 pounds/hour (430 gallons/minute) of liquid feed.

e. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 1 multiple effect evaporator system shall be 181,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

f. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 2 multiple effect evaporator system shall be 97,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

g. The maximum operation rate of the lime kiln shall not exceed 14.5 tons per hour of calcium oxide and is based on an input of 48,857 pounds per hour of lime mud feed.

3. The design rate of natural gas firing in the lime kiln is 130,000 dry standard cubic feet (60°F and 14.7 psia) per hour during normal operation including maximum production. The maximum design rate of natural gas firing is 216,000. — No.

DIFFUSION WASHER SYSTEM

Champion is requesting that Vents I and II from the diffusion washer system be emitted to the atmosphere without treatment. When originally permitted in 1979, the BACT review by both DER and EPA resulted in a determination that these vents be emitted untreated. The vents were however, required to be monitored. The company at that time decided that collection and treatment were less expensive then monitoring. Since that determination, EPA NSPS rules have changed and allow for the venting of sources when the total mass TRS is less than 0.01 pounds per ton ADP (Subpart BB, 60.283(a)(1)(vi)) without requiring continuous monitoring. The basis of this exemption was work done by NCASI and reported in Technical Bulletin No. 406 (copy attached). Wrong cite MAY 20, 1986 51 FR 18538-18539

The two (2) vessel Kamyr digester system operating at the Pensacola Mill contained within the system a hi-heat wash zone and cooling zone. Thus, odor gases generated in the digester and released through the normal "blowing" process are collected in the NCG system. Flash steam is collected in flash tanks and used in the condensate stripper. All normal odor gas sources are thus collected and incinerated. Figure 1 shows the entire Kamyr system. The cooled, washed pulp is discharged through the Kamyr outlet device to the diffusion washer. This process is called "low temperature blowing" and is shown on Figure 2. The diffusion washer system takes the partial washed pulp and completes washing before high density storage (Figure 3). The filtrate tank is a two (2) compartment tank which holds filtrate from both extraction stages. The operational function of diffusion washers is explained in detail in the NCASI Bulletin.

The top cover of the diffusion washer contains a vent pipe to permit exchange of air when the washer is being filled or emptied. Normal washer operation is to have fixed liquid/stock level. Thus, the vent is an atmospheric vent with essentially no flow but with a large surface area. It is this feature which makes the vent incompatible with the new NCG collection system.

The existing system is a low concentration, high flow system using fans to transport gases, with dilution from ambient air. The collection of a large surface area with no forced flow is not a problem. The new system however, is a stream-ejector driven high concentration/low flow system. It would be impracticable to collect a large surface area system.

Although this request would allow the venting of existing control sources, the impact on air quality would be negligible. The total mass emissions of TRS gases from these sources is very small (<0.005 pounds/TADP), and would represent <0.7 tons per year at H2S. In comparison, the improved NCG system will collect and incinerate approximately 5% additional TRS gases from the batch digester system. At an estimated generation of 10 pounds of TRS per ton of pulp, this represents approximately 70 tons per year of additionally controlled TRS.

In conclusion, as stated above, the new system is not compatible with collecting diffusion washer vents. These vents were allowed to be vented in the original BACT determination, and current NSPS regulations exempt these vents from control and monitoring.

70 TPY / 4.38 < 16 lb/hr

16 lb/hr / 0.05 = 320 lb/hr

320 lb/hr / 10 lb/TADP = 32 TPH

(32 TPH)(24) = 768 TPD

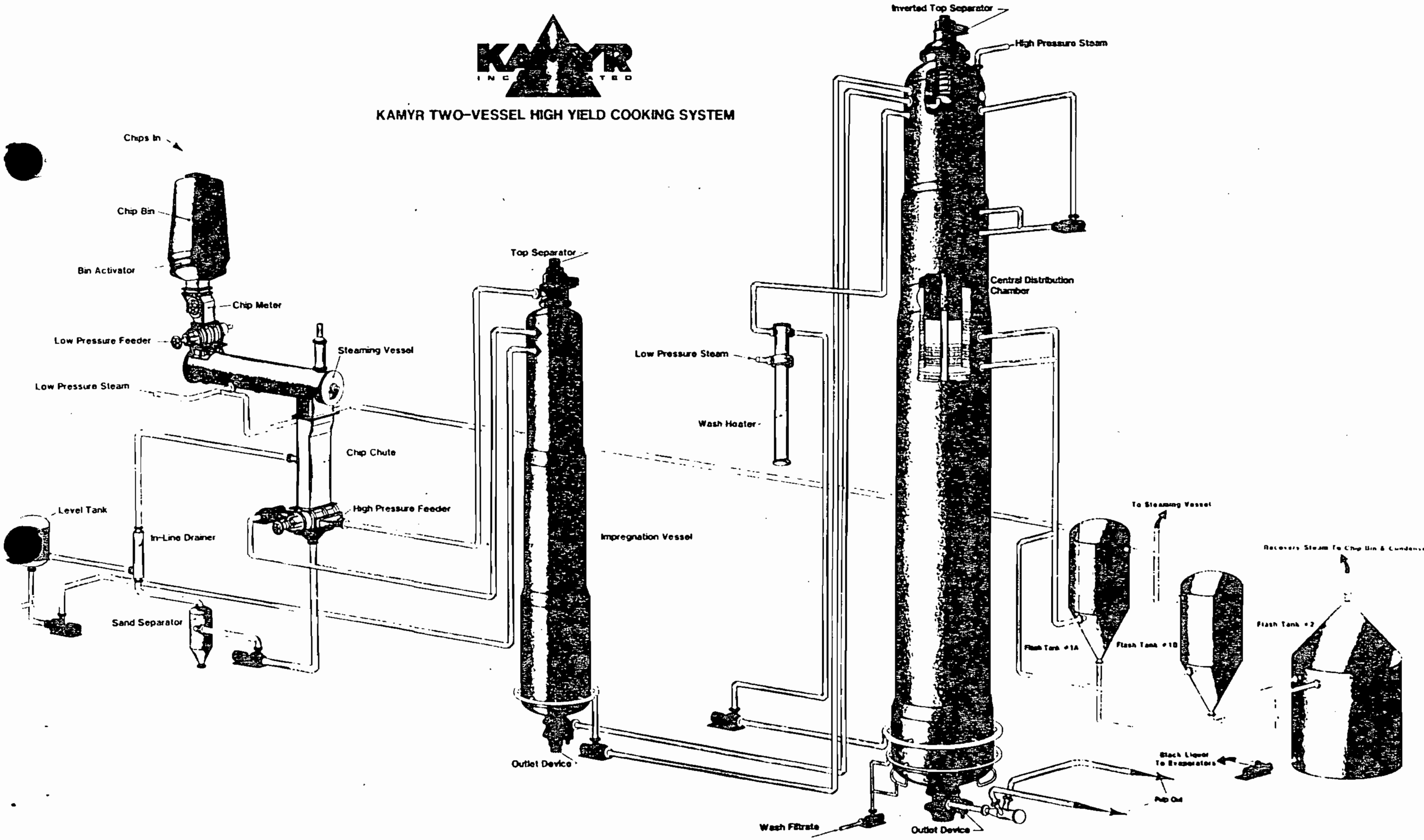
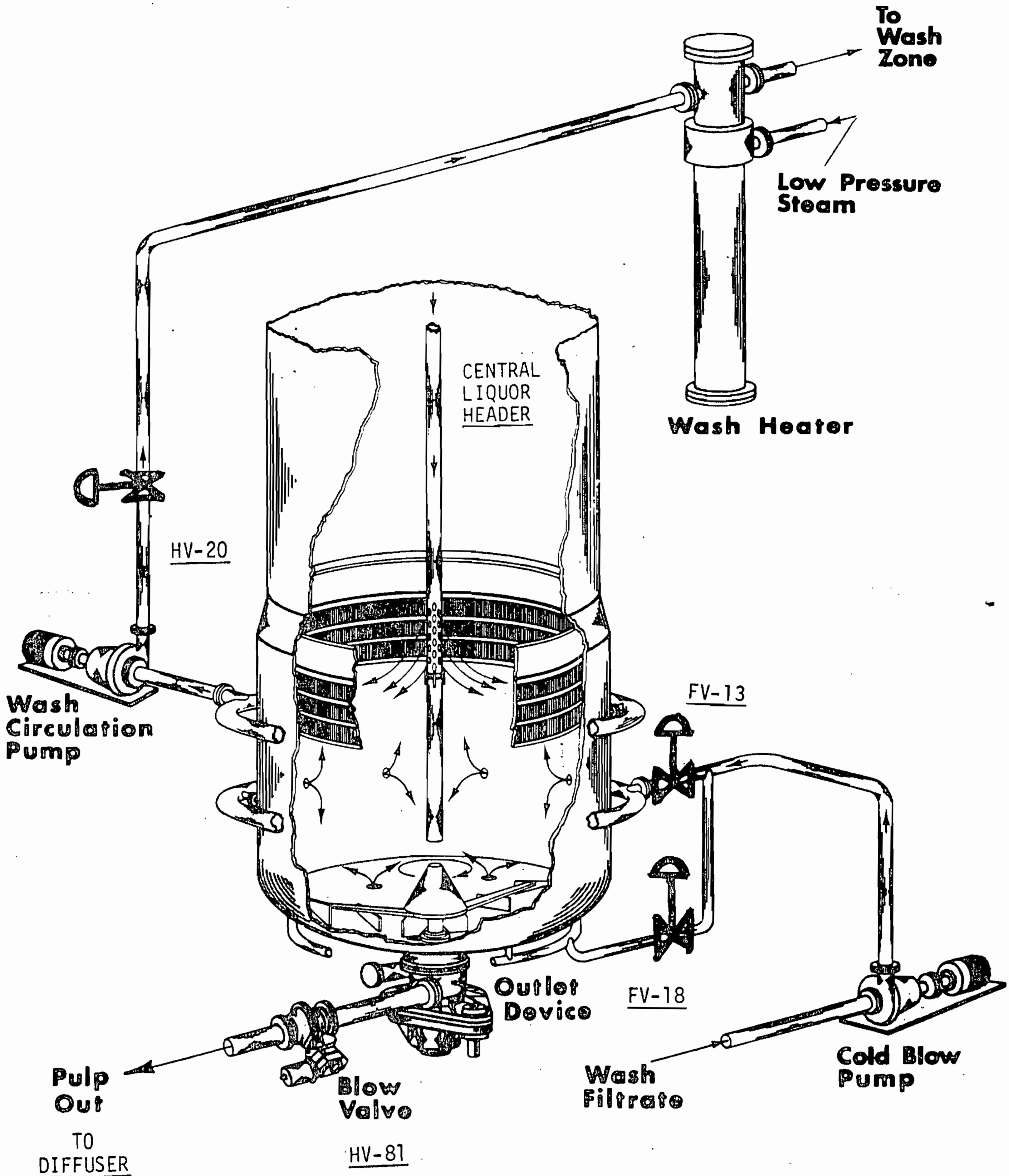

KAMYR INCORPORATED
KAMYR TWO-VESSEL HIGH YIELD COOKING SYSTEM
Chips In
Chip Bin
Bin Activator
Chip Meter
Low Pressure Feeder
Steaming Vessel
Low Pressure Steam
Chip Chute
Level Tank
In-Line Drainer
High Pressure Feeder
Sand Separator
Top Separator
Impregnation Vessel
Outlet Device
Low Pressure Steam
Wash Heater
Inverted Top Separator
High Pressure Steam
Central Distribution Chamber
To Steaming Vessel
Recovery Steam To Chip Bin & Condenser
Flash Tank #1A
Flash Tank #1B
Flash Tank #2
Black Liquor To Evaporators
Pulp Out
Wash Filtrate
Outlet Device

FIGURE 1

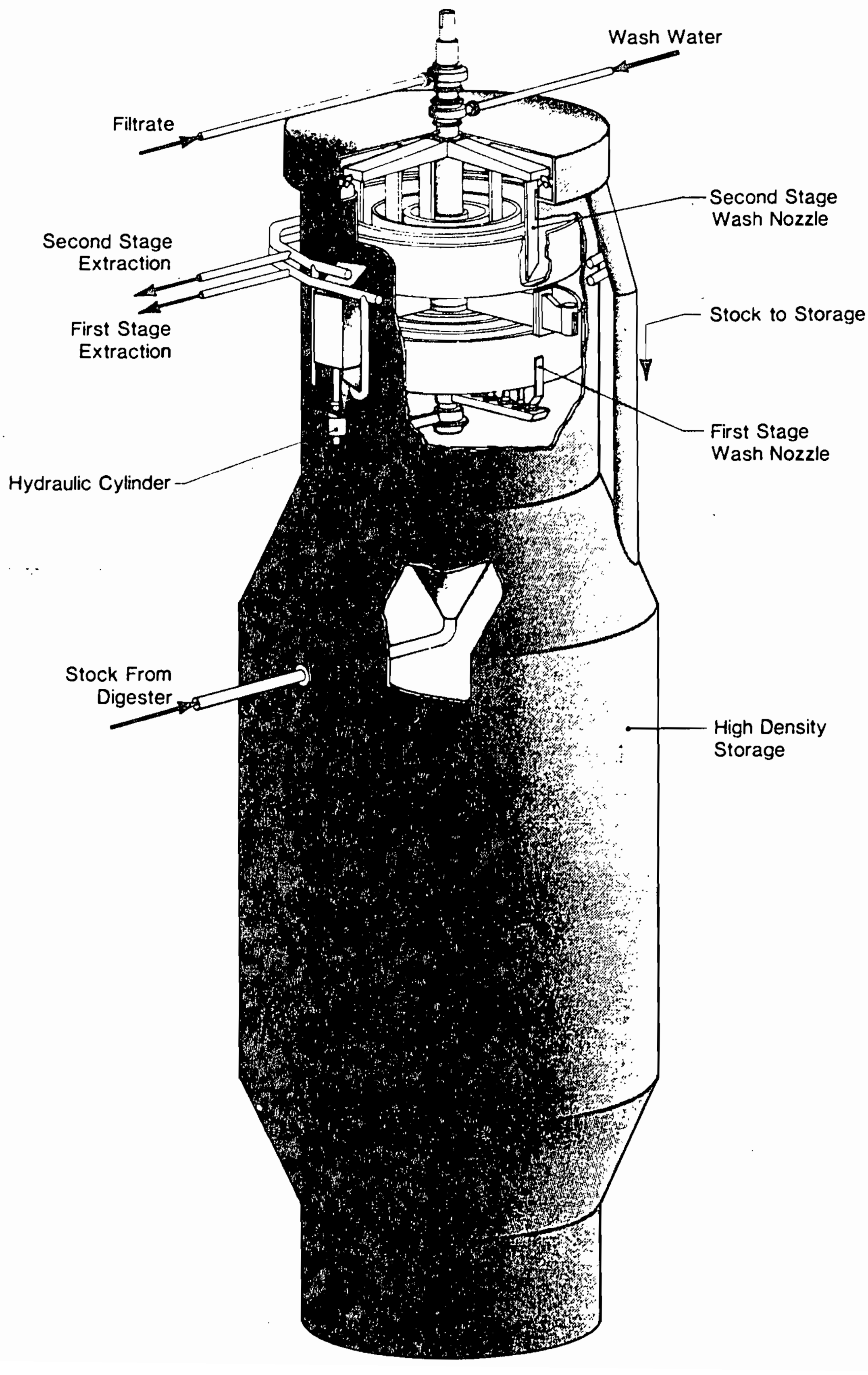
FIGURE 2



LOW TEMPERATURE BLOWING

TWO-STAGE BROWNSTOCK DIFFUS
MOUNTED ON HIGH DENSITY STORA
1-0213-68

FIGURE 3



ncasi technical bulleti

NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC., 260 MADISON AVENUE, NEW YORK, N.Y. 1

EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

TECHNICAL BULLETIN NO. 406

SEPTEMBER 1983

ncasi

NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC.
260 MADISON AVE. NEW YORK, N.Y. 10016 (212) 532-9000

Russell O. Blosser
Technical Director
(212) 532 9001

September 1, 1983

TECHNICAL BULLETIN NO. 406

EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

FDER INTERPRETED REGS ~~[illegible]~~ EFFEC. DATE 9/24/76 AS REQUIRING CONTROL

In the recently distributed Draft Background Information Document and Draft Proposed Emission Standards, which are part of the New Source Performance Standards (NSPS)-mandated review of NSPS for the kraft pulping industry, the United States Environmental Protection Agency (EPA) included a proposal that total reduced sulfur (TRS) emissions from kraft brownstock diffusion washers be subject to control. In considering brownstock diffusion washer control, EPA has assumed that TRS emissions from this source are similar to those from drum washers. The estimates for cost effectiveness include therefore an assumed emission rate, although the estimated volume which might require treatment has been reduced.

The experience of National Council and industry personnel relative to emissions of reduced sulfur compounds from unit operations involving liquid/air contact in which kraft process black liquor is (or is perceived as being) the source of these emissions, is that a number of factors are important to the magnitude of emissions. Unfortunately, very little data on TRS concentrations and gas flows from brownstock diffusion washers had been generated by industry, or by the diffusion washer manufacturer, and none of the data which had been obtained have appeared in the accessible literature. Consequently, the National Council undertook a study to determine the composition and emission rate of reduced sulfur gas emissions from diffusion washer vents.

The attached technical bulletin prepared by Dr. Robert P. Fisher, Investigative Programs Manager, is based on measurements carried out on nine diffusion washer vents in the kraft industry. Dr. Robert P. Fisher, Mr. David C. Roveli-Rikx, Research Engineer, Mr. Charles G. Simon, Research Chemist assisted by Leon J. Larson, and Van H. Dozier, all of the Southern Regional Center, carried out the field studies.

In summary, the study showed gas flow rates from kraft brownstock diffusion washers to be extremely low. Total reduced sulfur concentrations ranged from 3 to 30 ppm with a mean of 17 ppm. The mean mass emission rate of total reduced sulfur from diffusion washers was found to be less than 0.001 lbs/ton pulp compared to a mean of about 0.1 lb/ton pulp from conventional washers. Even though the concentration of total reduced sulfur from brownstock diffusion washers was generally found to be greater than that allowed for new conventional washer sources, diffusion washers were found to be a far less significant source in terms of mass emission rate.

Your comments and questions on the contents of this technical bulletin are solicited and should be directed to me or to Dr. Robert P. Fisher, Investigative Programs Manager, P.O. Box 14483, Gainesville, Florida 32604 (telephone - 904-377-4708).

Yours very truly,

Russell O. Blosser
Technical Director

ROB:mh
Attach.

TABLE OF CONTENTS

EMISSION OF REDUCED SULFUR COMPOUNDS FROM KRAFT PROCESS BROWNSTOCK DIFFUSION WASHER VENTS

I INTRODUCTION

In the recently distributed Draft Background Information Document and Draft Proposed Emission Standards, which are part of the New Source Performance Standards (NSPS)-mandated review of NSPS for the kraft pulping industry, the United States Environmental Protection Agency (EPA) included a proposal that total reduced sulfur (TRS) emissions from brownstock diffusion washers be subject to control. In considering brownstock diffusion washer control, EPA has assumed that TRS emissions from this source are similar to those from drum washers. The estimates for cost effectiveness include therefore an assumed emission rate, although the estimated volume which might require treatment has been reduced.

The experience of National Council and industry personnel relative to emissions of reduced sulfur compounds from unit operations involving liquid/air contact in which kraft process black liquor is (or is perceived as being) the source of these emissions, is that a number of factors, among them the air turbulence/contact which the black liquor encounters, are important to the magnitude of emissions. Because of the significantly lower opportunity for air contact with black liquor in a multi-stage diffusion pulp washer, as opposed to a series of vacuum drum washers, TRS emissions from the vents on diffusion washers would be expected to be significantly lower than those from vacuum drum washers. Unfortunately, very little data on TRS concentrations and gas flows from brownstock diffusion washers have been generated by industry, or by the diffusion washer manufacturer, and none of the data which have been obtained have appeared in the accessible literature. Consequently, the National Council investigation described in this report was undertaken, with the following objectives:

(1) the measurement of gas flow rates from continuous brownstock diffusion washer vents;

(2) the determination of TRS concentrations in diffusion washer vent emissions;

(3) the identification of reduced sulfur species and the determination of individual species concentrations in these emissions;

(4) the correlation of continuous brownstock diffusion washer operating practices with magnitudes of washer vent gas flow rates and TRS concentrations;

(5) the comparison of continuous brownstock diffusion washer vent TRS mass emission rates (new data) with TRS mass emission rates from conventional vacuum drum brownstock washer vents (existing data);

(6) the collection and presentation of TRS mass emission rate data from continuous brownstock diffusion washer filtrate tank vents.

II BACKGROUND

A. Brownstock Washer Systems

(1) Operating Principles of Diffusion Washers - As opposed to conventional systems in which pulp is washed sequentially on rotary drum vacuum filters exposed to the atmosphere, washing in a diffusion washer is an enclosed process not involving air contact. Although the opportunity for oxidation of liquor sulfide is thereby reduced, the potential for the release of volatile organic sulfides from the liquor accompanying the pulp is also reduced.

The following description of the operation of a brownstock diffusion washer is quoted from Kamyr product literature (1), with permission. Figures 1, 2, and 3 are also from this reference.

> High consistency pulp enters the conical bottom of the unit and passes slowly upwards through the first [Figure 1] and second [Figure 2] stage diffusers.
>
> The diffuser performs the function of draining the liquor from the pulp. By means of the distribution nozzles, wash medium equal to the amount extracted is added plus the amount of dilution factor required to accomplish the desired washing.
>
> The liquor withdrawn from the diffuser flows to a small (five minute retention) filtrate tank.
>
> The diffuser assembly is a series of concentric double sided screen rings. Each ring is made of two perforated plates spaced and joined approximately two inches apart. The rings are spaced approximately 20 inches apart. The screen plates are welded together top and bottom to form a hollow shell. The bottom of the shell contains a drainage channel. The screen assembly, made up of

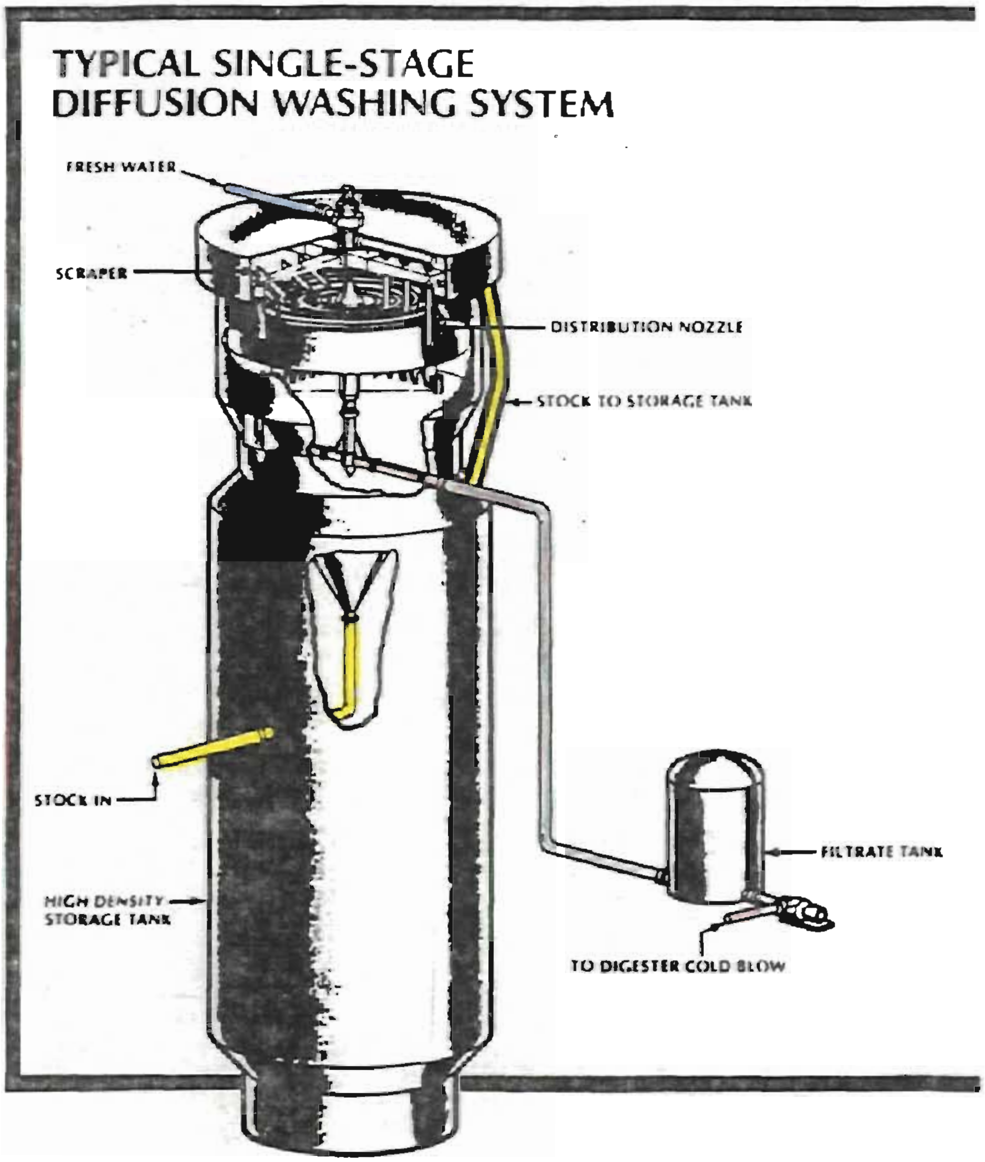


FIGURE 1 SINGLE STAGE DIFFUSION WASHER - VENT NOT SHOWN

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

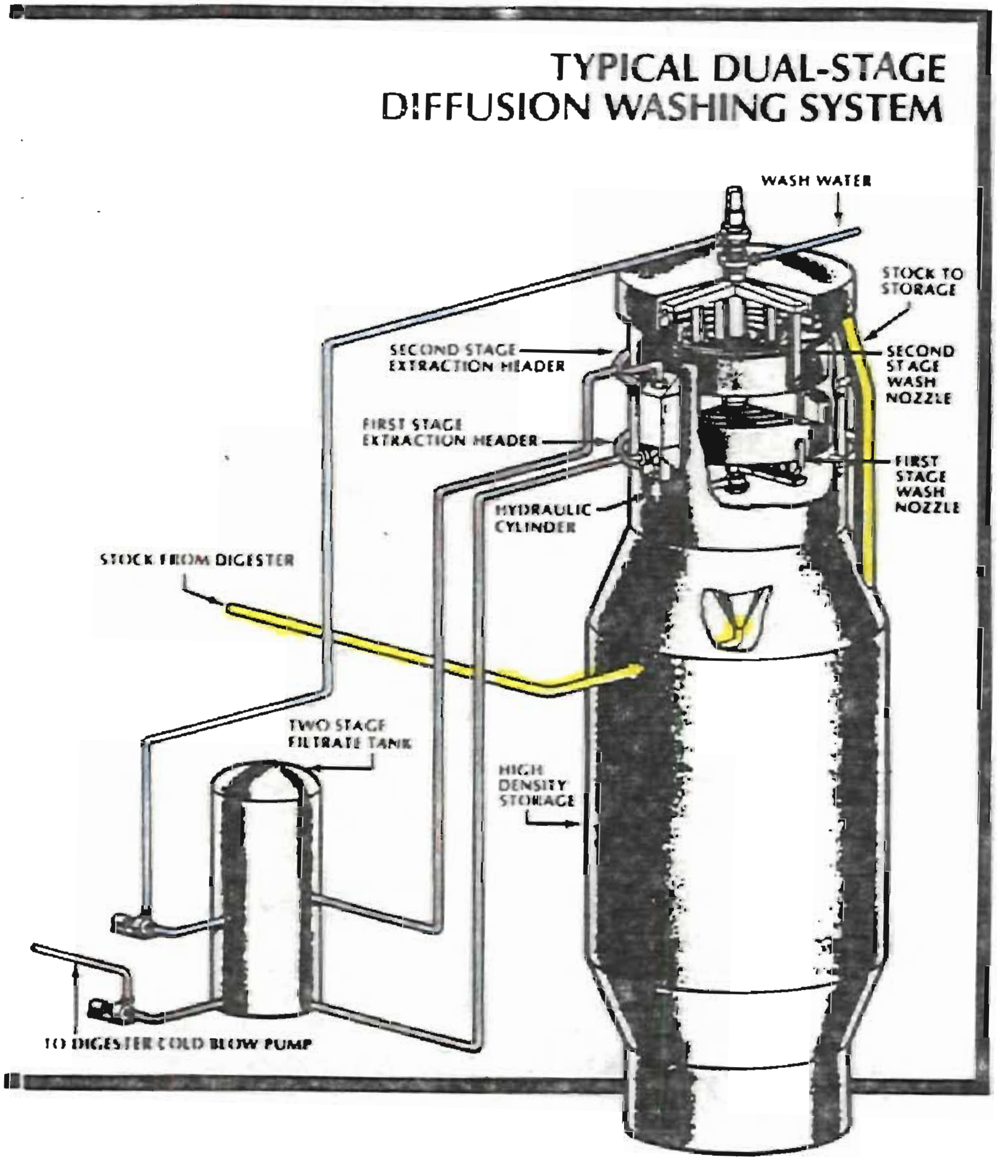


FIGURE 2 DUAL STAGE DIFFUSION WASHER - VENT NOT SHOWN

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

several rings of screen plates, is simultaneously interconnected and supported by radial drainage arms. [Refer to Figure 3]

Displaced liquor, collected through the screen rings, flows into the drainage channel, then into the radial drainage arms and from there it is directed into the collecting headers outside the tower shell. It then flows into a small sized filtrate tank.

During the operation the whole diffuser screen assembly is moving up and down in the pulp. Automatically operated hydraulic cylinders lift the screen assembly at a speed

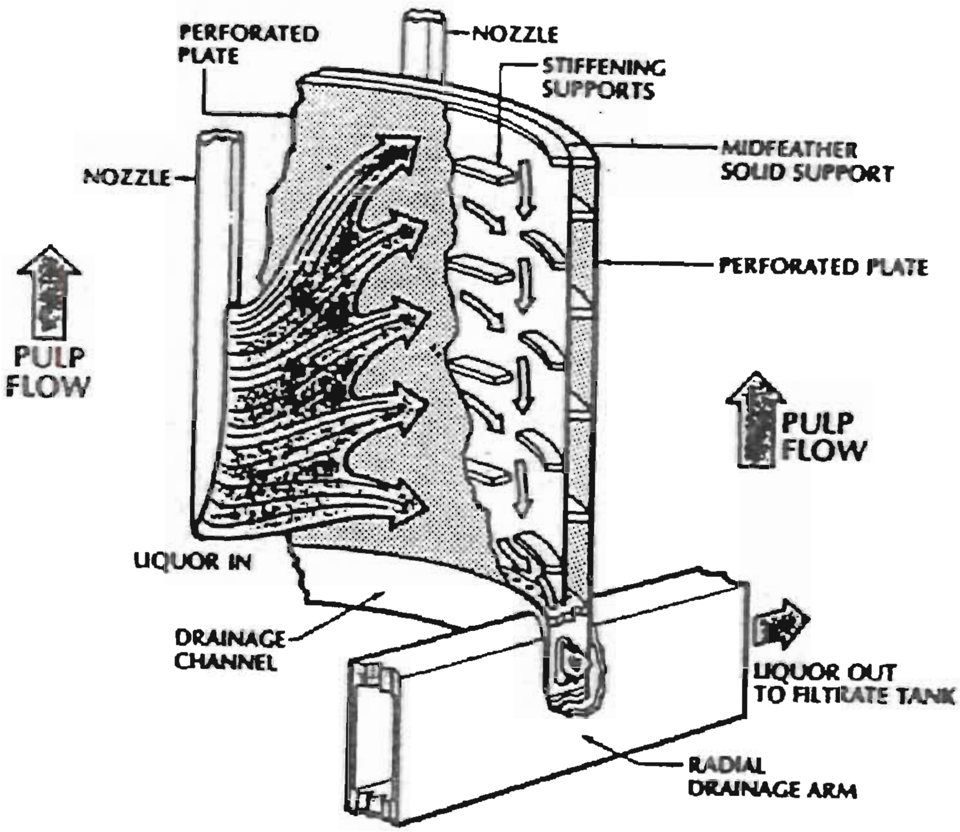


FIGURE 3 CROSS SECTION OF A TYPICAL SCREEN RING

(This figure is from Kamyr, Inc. product literature (1) and is reproduced with the permission of Kamyr, Inc., Glens Falls, New York)

which slightly exceeds the upward velocity of the pulp through the tower. At the end of the lift, the screen assembly is moved rapidly downwards. This latter movement between the screen unit and the pulp keeps the plate perforations wiped free of fibers. This cycle is continually repeated, with the upstroke duration of approximately one minute for the lift and less than one second for the downstroke.

The washing medium is introduced into the pulp through rotating distribution nozzles. The nozzles rotate at approximately 7.5 RPM. Passing between the screen rings, the discharge from the nozzles leaves a path of washing medium in the pulp. The wash liquid then rapidly displaces the liquor in the pulp both outwardly and inwardly to the nearest screen ring.

A feature of diffusion washing is that the pulp remains at the same consistency throughout the washing process, approximately 10%.

The washed pulp is discharged at the top of the diffuser tank by means of a scraper which moves the pulp horizontally to a pulp collection launder ring.

The discharged pulp travels from the diffusion washer either to a high density storage chest, or to a refiner, followed by storage.

(2) Diffusion Washer Vents - Although not indicated in Figures 1 and 2, the covers of all of the diffusion washers examined by NCASI staff (9 washers), and, to the knowledge of NCASI staff, the covers of all diffusion washers, contain a vent pipe which communicates directly to the atmosphere (discounting those that are vented to incineration systems). The purpose of this vent is to permit exchange of air when the washer is being filled or emptied, e.g., for maintenance (the washer normally operates at a fixed upper liquid/stock level, i.e., the level of the launder), or to permit air exchange during minor level changes within the washer. It is emission of reduced sulfur gases from this vent which is the concern of this report.

Also not indicated in Figures 1 or 2 is the vent pipe on the filtrate tank. Again, this vent pipe permits tank breathing during internal filtrate level changes. Gas flow rates and TRS concentrations from several filtrate tank vents were measured during the course of this study.

B. TRS Emissions from Drum Washer Systems - Summary of Existing Data

Results of NCASI (2) and NCASI/EPA (3) studies of reduced sulfur emissions from conventional rotary vacuum drum washer vents were reported in 1972 and 1974, respectively. The sulfur gas emissions were found primarily to consist of dimethyl sulfide and dimethyl disulfide. Thirty washer roof vents were sampled, and TRS emissions were found to range from 0.01 to 0.6 lb TRS/ton air dried pulp (lbs/TADP), with a median of 0.05 and a mean of 0.1 lb/TADP. The source of the wash water was shown to have a significant effect on TRS emissions: on 14 systems using fresh water, the median emission was 0.04 lb/TADP; on 5 systems using condensate, the median TRS emission rate was 0.35 lb/TADP.

Because conventional vacuum drum stock washing systems require that wash liquor (and thus air) be pulled through the drums via vacuum, emissions from vacuum pump exhausts, termed undervent emissions, were examined in the studies reported in references (2) and (3). Results of measurements on 32 undervent systems showed exhaust emissions ranging from 0.01 to 0.63 lb/TADP, with median and mean values of 0.11 and 0.16 lb/TADP, respectively. Continuous brownstock diffusion washer systems do not pull air across the pulp during washing, and there are no equivalent undervent emissions.

C. TRS Emissions from Continuous Diffusion Washer Systems - Summary of Prior (Unpublished) Data

Although no reports on TRS emissions from continuous brownstock diffusion washer vents have appeared in the literature, several individual companies have made data available to NCASI, and Kamyr, Inc. has supplied to NCASI some older data. The most pertinent of these data are reported in Table 1. It should be emphasized that the degree of confidence which may be placed in all of the data of Table 1 is not known, as gas flow and TRS measurement methods employed are not known for most data entries. Important from these data are two observations: (a) TRS emissions exceeded 5 ppm in three out of four cases, and (b) the mass contribution from these sources is very low, in all instances $\underline{<0.005}$ lb TRS/TADP. This latter observation may be compared to (a) the total mill mass emissions permitted under NSPS, which, if summed for all sources, is approximately 0.25 lb/TADP, exclusive of the smelt dissolving tank; and (b) the mean mass contribution observed from conventional washer systems (roof vents only) of 0.1 lb/TADP.

III MEASUREMENT METHODOLOGY

A. Introduction

The procedures employed in the NCASI measurement of TRS concentrations and gas flow at nine diffusion washer vents and

TABLE 1 CONTINUOUS KRAFT BROWNSTOCK DIFFUSION WASHER TRS EMISSIONS: DATA REPORTED TO NCASI BY VARIED SOURCES

INFORMATION SOURCE	IDENTIFICATION	SALT CAKE LOSS, lb Na_2SO_4/TADP	TRS, ppm	TRS, lb/ADTP
Kamyr	1st Stage Washer After Cont. Digester	120	226	0.0045
Kamyr	2nd Stage Washer After Cont. Digester	ca. 35 to 60	23	0.002
Kamyr	"Last" Stage Washer	ca. 15 to 25	1.2	1×10^{-6}
Mill Data	Two-Stage Washing After Cont. Digester	ca. 35 to 40	1 to 24	$<8 \times 10^{-4}$

filtrate tank vents are discussed in this section. The TRS measurement procedures were standard; the gas flow measurement procedure required a modification of conventional equipment due to the peculiarities of the source being measured.

B. Gas Velocity Measurement

The following characteristics of the diffusion washer vents and gas emissions are important relative to velocity/flow measurement:

(1) The vent typically is constructed of 18 in. o.d. circular fiber glass pipe, 4 to 6 ft. in height, with an upper right angle bend and an upper horizontal run of 12 to 24 inches. There is one vent per washer.

(2) There is no mechanical evacuation through the diffusion washer vent. What gas flows out of the vent does so due to level changes within the washer, or due to temperature differences (resulting in relief of internal gas expansion) between the washer and the atmosphere. This gas is thus of a low outward velocity.

(3) The exit gas is saturated with water (e.g., 150°F) and due to cooling along many of the vents, condensed water is present in many of the vent emissions.

(4) The vent is fixed to a hinged cover which fits over the top of the diffusion washer. Back pressure applied to the vent gas may result in an increase in fugitive emissions from between the top of the washer and the lip of the cover.

These characteristics narrow the choice of velocity/flow measurement techniques: item (4) rules out the use of a large plastic bag for total flow collection (this was tried, however); item (3) makes the use of a hot-wire anemometer difficult; the low velocity (2) rules out a conventional pitot tube.

Council staff chose to use a swinging vane anemometer for gas velocity measurement. An Alnor Series 6000P Velometer (Alnor Instrument Company, Niles, Illinois) was modified as follows: ca. 5 ft. x 3/8 in. i.d. tubing was installed to connect the Model 6060P probe to the anemometer body. A ca. 3/8 in. hole was drilled in the housing of the anemometer body, and an air-tight fitting was installed to permit measurement of gas temperature in the anemometer body with a small mercury thermometer. The connecting tubing was slightly longer than standard, and this permitted gas temperatures to cool to ambient levels during passage of the gas through the anemometer body. Water droplets were also removed in the tubing. The gas temperature in the anemometer body was employed for corrections to standard conditions.

The Velometer so-modified was calibrated employing a thin plate orifice in a wind tunnel at the University of Florida's Department of Environmental Engineering Sciences in Gainesville.

During field measurements of vent velocity, the 12 in. Velometer probe was employed for traverses at the vent exit, rather than in a port in the vent, which would have had to have been installed for this purpose. Although this approach produces an approximation of velocity, it will be seen that the velocities at all installations except one were at or near the limit of detection of the Velometer, such that this approximation is not of consequence.

The Velometer was calibrated in several ranges of velocity, and used in most cases in its most sensitive configuration, which utilized a readout scale graduated from 0 to 300 feet per minute. A conservative estimate of the limit of detection of the Velometer was made as 50 feet per minute.

As the field measurement data are presented, it will be seen that the "<50 ft/min" velocity, translated in an 18 inch vent to "<88 ft^3/min," appears frequently. Considerable effort could have been expended in obtaining more accurate flow measurement data. In fact, however, this is not an issue. The only purpose of the velocity/flow data is to calculate TRS mass emissions: these are extremely low, even with the conservative (high) flow rates, as will be shown.

C. On-Site Coulometric Titration TRS Measurements

(1) Sample Collection - Grab samples of diffusion washer (and other) vent emissions were taken for all data collection reported here. A ¼ in. o.d. 316 stainless steel tube was placed into the vent to a depth of ca. four ft., and sample was drawn through a total of ca. 6 ft. of ¼ in. o.d. FEP tubing into a 1-L glass impinger containing ca. 500 mL of pH 5.6 citrate buffer (reference (4), Appendix D). A second, identical empty impinger was in-line for carryover moisture removal. The sample then travelled through a 316 stainless steel needle valve and a Teflon-diaphragm sampling pump (Air Dimensions, Inc., Model 19310T, Lansdale, Pennsylvania), then via ca. 3 ft. of ¼ in. o.d. FEP tubing into a ca. 30 L (24 in. x 24 in.) Tedlar gas sampling bag with Teflon inlet tubulature (Pollution Measurement Corporation, Oak Park, Illinois). Sampling at a flow rate of ca. 1 L/minute, ca. 10 minute sampling times were employed. The validity of collecting bag samples from non-combustion sources for later analysis for TRS is presented in NCASI Air Quality Improvement Technical Bulletin No. 97 (5). Nonetheless, samples were analyzed promptly using on-site combustion/coulometric titration analysis equipment. A vent analysis consisted of the collection of from one to six bags over a period of several hours, and analysis of the contents of each bag.

MEASURE OF CONCENTRATION IN CONFINED AREA

(2) Sample Analysis - The TRS analysis system consisted of a quartz combustion tube in a clamshell furnace heated to ca. 1700°F for TRS to SO_2 conversion, a Masterflex pump, a Barton coulometric titrator, and a rotameter. This is standard equipment for TRS measurement, and it is described in several references, e.g., (4).

D. Off-Site Gas Chromatographic TRS Measurement

~40% OF MEASURED CONCENTRATION FOUND TO REMAIN AFTER 14 HOURS. CURVE APPEARS ASSYMPTOTIC

In several of the field studies, Tedlar bag samples collected as discussed above were returned to the NCASI laboratory in Gainesville for later (24 to 72 hours after collection) analysis by gas chromatography. The primary purpose of this activity was to determine TRS species, rather than concentration. The gas chromatographic system with flame photometric detection employed in this work is described in reference (6), Appendix C.

E. TRS Gas Calibration

The gas chromatograph and the combustion/coulometric titration system were calibrated in the laboratory employing test gases generated from permeation tubes which were weighed in the NCASI laboratory, with the resulting weight loss data used to calculate permeation rates (as opposed to use of a manufacturer's stated permeation rate). The construction and use of permeation tube-based systems for instrument calibration with sulfur dioxide, hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide are discussed in several NCASI references, e.g., (4, 7).

Field calibration was also necessary for the on-site TRS analysis equipment. For this purpose, a commercially prepared compressed gas mixture of sulfur dioxide in nitrogen (Airco Products, Jacksonville, Florida) at a stated concentration of 9.2 ppm was analyzed with the SO_2-permeation tube-calibrated gas chromatograph, and found to be within 5 percent of the stated value. This cylinder was taken into the field and employed for on-site equipment calibration at studies at eight of nine diffusion washers. At the ninth washer, test gas from a cylinder containing 25.5 ppm hydrogen sulfide in nitrogen (Airco, similarly checked) was diluted with oxygen and employed to calibrate the complete combustion tube/coulometric titration system. (This complete system calibration check was also conducted in the laboratory prior to field use of the on-site analysis equipment.)

A calibration gas analysis was carried out before and after each TRS measurement in the field.

IV FIELD MEASUREMENT RESULTS

A. Site Identification

Vent analyses at nine separate continuous brownstock diffusion washers were conducted by NCASI staff during this investigation. Because relative to conventional brownstock washing systems, the number of diffusion washing systems is small, it is not difficult for persons familiar with the industry to determine the site of a given diffusion washer from even a brief description of the kraft mill at which it is installed. In order to secure the identity of the facilities at which these field measurements were made, only information necessary to describe features important to diffusion washer emissions is provided.

B. Diffusion Washer Vent Measurement Results

(1) Washer A - Results of measurements at Washer A are presented in Table 2. Washer A was the only washer at which positive flow from the diffusion washer vent was observed for a significant fraction (40 sec/72 sec) of the washer cycle. Discussions with Kamyr representatives relative to this matter concerned their observation that a "spongy" pulp with entrained air will react to the screen stroking in such a way as to show a "piston effect" (not necessarily completely in phase with the screen stroking) resulting in positive "puffs" out of the washer vent. Whether this was the cause of Washer A's vent flow, and why the pulp at only Washer A was spongy, was not determined.

Washer A was the only facility at which positive flow out of the vent occurred for a long enough time for gas sample collection to be made during this positive flow only. The 752 dry standard cubic feet per minute (DSCFM) observed as an approximate average flow during the positive puffs is weighted by a factor of 40/72 in the mass emission entry in Table 2. (In spite of Washer A's having the highest measured gas flow, mass emissions were only 0.001 lb/ADTP.)

Six separate bag samples of emissions from Washer A's vent were taken over the course of ca. 3 hours. The average ±2 standard deviation of the results of the analyses of these bags was 12.7 ± 4.8 ppm.

Gas chromatographic analyses of two bag samples performed 24 hours after vent sampling showed average concentrations as follows:

H_2S = 0.8 ppm
MeSH = not detected
Me_2S = 8.5 ppm
Me_2S_2 = 0.8 ppm

10.1 ppm

TABLE 2 RESULTS OF FIELD MEASUREMENTS OF CONTINUOUS BROWNSTOCK DIFFUSION WASHER VENT TRS CONCENTRATIONS AND GAS FLOWS

LOOKS LIKE CHAMPION?

	WASHER A	WASHER B
Diffuser Description	1125 TPD 2-stage 6 ring, 20 ft. diam.	760 TPD 2-stage 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	13 (1.4×10^{-3}) [+ puffs only] (Me_2S)	3 ($<1 \times 10^{-4}$) [total] (Me_2S)
Vent Flow Rate, DSCFM	418 (time weighted)	<88
Wash Liquor Temp., °F	160	140-150 nominal
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. - Flow Δ Wash Liquor Top Stroke? -	 59 11 1 No	 75 10 0.8 No
Salt Cake Loss lb/ADTP, as Na_2SO_4	Not Measured	69
Source of Upper Stage Wash Liquor	Stripped & Cleaned Evap. Cond. ↓ Post-Diff. Sys. Washer Filtrate ↓ 2nd Stage Diff. Washer	Stripped & Cleaned Evap. Cond. ↓ Decker ↓ 2nd Stage Diff. Washer
Cooking Liquor Sulfidity	29 percent (C-test)	24.7 percent (active)
Hardwood/Softwood	10 percent/90 percent	Softwood

TABLE 2 (Continued)

	WASHER C	WASHER D
Diffuser Description	355 TPD 2-stage (modified) (o ring, 20 ft. diam.	590 TPD 2-stage (modified) 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	20 ($<1.2 \times 10^{-3}$) [total] (Assume Me_2S)	30 ($<9.7 \times 10^{-4}$) [total] (MeSH)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 180	ca. 180
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. -	} total 88 sec.	} total 70 sec.
Flow Δ Wash Liquor Top Stroke? -	Yes, dec. flow	Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	63	48
Source of Upper Stage Wash Liquor	Stripped Condensate	Stripped Condensate
Cooking Liquor Sulfidity	27-30 percent	28 percent
Hardwood/Softwood	Hardwood	Hardwood

TABLE 2 (Continued)

	WASHER E	WASHER F
Diffuser Description	532 TPD 2-stage (modified) 6 ring, 20 ft. diam.	532 TPD 2-stage (modified) 6 ring, 20 ft. diam.
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	18 ($<7.5 \times 10^{-4}$) [total] (Assume Me_2S)	30 ($<1.3 \times 10^{-3}$) [total] (Assume Me_2S)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 150	ca. 180
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. - Flow Δ Wash Liquor Top Stroke? -	total 90 sec. Yes, dec. flow	total 93 sec. Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	73	76
Source of Upper Stage Wash Liquor	Linerboard White Water	Stripped Condensate
Cooking Liquor Sulfidity	28-29 percent	26-30 percent
Hardwood/Softwood	Softwood	Softwood

TABLE 2 (Continued)

	WASHER G	WASHER H
Diffuser Description	185 TPD 2-stage (modified) 6 ring, 14 ft. diam.	1300 TPD 2-stage, same filtrate both stages
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	22 ($<2.8 \times 10^{-3}$) [total] (Assume Me_2S)	5.9 ($<1 \times 10^{-4}$) [total] (Me_2S)
Vent Flow Rate, DSCFM	<88	<88
Wash Liquor Temp., °F	ca. 180	130-140
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. - Flow Δ Wash Liquor Top Stroke? -	total 81 sec. Yes, dec. flow	total = 66 top = 11 Yes, dec. flow
Salt Cake Loss lb/ADTP, as Na_2SO_4	72	35
Source of Upper Stage Wash Liquor	Stripped Condensate	Decker Filtrate
Cooking Liquor Sulfidity	Target 28 percent	25 (active alkali)
Hardwood/Softwood	Softwood	Softwood

TABLE 2 (Continued)

	WASHER J
Diffuser Description	450 TPD 3-stage 5 ring, 18 ft. diam.
Vent TRS, ppm (lb/ADTP) [Sample Collection] (Major Component)	6.4 $(<2 \times 10^{-4})$ [total] (Assume Me_2S)
Vent Flow Rate, DSCFM	<74
Wash Liquor Temp., °F	150
Washer Cycle Upstroke, sec. - Top, sec. - Downstroke, sec. - Flow Δ Wash Liquor Top Stroke? -	 45 5 0.3 No
Salt Cake Loss lb/ADTP, as Na_2SO_4	30-35
Source of Upper Stage Wash Liquor	Fresh hot water
Cooking Liquor Sulfidity	23-26 percent (active alkali)
Hardwood/Softwood	Softwood

(2) Washer B - Results of measurements at Washer B are presented in Table 2. All diffusion washer vent gas flows were less than detectable, translating to less than 88 DSCFM, as discussed in III-B, above. Gas chromatographic analysis of one vent sample bag 24 hours after sample collection showed 3.2 ppm Me_2S, with the other sulfur compounds not detected (<0.1 ppm).

(3) Washer C - Results of measurements at Washer C are presented in Table 2. During vent velocity measurement, wind was gusting at 100 to 800 ft/min into the vent, and no gas flow was measured out of the vent. As a consequence, the vent gas flow was described as not detectable, which conservatively translates to <88 ft^3/min, as discussed above.

Gas chromatographic analyses of Washer C vent samples were not carried out. The mass emission rate was calculated assuming dimethyl sulfide to be the only TRS compound of significance.

(4) Washer D - Results of measurements at Washer D are presented in Table 2. There was no detectable gas flow from the vent during 96 percent of the 70 second cycle time. Just before the screens dropped ("banged"), as the washer commenced to "rattle," a ca. 200 ft/min puff was observed for ca. 2 seconds, followed by a ca. 400 ft/min puff for 1 second. Because for the remaining duration of the cycle, vent gas flow was not detectable (<50 ft/min), a weighted average could be applied, so that a "<59 ft/min" factor could be used. This was not done for the calculations presented in Table 2, as it is felt that the <50 ft/min velocity employed in the mass emission rate calculations is amply conservative (high).

Gas chromatographic analysis of a bag sample of Washer D vent emissions ca. 72 hours after sample collection indicated the following:

H_2S = 9.2 ppm
MeSH = 15 ppm
Me_2S = 6.5 ppm
Me_2S_2 = 3.6 ppm

Total 34.3 ppm

The mean emission rate of <9.7 x 10^{-4} lb TRS/TADP reported in Table 2 was calculated from these data. Note that if the 38 ppm TRS (as SO_2) were employed in this calculation with the assumption that all of the TRS was dimethyl sulfide (which assumption was made for calculations for vents for which no gas chromatographic data are available), the mass rate would be <1.2 x 10^{-3} lb/TADP, not a significant difference.

(5) Washer E - Results of measurements at Washer E are indicated in Table 2. Vent flow measurement indicated a ca. 250 ft/min average positive velocity for 5 seconds of the 90 second washer cycle. This is not significant for mass rate emissions calculations, as discussed above, and a figure of <50 ft/min (<88

ft³/min) was used for estimating mass emissions. Gas chromatographic analyses were not performed for this source.

(6) Washer F - Results of measurements taken at Washer F are summarized in Table 2. Measurement of the vent exit velocity indicated a ca. 100 ft/min puff for ca. 1 sec. duration, otherwise positive flow was not detectable. Gas chromatographic analyses were not performed for this source.

(7) Washer G - Results of measurements taken at Washer G are presented in Table 2. Vent flow measurement indicated no positive velocity above the limit of detection of the velocity measurement equipment. Gas chromatographic analyses were not performed.

(8) Washer H - Results of measurements performed at Washer H are summarized in Table 2. Velocity measurements at this vent showed no detectable gas velocity. A gas chromatographic analysis of one bag sample from this vent ca. 72 hours after collection indicated the following:

H_2S = 1.5 ppm
MeSH = 1.1 ppm
Me_2S = 2.0 ppm
Me_2S_2 = not detected

3.6 ppm

(9) Washer J - Results of measurements performed at Washer J are indicated in Table 2. Velocity at the vent was not detectable, however, a moisture plume was observed originating from a ca. 11 in. x 7 in. port in the washer cover. Velocity measurements here during the washer cycle indicated ca. 400 ft/min for 15 seconds, and <50 ft/min for 45 seconds, indicating a flow rate <74 ft³/min. (Note that this 60 second cycle period is 10 seconds longer than the washer cycle in operation as indicated by mill personnel.) On-site TRS measurements of three bag samples yielded a mean ±2 standard deviation result of 6.4 ± 1.1 ppm. Gas chromatographic analyses were not performed.

C. Filtrate Tank Vent Measurement Results

Results of on-site analyses of samples collected at four diffusion washer filtrate tanks are summarized in Table 3. The mass emission rates are all less than 0.003 lb TRS/TADP, making this a very minor pulp mill TRS source.

D. Field Measurement Results Interpretation

(1) Background - It was anticipated prior to the field data collection stage of this activity that differences in diffusion washer vent TRS emissions would be observed from washer to washer, and it was desired to collect pertinent operating data in order to be able to relate observed TRS emission magnitudes to general pulp mill and specific washer operating practice. Although these data were collected, it is seen that the variation

TABLE 3 TRS EMISSIONS FROM BROWNSTOCK DIFFUSION WASHER COMBINED FILTRATE TANK VENTS

WASHER SYSTEM (Table 2)	TRS, ppm	MAJOR TRS COMPONENT	VENT FLOW RATE, DSCFM	lb TRS/ ADTP	VENTED TO
A	45	Me_2S	330	2.8×10^{-3}	Vacuum System/ Incineration
B	88	Me_2S	<53	$<1.3 \times 10^{-3}$	Atmosphere
E	14	Assume Me_2S	<53 (estimated)	$<2.1 \times 10^{-4}$	Atmosphere
H	9	Assume Me_2S	<53	$<1.3 \times 10^{-4}$	Atmosphere

in TRS from washer to washer is not great, so that on the basis of these data a given parameter or set of parameters cannot be identified as controlling emissions. The operating data are presented in Table 2, and an explanation of their possible effect on washer TRS emissions follows:

(2) Wash Liquor Temperature - Logically, the higher the temperature of the wash liquor supplied through the nozzles of the washer arms in the upper washer stage, the greater the potential for release in the washer of volatile sulfur compounds from (a) the wash liquor and (b) the liquor which is being displaced. It is seen from Table 2 that these temperatures (mill-supplied data) ranged from 135 to 180°F. Simple linear regression of the temperature versus TRS data gives an equation with a correlation coefficient $r^2 = 0.70$. Although it is tempting to speculate that temperature is a controlling factor, logic dictates that it should be only one of several important factors. Also, the appropriate way to study the wash liquor temperature effect is to make a number of temperature versus TRS measurements at one washer. This was not possible in this first data collection activity.

(3) Washer Cycle Parameters - Upon observing the significant positive puffs of gas from the vent at washer A, an attempt was made to relate washer operation to this phenomenon, which was not observed at the eight other washers. It was felt that some difference in screen movement times, or the change in the flow of wash liquor as the screen reaches and remains at the top of its stroke (for backflushing), could be related to the puffing effect at washer A versus the other washers. No such relationship is apparent from the data of Table 2.

(4) Salt Cake Loss - When one focuses upon (a) the upper stage of a diffusion washer as the source of vent TRS emissions, and (b) the sulfur compound content of the liquor in that upper stage as being important to TRS emissions, and if one neglects for this consideration the contribution of sulfur compounds by the upper stage wash liquor, then, logically, the "cleaner" the pulp slurry in the upper stage, i.e., the greater the degree to which it has been washed by the time it reaches the upper portion of the upper washing stage, the lower the potential for TRS emissions from the washer vent. A measure of the degree to which the pulp has been washed is salt cake loss, expressed, e.g., as pounds of sodium sulfate per ton of air dried pulp. The higher the salt cake loss number the greater the amount of cooking liquor carried out of the washer in the pulp slurry, hence the greater the potential concentration of sulfur compounds in the upper portion of the washer.

The salt cake loss data of Table 2 do not show a significant correlation with vent TRS concentration. The lower salt cake loss washers, however, H and J, showing 30 to 35 lb/TADP, do show the second lowest emissions, 6 ppm.

(5) Source of Upper Stage Wash Liquor - As indicated in section II-B, above, the source of wash liquor was shown to have a significant effect on TRS emissions from conventional vacuum drum type brownstock washer systems. It was suspected that this might also be the case for diffusion washers, hence information on the source of the wash liquor employed for upper stage washing was collected, and is presented in Table 2.

One pair of entries in Table 2 provides interesting information on this point. Washers E and F are at the same mill, nearly identical in size and operation, but washer E at 18 ppm TRS employs linerboard white water for upper stage washing, while washer F at 30 ppm TRS employs stripped condensate. Washer F's wash liquor is also at a higher temperature (180 versus 150°F), which makes interpretation of the observation difficult.

All of the washers (four) with TRS emissions above 20 ppm employed stripped condensate for upper stage washing. Of the washers (five) with TRS emissions below 20 ppm, only two employed stripped condensate. The lack of information on the volatile sulfur compound content of these wash liquors makes interpretation of this observation difficult also.

(6) Other Parameters - It was anticipated that cooking liquor sulfidity and wood species pulped might have an effect on washer vent TRS emissions or sulfur gas species. This information is presented in Table 2, but no conclusions relative thereto are apparent.

V SUMMARY AND CONCLUSIONS

The following points summarize results of measurements made at nine continuous kraft process brownstock diffusion washers:

(1) Gas flow rates at eight of nine diffusion washer vents examined were very low, less than the limit of detection of the swinging vane anemometer employed in this work. A conservative (high) limit of detection for this instrument was estimated at 50 ft/min, which results in a typical diffusion washer vent gas flow rate of less than 90 ft^3/min.

(2) Total reduced sulfur gas emissions ranged from 3 to 38 parts per million with a median of 18 and a mean of 17 parts per million.

(3) Mass emission rates could only be presented as maximum possible values, due to the necessity of describing gas flows in "less than" terms. On this basis, vent emission rates ranged from less than 1×10^{-4} to less than 2.8×10^{-3} pounds total reduced sulfur per air dried ton of pulp, with a median of less than 9.7×10^{-4} and a mean of less than 9.8×10^{-4} pounds total reduced sulfur per air dried ton of pulp.

(4) Comparison of the mean mass emission rate for diffusion washer vents (<0.001 lb/TADP) with that determined for conventional drum washer vents (0.1 lb/TADP, reference (3)) indicates the former to be a much less significant source of reduced sulfur gases.

(5) Trends were noted relative to the possible influence of wash liquor source and temperature, and salt cake loss, on washer vent TRS emissions. Data collection to quantify these influences has not been undertaken.

VI LITERATURE REFERENCES

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(4) "A Guide to the Design, Maintenance, and Operation of TRS Monitoring Systems," NCASI Air Quality Improvement Technical Bulletin No. 89, September, 1977.

(5) "A Study of the Use of Bag Sampling in Determining TRS Emissions from Kraft Pulping Sources," NCASI Air Quality Improvement Technical Bulletin No. 97, September, 1978.

(6) "Laboratory and Field Examination of Several Alarm-Type H_2S Area and Personal Monitors for Use in the Kraft Pulp Mill Workplace Environment," NCASI Technical Bulletin No. 393, February, 1983.

(7) "A Laboratory and Field Study of Reduced Sulfur Sampling and Monitoring Systems," NCASI Air Quality Improvement Technical Bulletin No. 81, October, 1975.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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TECHNICAL & ENVIRONMENTAL CONTROL - PENSACOLA

April 14, 1989

Michael D. Harley, Engineer
Dureau of Air Quality Management
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: DER File No. AC 17-142004

Dear Mr. Harley:

Attached for your review are Champion's comments on the NCG construction permit application and DER's draft permit AC 17-142004. These comments should address the concerns both of the Department and Champion. The two significient issues addressed are the operation rates in Specific Condition 2, and the treatment of Vents I and II from the Kamyr diffusion washer. Champion is requesting that these vents not be treated for the reasons disscussed in the attached comments. Champion is also submitting alternate language for Specific Condition 2 and 3 which we believe is more in line with the agreement reached between the industry and the Department.

If you or your staff have any questions concerning these comments please call. I will call on Friday, April 21 to discuss the status.

Sincerely,

David T. Arceneaux

cc: Ed Middleswart, DER

bcc: list

Comments on DER Permit AC 17-142004

OPERATION RATES

The operation rates identified in Specific Condition 2 are generally the design maximum rates for each source. Champion's concern is the establishment of an operation rate permit limit indepentdent of emission and inconsistent with regulations. The establishment of any permit limit is viewed by Champion to be a significent event requiring adherance to that value. The necessary monitoring and review required, as well as tracking compliance imposes a significent work load. Where these limits are necessary to protect the environment, Champion believes them to be important and a proper condition in a permit. However, where a limit is not necessary, then the establishment of a production limit imposes unnecessary monitoring and tracking burden.

The specific concerns in Specific Condition 2 relate to the establishment of production rates indepentent of emissions. It is this reason that the production rates should be stated as to their intended purposes, and only be actual permit limits where there is a direct impact on emissions. In addition, the establishment of production rates for non production equipment (i.e., pollution control equipment) is unnecessary and counter-productive. The condensate stripper is designed to remove odor gases from condensate before reuse. The stripper is an intergal part of the Kamyr digester and uses the contaminated flash steam from the Kamyr to strip contaminated condensate from several sources. However, there is not a measurable production value associated with the stripper.

With the above comments in mind, Champion would like to propose the following language for Condition 2.

SPECIFIC CONDITIONS:

2. The following are the maximum operation rates for each of the permitted sources for the indicated purposes. These operation rates shall be monitored and recorded.

a. For testing purposes and NSPS applicability purposes, the maximum production rate of the batch digester system shall be 45 tons of air dry unbleache pulp (TADUP)/hr. and 864 TADUP/day. Tests for complianc shall be conducted with the lime kiln operating at 90-100% of the maximum lime kiln operating rate and with the batch digester system operating as near the maximum production rate as possible, but in no case shall the operation rate of the digesters be less than 85% of the maximum operation rate when testing. For PSD purposes, the maximum operation rate shall be 756 TADUP/day on an annual average.

b. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr digester system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average.

c. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr brown stock diffusion washer system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day on an annual average.

d. The design hydraulic loading of the condensate stripping column is 215,000 pounds/hour (430 gallons/ minute) of liquid feed.

e. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 1 multiple effect evaporator system shall be 181,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

f. For testing purposes, NSPS applicability purposes, and PSD purposes, the maximum operation rate of the No. 2 multiple effect evaporator system shall be 97,000 pounds of dry black liquor solids (BLS) per hour measured as flow and solids input to the evaporator.

g. The maximum operation rate of the lime kiln shall not exceed 14.5 tons per hour of calcium oxide and is based on an input of 48,857 pounds per hour of lime mud feed.

3. The design rate of natural gas firing in the lime kiln is 130,000 dry standard cubic feet (60oF and 14.7 psia) per hour during normal operation including maximum production. The maximum design rate of natural gas firing is 216,000.

DIFFUSION WASHER SYSTEM

Champion is requesting that the Vents I and II from the diffusion washer system be emitted to atmosphere without treatment. When originally permited in 1979, the BACT review by both DER and EPA resulted in a determination that these vents be emitted untreated. The vents were however required to be monitored. The company at that time decided that collection and treatment were less expensive then monitoring. Since that determination, EPA NSPS rules have changed and allow for the venting of sources when the total mass TRS is less than 0.01 pounds per ton ADP (Subpart BB, 60.283(a)(1)(vi)) without requiring continuous monitoring. The basis of this exemption was work done by NCASI and reported in Technical Bulletin No. 406 (copy attached).

The two vessel Kamyr digester system operating at the Pensacola mill contained within the system a hi-heat wash zone and cooling zone. Thus odor gases generated in the digester and released through the normal "blowing" process are collected in the NCG system. Flash steam is collected in flash tanks and used in the condensate stripper. All normal odor gas sources are thus collected and incinerated. Figure 1 shows the entire Kamyr system. The cooled, washed pulp is discharged through the Kamyr outlet device to the diffusion washer. This process is called "low temperature blowing" and is shown on Figure 2. The diffusion washer system takes the partial washed pulp and completes washing before high density storage (Figure 3). The filtrate tank is a two compartment tank which holds filtrate from both extraction stages. The operational function of diffusion washers is explained in detail in the NCASI Bulletin.

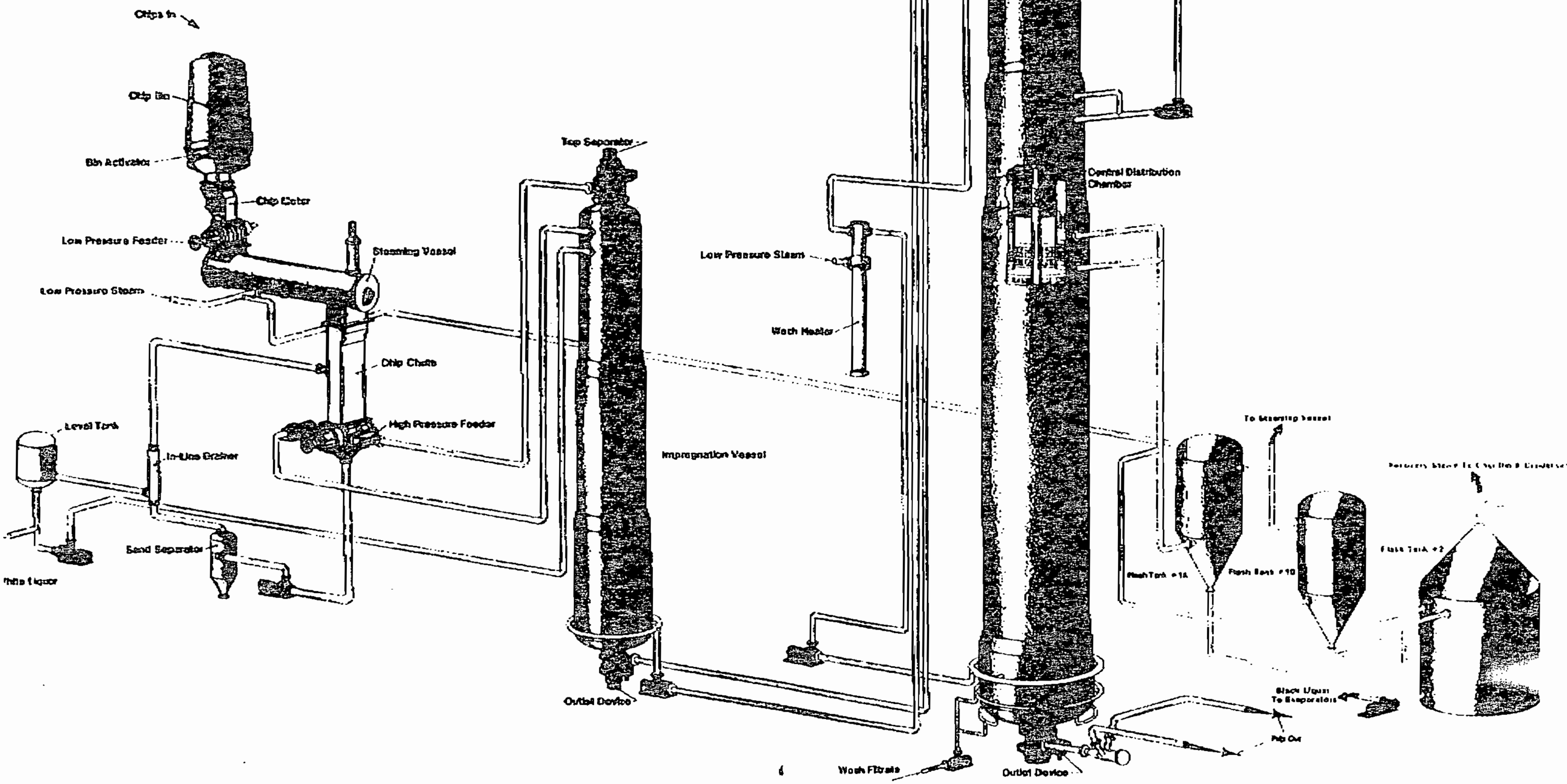
The top cover of the diffusion washer contains a vent pipe to permit exchange of air when the washer is being filled or emptied. Normal washer operation is to have a fixed liquid/stock level. Thus, the vent is an atmospheric vent with essentially no flow but with a large surface area. It is this feature which makes the vent incompatible with the new NCG collection system. The existing system is a low concentration, high flow system using fans to transport gases, with dilution from ambient air. The collection of a large surface area with no forced flow is not a problem. The new system however is a steam-ejector driven high concentration/low flow system. It would be impractible to collect a large surface area system.

Although this request would allow the venting of existing control sources, the impact on air quality would be negliable. The total mass emissions of TRS gases from these sources is very small (<0.005 pounds/TADP), and would represent <0.7 tons per year as H2S. In comparison, the improved NCG system will collect and incinerate approximately 5% additional TRS gases from the batch digester system. At an estimated generation of 10 pounds of TRS per ton of pulp, this represents approximately 70 tons per year of additionally controled TRS.

In conclusion, as stated above, the new system is not compatable with collecting diffusion washer vents, these vents were allowed to be vented in the original BACT determination, and current NSPS regulations exempt these vents from control and monitoring.

Best Available Copy

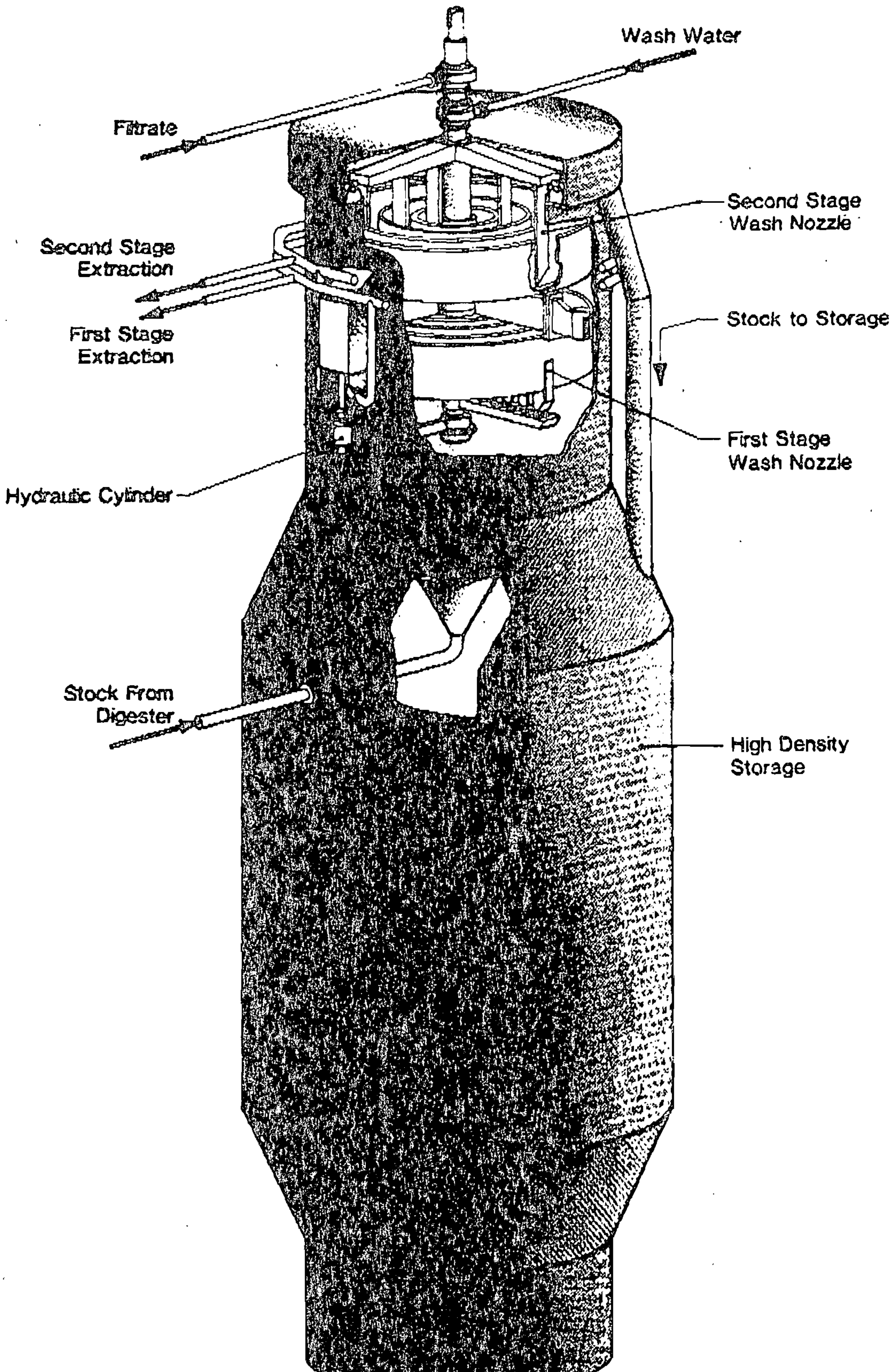
KAMYR TWO-VESSEL HIGH YIELD COOKING SYSTEM

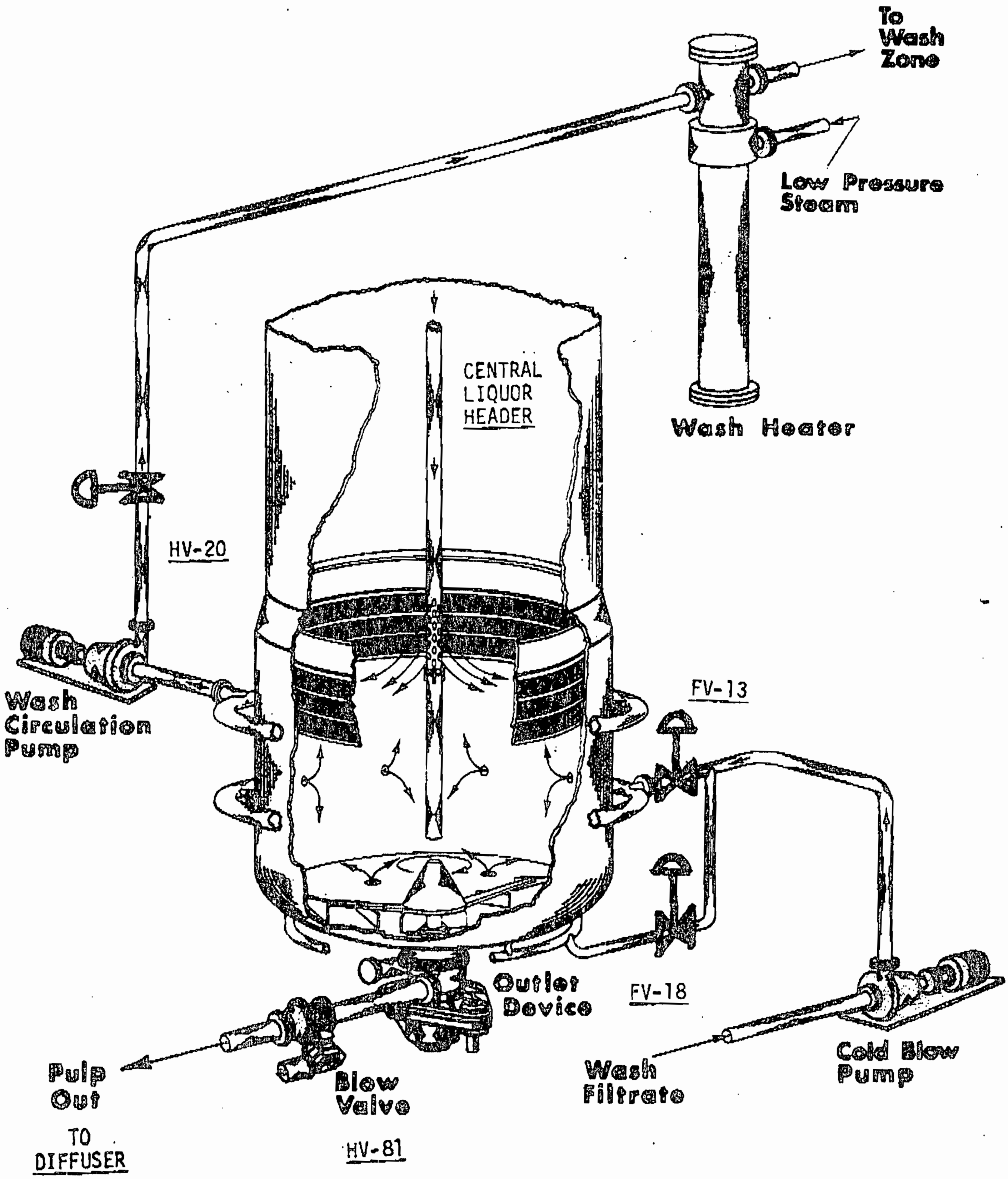


Best Available Copy

WO-STAGE BROWNSTOCK DIFFUSER MOUNTED ON HIGH DENSITY STORAGE

1-0213-88





LOW TEMPERATURE BLOWING

file copy

OFFICE OF THE DISTRICT ATTORNEY

ROBERT W. WILTERS
CHIEF ASSISTANT DISTRICT ATTORNEY
LAURA DAHLE
ASSISTANT DISTRICT ATTORNEY
CHARLES KENNETH SLADE
ASSISTANT DISTRICT ATTORNEY
LISA A. BRADFORD
ASSISTANT DISTRICT ATTORNEY

JOHN DAVID WHETSTONE
DISTRICT ATTORNEY
TWENTY-EIGHTH JUDICIAL CIRCUIT

P. O. BOX 58
BAY MINETTE, AL 36507
(205) 937-0274

RECEIVED
APR 6 1989
DER - BAQM

March 31, 1989

Department of Environmental Regulation
Bureau of Air Quality Managment
2600 Blairstone Road
Tallahassee, Florida 32399

Dear Sirs:

I am the District Attorney of the 28th Judicial Circuit of Alabama which consists of Baldwin County. Baldwin County is the largest county in the State of Alabama and is the only county in the state which borders Perdido Bay.

It is my understanding that Champion Paper Company has requested a variance to expand the amount of air pollution from their plant located in Pensacola or Cantonment which is continuous to Perdido Bay which is shared by both states.

The State of Alabama has a particulary diffcult problem with air pollution and we would hope that the Department of Environmental Management would not grant any variance which would lessen the quality of air we breathe or would create any potential damage to the citizens of the State of Alabama.

I remain

Very Truly Yours,

John D White

JOHN D. WHETSTONE
District Attorney

copied: M. Harley
C. Middleswart
CHF/BT

OFFICE OF DISTRICT ATTORNEY
P. O. BOX 58
BAY MINETTE, ALABAMA 36507

MOBILE, AL 366
PM
4 APR
1989

NATIONAL
CHILDREN
DENTAL HEA

Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blairstone Road
Tallahassee, Florida 32399

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

PM
3-23-89
Cantonment, FL

File Copy

RECEIVED
MAR 24 1989
DER-BAQM

Champion
Champion International Corporation

March 23, 1989

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

Dear Mr. Fancy:

The "Intent to Issue" for Champion's NCG System at the Pensacola Mill, was published as a legal notice in the Pensacola News Journal on March 10, 1989. Attached is a copy of the notice and the Notary Affidavit for your records.

Please contact me if you have any questions.

Sincerely,

Harry A. Dail

Harry A. Dail
Process Engineer
Environmental Control

cc: Mr. Ed Middleswart, DER
Northwest District

Mike Harley 3-28-89 [illegible]

PENSACOLA
News Journal

PUBLISHED DAILY
PENSACOLA, ESCAMBIA COUNTY, FLORIDA

State of Florida,
County of Escambia.

Before the undersigned authority personally appeared
J. Diane Deal
who on oath says that she is Legal Advertising Supervisor of the Pensacola News Journal, a daily newspaper published at Pensacola in Escambia County, Florida; with general circulation in Escambia, Santa Rosa, Okaloosa and Walton Counties that the attached copy of advertisement, being a NOTICE in the matter of

Notice of Intent

__________ in the __________ Court,

was published in said newspaper in the issues of

March 10, 1989

Affiant further say that the said The Pensacola News Journal is a newspaper published at Pensacola, in said Escambia County, Florida, and that the said newspaper has heretofore been continuously published in said Escambia County, Florida, each day and has been entered as second class mail matter at the post office in Pensacola, in said Escambia County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant 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.

J. Diane Deal

Sworn to and subscribed before me this 16th
day of March, A.D., 1989

Betty J. Paxton
NOTARY PUBLIC.

My Commission Expires October 26, 1991

LEGAL NOTICE

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby given notice of its intent to issue a permit to Champion International Corporation located at 375 Muscogee Road, Cantonment, Escambia County, Florida to construct/install physical changes to the Kamyr continuous digeste system (consisting of a Kamyr digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell, etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.) and the lime kiln. The authorization also includes a number of changes to the presently installed, noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to reduce the venting of uncontrolled TRS emissions. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. The petition must contain the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time filing. 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.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any:

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

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

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

Dept. of Environmental Regulation
Northwest District Office
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.

Legal No. 35777 1T
March 10, 1989

Best Available Copy

Este L. Johnson
13090 Lillian HighWay
Pensacola, Florida
32506

Florida Department of Environmental Regulations
Champion International Corp. Legal No. 35777
Bureau of Air Quality Management

(a) Este L. Johnson, 13090 Lillian High Way Pensacola Florida request for extension of time and a informal hearing under 40 C.F.R. Part 124. Under section 120.57 Florida Statutes.

(b) Notice of Intent to Issue by Florida Department of Environmental Dept. to Champion International Corp. was Published in Pensacola News Journal, Friday March 10, 1989.

(c) My family and I have lived on Perdido Bay for over 32 years. I have seen a big change in the Air Quality now and what it use to be, at times air quality so bad causes eyes to water and nose to run.

(d) — It would take a scientist or biologist to
(e) — answer these questions and I am just a mother
(f) — and grandmother.
(g) —

The need is to hold an informal Hearing is so that this permit can be explained to the Fullest.

Respectively,
Este L. Johnson
13090 Lillian High Way
Pensacola, Florida 32506

Best Available Copy

Estes L. Johnson

(2)

Department of Environmental Regulations
Mr. Bill Thomas

I know this matter of clean air and water are two separate things, but it is very unfair, that tax payers that the salaries of the Environmental Depts. have to take the polluters to Court in order for the Environment to be protected.

We have just went to Administrative Court on Champion and D.E.R. now awaiting the results, which has been very costly "thousands of dollars" and time consuming.

D.E.R. is not enforcing their laws and big people can get by with any thing they want to do as long as they can get by with it.

No wonder our World is in such a mess and it won't get any better until the Environment Dept. start protecting the Environment instead of the polluters. We pay high Property Taxes to live on this once beautiful body of water.

Sincerely,
Estes L. Johnson

P.S. In 84 Perdido Bay had the highest Mercury in the State (0.56-0.6 (Mg/Kg). 10/82).
Will Mail you a Copy if interested.

P. L. Langan
900 Tracy Road
Pensacola, FL 32506
March 17, 1989

Mr. Bill Thomas:

If this permit gives Champion International another opportunity to exceed State and/or Federal standards to pollute our air, while continually polluting our bays, I strongly oppose its issuance.

Many of us residents neither have the knowledge nor finances to fight these big industries that pollute our environment. We are suppose to have DER and EPA to regulate industry for our benefit. Nearly every week news reports reveal that our protectors are not protecting the people that pay their salaries.

I implore you to never again issue a permit to exceed standards without a time frame to conform to standards.

Sincerely,

Pat Langan

P. L. Langan

RECEIVED
MAR 20 1989
DER - BAQM

P.L. Langan
900 Tracy Road
Pensacola, FL 32506

PENSACOLA, FL 325
PM
17 MAR
1989

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

ATTN: Bill Thomas

P 274 007 599

RECEIPT FOR CERTIFIED MAIL

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

☆U.S.G.P.O. 1985-480-794

Sent to Mr. T. P. Crane, Champion Int.	
Street and No. P.O. Box 87	
P.O., State and ZIP Code Cantonment, FL 32533	
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: 3-3-89 Permit: AC 17-142004	

PS Form 3800, June 1985

● **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. T. P. Crane, Jr., V.P., Operations Manager Champion International Corp. P.O. Box 87 Cantonment, FL 32533	4. Article Number P 274 007 599 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Gerald McCammon	
7. Date of Delivery 6 MAR 89	

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

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

March 3, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533

Dear Mr. Crane:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit authorizing physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell, etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.), and the lime kiln. The authorization also includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to reduce the venting of uncontrolled TRS emissions.

Please submit any written comments 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/mdh

Attachments

cc: E. Middleswart, NW District
L. Sarratt, P.E.
D. Arceneaux, Champion International

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533

DER File No. AC 17-142004

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 application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Champion International Corporation applied on November 13, 1987, to the Department of Environmental Regulation for a permit to construct physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell, etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.), and the lime kiln. The authorization also includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to reduce the venting of uncontrolled TRS emissions.

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 an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a 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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the applicant have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

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:

E. Middleswart, NW District
L. Sarratt, P.E.
D. Arceneaux, Champion International

<u>CERTIFICATE OF SERVICE</u>

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 3-3-89.

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.

Martha J. Wise — Clerk
3-3-89 — Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Champion International Corporation located at 375 Muscogee Road, Cantonment, Escambia County, Florida to construct/install physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell, etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.), and the lime kiln. The authorization also includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to reduce the venting of uncontrolled TRS emissions. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time filing. 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.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

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

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

Dept. of Environmental Regulation
Northwest District Office
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

Champion International Corporation

TRS Construction Permit:

Kamyr™ Continuous Digester System

Batch Digester System

No. 1 Multiple Effect Evaporator System

No. 2 Multiple Effect Evaporator System

Condensate Stripper System

Brown Stock Diffusion Washer System

Lime Kiln

Permit No. AC 17-142004

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

March 3, 1989

I. Project Description

A. Applicant

Champion International Corporation
Post Office Box 87
Cantonment, Florida 32533-0087

B. Project and Location

The applicant proposes to make physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, the brown stock diffusion washer system (including filtrate tank), and the lime kiln. The proposal includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to enable the applicant to reduce the venting of uncontrolled TRS emissions.

The Standard Industrial Classification Codes are Major Group 26, Industry 2611, Pulp Mills, and Industry 2621, Paper Mills. The Source Classification Codes are 3-07-001-01, digester relief and blow tank, for the batch digester system (including the single blow heat accumulator) and 3-07-001-07, turpentine condenser, also for the batch digester system; 3-07-001-01, digester relief and blow tank, for the Kamyr™ continuous digester system and 3-07-001-07, turpentine condenser, also for the Kamyr™ continuous digester system; 3-07-001-03, multi-effect evaporator, for the No. 1 multiple effect evaporator system (including the two associated concentrators) and the No. 2 multiple effect evaporator system (including the associated concentrator); 3-07-001-06, lime kiln, for the lime kiln; 3-07-001-99, other not classified, for the condensate stripper system which is an integral part of the Kamyr™ continuous digester system; and 3-07-001-02, washers/screens, for the brown stock diffusion washer system.

The projects are to located at the kraft pulp mill owned by Champion International, 375 Muscogee Road, Cantonment, Escambia County, Florida. The universal transverse mercator (UTM) coordinates of the project are Zone 16, 469.0 km East, and 3385.8 km North.

The application was received on November 13, 1987 and the Department decided to issue the proposed permit on January 18, 1989.

C. Project Description and Controls

The kraft pulping process utilizes large batch or continuous plug flow reactor vessels called digesters. These reactor vessels react wood chips with chemicals under conditions of elevated temperature and pressure to remove lignin. The lignin binds the cellulose fibers in the wood chips together. The reaction process results in the release of vapors containing steam, total reduced sulfur (TRS), turpentine, and other compounds to the atmosphere. These vapors may be emitted to the atmosphere directly or through a turpentine condenser depending on the type of wood being processed. After the reaction process is completed the contents of the digester are released to an appurtenance known as a blow tank. [Note: Champion's Kamyr™ digester system is unusual because pulp is blown directly into a brown stock diffusion washer system instead of a blow tank.] This reaction results in the release of vapors or gases which contain TRS, methanol, varying amounts of steam and other compounds. The blow gases from a continuous digester contain little or no steam. Since the blow gases from the batch digester system usually contain large quantities of steam, the gases are usually vented to the atmosphere through a blow heat recovery system. The blow heat recovery system recovers heat from and reduces the volume of digester blow gases. Some of the steam, methanol, and a small quantity of TRS condense in a large direct contact condenser called a blow heat accumulator.

The economics of the kraft pulping process are heavily dependent upon the recovery and reuse of the reaction chemicals. The spent chemical solution is separated from the pulp and piped to the chemical recovery system. The spent chemical solution contains 12-14 percent solids and consists of water, reaction chemicals, organic material, and dissolved TRS gases. This solution is known as black liquor. The heat content of the organic materials is recovered as steam in a recovery furnace and the reaction chemicals are recovered as a smelt in the base of the recovery furnace. In order to accomplish this the solids content of the black liquor must be elevated to about 65 percent.

The solids content of the black liquor is increased by evaporating the water in efficient vacuum evaporator sets known as multiple effect evaporators. Concentration of the black liquor to 50 percent solids is usually accomplished under conditions of natural circulation. Elevation of the black liquor solids content to about 65 percent is then accomplished in an additional stage of multiple effect evaporation under conditions of forced flow. The gases released during the evaporation process contain TRS.

The chemicals that are recovered as a smelt in the base of the recovery furnace are permitted to flow into a smelt dissolving tank. In the smelt dissolving tank, the recovered chemicals are mixed with water and weak wash to form green liquor. The green liquor is then treated with lime in the causticizing system to convert it into the original cooking liquor. A lime kiln is used to calcine the lime mud back into lime for the continued treatment of additional green liquor.

On March 21, 1985, the Department adopted regulations requiring the pulp and paper industry to control odorous emissions of TRS from digester systems, multiple effect evaporator systems, condensate strippers, lime kilns, and other sources. These regulations were adopted pursuant to the requirements of Section 111(d) of the Clean Air Act and 40 CFR 60 Subpart B. The applicant's project is part of a program to comply with these regulations.

The TRS emissions from the batch digester system, the No. 1 multiple effect evaporator system, the NSPS Kamyr™ continuous digester system, the brown stock diffusion washer system, the NSPS condensate stripper system, and the NSPS No. 2 multiple effect evaporator system are vented to a NCG system and transported to the lime kiln. The NCG system is equipped with white liquor scrubbers for the removal of certain TRS constituents from the gas stream prior to the lime kiln. The remaining TRS constituents are incinerated in the lime kiln. The NCG system for the batch digester system and the No. 1 multiple effect evaporator system was originally installed in 1974 pursuant to construction permit Nos. AC-506 and AC-509. The referenced NSPS sources and associated NCG system were installed in 1981 pursuant to construction permit No. AC 17-21829 and federal permit PSD-FL-029.

The applicant proposes to make physical changes to the noncondensable gas collection and handling system for the Kamyr™ continuous digester system, the batch digester system, the No. 1 and No. 2 multiple effect evaporator systems, the condensate stripper system, the brown stock diffusion washer system, and the lime kiln. The changes include: (1) The replacement of the batch digester primary blow heat condenser recirculation valve; (2) Installation of a batch digester secondary condenser pump; (3) Replacement of process control instrumentation in the batch digester blow heat recovery system; (4) Addition of a vapor separator between the batch digester blow tanks and the primary condenser that will be sized to allow simultaneous blows; (5) Addition of two new bleach plant heat exchangers; (6) Addition of a new demineralized water heat exchanger; (7) Removal of the blow heat cooling tower; (8) Addition of a fiber filter ahead of the condensate stripper; (9) Replacement of the existing NCG transport system, fan, and white liquor scrubber for the batch digesters with a new stainless steel transport system and steam jet ejector; (10) Addition of new NCG transport system piping and steam jet ejector for the Kamyr™ continuous digester system and brown stock diffusion washer system; (11) Removal of the existing white liquor scrubber for the multiple effect evaporators and the addition of NCG transport system piping to vent the multiple effect evaporator gases to the NCG system for the Kamyr™ continuous digester and brown stock diffusion washer system; and, (12) Replacement of the lime kiln rectifier burner to allow the injection of gases from the NCG transport systems for the Kamyr™ continuous and batch digester systems, as well as the rectifier gases into the lime kiln for incineration. The applicant indicates that the proposed changes will make it possible to incinerate nearly 100% of the NCGs in the lime kiln. The applicant indicates that about 95% of the NCGs are presently incinerated in the lime kiln.

The first four physical changes to the batch digester system are expected to minimize the volume of noncondensable gases vented to the NCG system. The proposed equipment will be sized to allow the NCG system to simultaneously handle a blow from each of the two banks of six digesters. Upon completion of the physical changes, the NCG system should be capable of handling as many as five batch digester blows an hour for a two hour period. The next three changes (not specifically required by the state TRS regulations) enable the applicant to recover and utilize additional heat, reduce the release of uncontrolled TRS and VOC emissions to the air from the waste water treatment system and the biological oxygen demand (BOD) of the waste water discharges, recover additional energy in the form of methanol, and recover additional turpentine. The applicant states that the remainder of the changes will improve the safety and operation of the affected sources and associated emission control system.

The applicant states that none of the changes will increase either the operation rate or the capacity of the mill. The applicant states that the project will not result in any PSD significant net emission increases or decreases. The applicant expects that there will be a slight decrease in TRS emissions and a slight increase (less than one ton per year) in SO_2 emissions.

II. Rule Applicability

The Champion International Corporation's Cantonment mill is a major facility pursuant to Florida Administrative Code (F.A.C.) Rule 17-2.100(111) [Definitions-Major Facility]. The facility is a kraft pulp mill which is one of the 28 major facility categories listed in Table 500-1 of F.A.C. Rule 17-2.500 [Prevention of Significant Deterioration].

Based on the applicant's statements, the Department presently does not believe that the proposed project is subject to the preconstruction review requirements of F.A.C. Rule 17-2.500(5) [PSD-Preconstruction Review Requirements]. The Department has relied upon the applicant's presentation that: (1) The elements of the proposed project are necessary to comply with the TRS regulations adopted on March 21, 1985; and, (2) There will not be a significant increase in mass emissions of any pollutant listed in Table 500-2 of F.A.C. Chapter 17-2.500 [PSD]. Please note that emission changes strictly associated with compliance may consume or expand increment, but do not necessarily require a full PSD review. The applicant proposes to determine whether a significant net emissions increase for SO_2 has occurred on the basis of before and after emission testing.

Pursuant to the definitions in F.A.C. Rule 17-2.100 [Definitions] the proposed project includes the following permitted sources. The batch digester system, pursuant to F.A.C. Rule 17-2.100(59) [Definitions-Digester System], includes each of 12 individual digester systems as a source. The turpentine condenser system, the blow tanks, the blow heat accumulator, etc. are considered components of each associated source. The Department is not certain whether the blow heat cooling tower should be considered as part of the batch digester system. The Kamyr™ continuous digester system, pursuant to F.A.C. Rule 17-2.100(59) [Definitions-Digester System] and 40 CFR 60.281(d) [Federal NSPS-Kraft Pulp Mills], includes the Kamyr™ digester as a source. The steaming vessel, flash tanks, turpentine condenser system, etc. are considered components of the source. The brown stock diffusion washer system is an independent source through which the blow emissions from the Kamyr™ continuous digester system are vented. The condensate stripper system is a source pursuant to F.A.C. Rule 17-2.100(49) [Definitions-Condensate Stripper System] and 40 CFR 60.281(o)

[Federal NSPS-Kraft Pulp Mills]. The No. 1 multiple effect evaporator system, pursuant to F.A.C. Rule 17-2.100(120) [Definitions-Multiple Effect Evaporator System], includes the six evaporation effects, two concentrators, hotwell, and other associated components of the source. The No. 2 multiple effect evaporator system, pursuant to F.A.C. Rule 17-2.100(120) [Definitions-Multiple Effect Evaporator System] and 40 CFR 60.281(f) [Federal NSPS-Kraft Pulp Mills], includes the six evaporation effects (counting concentrator), the condenser, and other associated components. The lime kiln is a source pursuant to F.A.C. Rule 17-2.100(103) [Definitions-Lime Kiln] and a control device pursuant to F.A.C. Rule 17-2.100(10) [Definitions-Air Pollution Control Equipment].

Based on the information supplied by the applicant, the following emission limiting standards are applicable. The TRS emissions from the batch digester system and the No. 1 multiple effect evaporator system, are subject to the incineration provisions of F.A.C. Rule 17-2.100(4)(c)1.a. [Specific Source Emission Limiting Standards-Kraft (Sulfate) Pulp Mills-TRS-Digester Systems, etc.]. The TRS emissions from the Kamyr™ continuous digester system, the condensate stripper system, and the No. 2 multiple effect evaporator system are subject to the incineration provisions of 40 CFR 60.283(a)(1)(iii) [Federal NSPS-Kraft Pulp Mills]. The noncondensable gases vented to the lime kiln shall be subjected to a temperature of at least 1200°F for 0.5 second. The TRS emissions from the lime kiln are subject to the provisions of F.A.C. Rule 17-2.600(4)(c)5. [Specific Source Emission Limiting Standards-Kraft (Sulfate) Pulp Mills-TRS-Lime Kilns or Calciners]. The TRS emissions from the lime kiln shall not exceed 20 ppmv on a dry basis corrected to standard conditions at 10% oxygen as a 12-hour average. Emissions from the brown stock diffusion washer system alone are no longer subject to the federal NSPS, but the emissions still must be controlled because the blow emissions from the Kamyr™ continuous digester system are vented through the brown stock diffusion washer system.

Pursuant to F.A.C. Rules 17-2.500(1) [PSD-General Prohibitions], 17-2.520 [Sources not Subject to PSD or Nonattainment Requirements], and 17-4.070(3) [Standards of Issuing or Denying Permits] the Department has placed limitations on the total mass emissions from the lime kiln and the operation rates of the affected sources. The limitations on operation rates will also be used as one basis to establish proper operation and maintenance pursuant to F.A.C. Rule 17-2.710(4) [Continuous Monitoring Requirements-Quarterly Reporting Requirements]. These limitations are based on the maximum hourly operation rates supplied by the applicant.

The operation rates proposed by the applicant appear to be different from those included in PSD-FL-029, but the applicant indicates that this is not the case. The maximum operation rates are intended to more clearly and realistically reflect the actual capability of the equipment as it has existed since installation. The applicant has stated that, "None of the proposed changes will result in a production increase. While provisions are being installed to allow simultaneous blows, this is only to allow flexibility in operations. Production capacity of the mill will not change, and in fact, is limited by other equipment, specifically the recovery boilers." It is also the Department's intent to correct some minor technical errors and discrepancies presently found in PSD-FL-029, in order to more clearly reflect the permitted sources.

It is usually the practice of the Department to assign individual mass emission limitations to each regulated source. In this case, an aggregate total for TRS was assigned. The applicant was unable to provide the information needed for the Department to follow its normal practice of assigning a specific individual mass emission limit to each source at this time. Individual limitations will be assigned on the basis testing before and after any proposed future changes to these permitted sources that have not been authorized by these permits.

The applicant is required to install a device to continuously monitor, record, and report the TRS emissions from the lime kiln pursuant to the applicable provisions of F.A.C. Rule 17-2.710 [Continuous Monitoring Requirements].

The applicant's proposed project will also be subject to the applicable provisions of F.A.C. Rules 17-2.240 [Circumvention], 17-2.250 [Excess Emissions], 17-2.600(4)(c)1.c. [Specific Source Emission Limiting Standards-Kraft (Sulfate) Pulp Mills and Tall Oil Plants-TRS-Digester Systems, etc.], and 17-4.130 [Plant Operation Problems]. When the lime kiln is out-of-service the applicant proposes to vent NCG emissions to the atmosphere. The Department will act on the venting proposal at the time the required contingency plan is submitted.

The applicant is also required to install source sampling facilities on the lime kiln and perform source testing for TRS, particulate, and SO_2 in accordance with the provisions of F.A.C. Rule 17-2.700 [Stationary Point Source Emissions Test Procedures]. The required source testing for SO_2 emissions consists of one-time only pre- and post compliance testing in order to determine if the incineration of TRS will result in increased SO_2 emissions that would trigger other requirements of

F.A.C. Chapter 17-2 [Air Pollution]. The continuous monitoring equipment is to be certified in accordance with the applicable provisions of F.A.C. Rule 17-2.710 [Continuous Monitoring Requirements].

Pursuant to the applicable provisions of F.A.C. Rules 17-2.960 [Compliance Schedules for Specific Source Emission Limiting Standards] and 17-2.971 [Compliance Schedules for Continuous Monitoring Requirements] final compliance is to be achieved by May 12, 1989.

III. Summary of Emissions and Air Quality Analysis

A. Summary of Emissions

Based on the information supplied by the applicant, the Department expects the following changes in emissions to occur. These rates will be used in future reviews to determine PSD applicability.

Pollutant	Pre-Compliance		Post Compliance		Change	
	lbs./hr.	T/Y	lbs./hr.	T/Y	lbs./hr.	T/Y
Particulate	26.10	114.3	26.10	114.3	0	0
TRS	4.39	19.2	4.39	19.2	0	0
SO_2	TO BE DETERMINED BY TEST					
NO_x	35.08	153.7	35.08	153.7	0	0
CO	4.44	19.4	4.44	19.4	0	0
VOC	5.35	23.4	5.35	23.4	0	0

The applicant has agreed to perform one-time only pre- and post compliance testing for SO_2 emissions in order to determine if the incineration of TRS will result in increased SO_2 emissions. If mass emissions of SO_2 increase, then additional requirements of F.A.C. Chapter 17-2 [Air Pollution] may apply. The applicant estimates the maximum increase in emissions to be about 1 T/Y of SO_2.

B. Air Quality

Since the applicant predicted that there will not be any increase in mass emissions above the significance levels listed in Table 500-2 of F.A.C. Rule 17-2.500 [PSD], an ambient air quality analysis was not required.

IV. Conclusion

The information supplied by the applicant indicates that the proposed project will not jeopardize the maintenance of ambient air quality standards. The Department proposes to issue the subject permit with the appropriate general and specific conditions pursuant to F.A.C. Chapters 17-2 and 17-4.

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:
Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533

Permit Number: AC 17-142004
Expiration Date: Sept. 24, 1989
County: Escambia
Latitude/Longitude: 30°36'20"
87°19'26"
Project: Construction of Physical Changes to the Batch Digester System, Kamyr™ Digester System, Brown Stock Diffusion Washer System, Condensate Stripper System, Nos. 1 and 2 Multiple Effect Evaporator Systems, and Lime Kiln

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 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:

The construction of physical changes to the Kamyr™ continuous digester system (consisting of a Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc.), the batch digester system (consisting of 12-2700 cu. ft. batch digesters, 2 blow tanks, a blow heat accumulator and a turpentine condenser system), the No. 1 multiple effect evaporator system (consisting of 6 evaporator effects, 2 concentrators, hotwell etc.), and No. 2 multiple effect evaporator system (consisting of 6 evaporation effects including the concentrator, condenser, etc.), the condensate stripper system, a brown stock diffusion washer system (consisting of diffusion washer, washer filtrate tank, etc.), and the lime kiln. The proposal includes a number of changes to the presently installed noncondensable gas (NCG) systems for the above sources, the removal of blow heat cooling towers, the removal of white liquor scrubbers, and the installation of a new rectifier burner in the lime kiln. The purpose of the changes is to enable the applicant to reduce the venting of uncontrolled TRS emissions.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Sept. 24, 1989

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

Attachments are listed below:

1. Permit application for noncondensable gas (NCG) handling system (batch digester system, Kamyr™ digester system, condensate stripper system, Nos. 1 and 2 multiple effect evaporator systems, and lime kiln), received November 13, 1987.

2. C. H. Fancy's letter to T. P. Crane, dated December 11, 1987.

3. D. T. Arceneaux's letter to C. H. Fancy, dated September 19, 1988, received October 14, 1988.

4. C. H. Fancy's letter to D. T. Arceneaux, dated November 10, 1988.

5. D. T. Arceneaux's letter to C. H. Fancy, dated December 19, 1988, received December 21, 1988.

6. D. T. Arceneaux's letter to M. D. Harley, dated January 13, 1989, received January 18, 1989.

7. Technical Evaluation and Preliminary Determination dated March 3, 1989.

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,

GENERAL CONDITIONS:

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 therefor 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.

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 non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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 non-compliance of the permitted activity until the transfer is approved by the Department.

GENERAL CONDITIONS:

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)
(X) Compliance with New Source Performance Standards (Kamyr™ digester system, condensate stripper system, No. 2 multiple effect evaporator system)

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.

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.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Sept. 24, 1989

GENERAL CONDITIONS:

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 non-NSPS batch digester system, NSPS Kamyr™ digester system, NSPS condensate stripper system, non-NSPS No. 1 multiple effect evaporator system, NSPS No. 2 multiple effect evaporator system, and the non-NSPS lime kiln are permitted to operate continuously (i.e., 8760 hrs./yr.).

2. The following operation rates shall not be exceeded. These operation rates shall be continuously monitored and recorded.

a. For testing purposes and NSPS applicability purposes, the maximum production rate of the batch digester system shall be 45 tons of air dry unbleached pulp (TADUP)/hr. and 864 TADUP/day. Tests for compliance shall be conducted with the lime kiln operating at 90-100% of the maximum lime kiln operating rate and with the batch digester system operating as near the maximum production rate as possible, but in no case shall the operation rate of the digesters be less than 85% of the maximum operation rate when testing. For PSD purposes the maximum operation rate shall be 756 TADUP/day as a rolling 30-day average.

b. For testing purposes and NSPS applicability purposes, the maximum production rate of the Kamyr™ digester system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day as a rolling 30-day average.

c. For testing purposes and NSPS applicability purposes, the maximum production rate of the brown stock diffusion washer system shall be 40 TADUP/hr. and 864 TADUP/day. For PSD purposes the maximum operation rate shall be 750 TADUP/day as a rolling 30-day average.

d. The maximum operation rate of the condensate stripper shall not exceed 215,000 lbs./hr. (430 gals./min.) of liquid feed to the condensate stripper.

SPECIFIC CONDITIONS:

e. The maximum operation rate of the No. 1 multiple effect evaporator system shall not exceed 181,000 lbs. of dry black liquor solids (BLS)/hr. at the concentrator outlet.

f. The maximum operation rate of the No. 2 multiple effect evaporator system shall not exceed 97,000 lbs. of dry BLS/hr. at the concentrator outlet.

g. The maximum operation rate of the lime kiln shall not exceed 14.5 tons/hr. of calcium oxide plus inerts, and is based on an input of 48,857 lbs./hr. of lime mud (calcium oxide plus 15% inerts).

3. The maximum rate of natural gas firing in the lime kiln shall not exceed 130,000 dry standard cubic feet (60°F and 14.7 psia)/hr. during normal operations including maximum production. A maximum firing rate of 216,000 dry standard cubic feet (60°F and 14.7 psia)/hr. shall be allowed for heat up after a cold shutdown or during unusual conditions. The maximum sulfur content of the natural gas shall not exceed 0.3% by weight (1 grain/100 dry standard cubic feet).

4. The emissions from the batch digester system (consisting of 12 batch digester systems); the Kamyr™ digester system; the condensate stripper system; the No. 1 multiple effect evaporator system; and, the No. 2 multiple effect evaporator system shall be collected and incinerated in the lime kiln. TRS emissions from Vent I (diffusion washer) and Vent II (washer filtrate tank) of the brown stock diffusion washer system associated with the Kamyr™ digester system shall also be collected and incinerated in the lime kiln. All TRS gases burned in the lime kiln shall be subjected to a minimum temperature of 1200°F for at least 0.5 second. TRS emissions shall be determined by EPA Methods 1, 2, 3, and either 16 or 16A (40 CFR 60 revised as of July 1, 1987).

Note: Each batch digester system includes the blow tank(s), blow heat accumulator, turpentine condenser system, etc. The Kamyr™ digester system includes the Kamyr™ digester, steaming vessel, two flash tanks, a turpentine condenser system, etc. The No. 1 multiple effect evaporator system includes 6 evaporator effects, 2 concentrators, a hotwell, etc. The brown stock diffusion washer system includes the diffusion washer, the washer filtrate tank, etc. The No. 2 multiple effect evaporator system includes 6 evaporation effects (counting the concentrator), condenser, etc. Actual mass emissions from each system shall be determined prior to and after any future changes, meaning those changes to the permitted systems not specifically authorized by these permits.

PERMITTEE:
Champion International Corp.

SPECIFIC CONDITIONS:

Permit Number: AC 17-142004

Expiration Date: Sept. 24, 1989

5. TRS emissions from the lime kiln shall not exceed 20 ppmv on a dry basis at standard conditions corrected to 10% oxygen as a 12-hour average. Mass TRS emissions from the lime kiln shall exceed neither 4.40 lbs./hr. nor 19.3 tons/yr. The mass TRS emissions are the maximum permitted aggregate total mass emissions allowed for the permitted sources. TRS emissions shall be determined by EPA Methods 1, 2, 3, and either 16 or 16A.

6. Particulate emissions from the lime kiln shall exceed neither the limits allowed by the process weight table in F.A.C. Rule 17-2.610, nor 26.1 lbs./hr. nor 19.3 tons/yr. Particulate emissions shall be determined by EPA Methods 1, 2, 3, and 5 (40 CFR 60 revised as of July 1, 1987).

7. Visible emissions from the lime kiln shall be limited to 20 percent opacity. If the Department observes visible emissions in excess of 20 percent opacity beyond the dissipated steam plume, it shall be considered good reason to believe that the applicable mass emission limiting standard is in danger of being violated. The permittee shall be required to run a special compliance test in accordance with F.A.C. Rule 17-2.700(2)(b). Such test shall be conducted within 14 days after notification by the Department.

8. The lime kiln shall be equipped with a TRS continuous emission monitoring system pursuant to all applicable requirements of F.A.C. Rule 17-2.710 and 40 CFR 60. Excess emissions of TRS shall be reported and evaluated pursuant to the applicable requirements of F.A.C. Rule 17-2.710(4).

9. All excess emissions from the batch digester system, the Kamyr™ digester system, the condensate stripper system, the No. 1 multiple effect evaporator system, the No. 2 multiple effect evaporator system, the noncondensable gas handling (NCG) system, and the lime kiln shall be subject to the applicable requirements of F.A.C. Rules 17-2.240 [Circumvention], 17-2.250 [Excess Emissions], 17-2.600(4)(c)1.c. [Specific Source Emission Limiting Standards-Kraft (Sulfate) Pulp Mills and Tall Oil Plants-TRS-Digester Systems, etc.], and 17-4.130 [Plant Operation Problems]. The required contingency plan shall be submitted to the DER Northwest District office no later than June 11, 1989.

10. All continuous monitoring and recording systems shall be regularly calibrated and maintained in proper working condition pursuant to written procedures and schedules based on the recommendations of the instrument manufacturer.

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Sept. 24, 1989

SPECIFIC CONDITIONS:

11. The lime kiln shall be equipped with the point source sampling facilities required by F.A.C. Rule 17-2.700. Point source compliance testing shall be conducted with all sources operating at 90 to 100 percent of operation rates allowed by Specific Conditions Nos. 2 and 3. All point source emission tests shall be conducted using the applicable methods and procedures in F.A.C. Rule 17-2.700.

Note: For testing purposes, Specific Condition No. 2.a. allows the operation rate of the batch digester system to be as low as 85 percent of the maximum operation rate allowed by Specific Condition No. 2.a.

12. The permittee shall test the lime kiln for SO_2 emissions prior to and after the construction authorized in this permit. The purpose of the testing will be to establish the changes in SO_2 emissions for PSD tracking purposes. The tests shall be performed using EPA Method 6 in accordance with F.A.C. Rule 17-2.700(6)(b)6. or an alternate method approved by the Department in accordance with F.A.C. Rule 17-2.700. The testing required by this permit condition is on a one-time basis.

13. Initial compliance testing, certification, and calibration shall be completed not later than May 12, 1989. Compliance tests shall be conducted annually, thereafter. The compliance test reports shall include all of the information required by F.A.C. Rule 17-2.700(7). The test report shall be submitted within 30 days after completion of the testing. Notification of testing shall be furnished to the DER Northwest District office at least 15 days prior to the date that testing is to commence.

14. The permittee for good cause, may request that this construction permit be extended. Such request shall be submitted to the BAQM prior to 60 days before the expiration date of the permit (F.A.C. Rule 17-4.090).

15. The application for an operation permit must be submitted to the Northwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after the completion of compliance testing whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

PERMITTEE:
Champion International Corp.

Permit Number: AC 17-142004

Expiration Date: Sept. 24, 1989

SPECIFIC CONDITIONS:

16. The permanent source identification numbers assigned to the permitted sources are as follows:

10/17/0042/53	Batch Digester System.
10/17/0042/54	Kamyr™ Continuous Digester System, Condensate Stripper System, and Brown Stock Diffusion Washer System.
10/17/0042/55	No. 1 and No. 2 Multiple Effect Evaporator Systems.
10/17/0042/28	Lime Kiln.

Please cite the appropriate number on all test reports and other correspondence for each permitted point source.

Issued this ______ day
of ______________, 1989

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

____
Dale Twachtmann, Secretary

TO: File

FROM: Mike Harley

DATE: February 2, 1989

SUBJ: Champion International Corporation Construction Permit Application: Kamyr™ Digester System; Batch Digester System; Condensate Stripper System; No. 1 and No. 2 MEEs; and, Lime Kiln

On January 31, 1989, I spoke to Mr. David Arceneaux of Champion International Corporation about several issues relating to the above referenced permit. The conversation was a follow up to two previous conversations. In response to my questions, Mr. Arceneaux provided the following information:

1. The correct center-of-mill coordinates should be 30°36'20" N. latitude and 87°19'26" W. longitude. The correct coordinates for the center of the lime kiln stack should be 30°36'12" N. latitude and 87°19'14" W. longitude. The permit will probably include the center-of-mill coordinates.

2. The company has not measured the sulfur content of the methanol. The methanol is reported to have an unpleasant odor. So, the company has assumed that the methanol contains sulfur. The company believes that the sulfur content of the methanol is accounted for in the lime kiln emission factors that were furnished to the Department.

3. The company has not yet located information concerning the hydraulic design capacity of the condensate stripper.

4. The construction of the No. 1 and No. 2 recovery boilers was authorized by construction permits Nos. AC-505 and AC-510. The permits were issued in 1972 and construction of the sources was completed circa 1975.

5. The construction of the No. 1 multiple effect evaporator system was authorized as part of construction permits Nos. AC-505 and AC-510.

6. A noncondensable gas handling system to control the TRS emissions from the No. 1 mill batch digester systems, the No. 2 mill batch digester systems, and the No. 1 multiple effect evaporator was installed pursuant to construction permit No. AC-506. The permit was also issued in 1972 and the construction was completed circa 1975.

7. The above referenced construction permits were the result of a modernization program that responded to regulations adopted by the Department. The program resulted in the replacement of about 6 multiple effect evaporator systems, 6 recovery boilers, and 3 lime kilns.

8. The issuance of PSD-FL-0029 resulted in the construction of the following federal NSPS sources:

   (a) Kamyr™ digester system

   (b) Condensate stripper system

   (c) Diffusion washer system

   (d) No. 2 multiple effect evaporator system

   (e) Calciner

9. The company's Kamyr™ digester system is somewhat different from those we have encountered in other Florida mills. Champion's Kamyr™ digester system is not equipped with a blow tank. The pulp is blown directly from the Kamyr™ digester system (which like most Kamyr™ digester systems includes and internal washing stage) into the diffusion washer system. The diffusion washer system has 2 vents, one for the washer and one for the filtrate tank. The pulp goes from the diffusion washer system to the heavy stock chest, which is located below the diffusion washer system.

10. The maximum capacity of the mill is actually 1600 tons of air dry unbleached pulp (TADUP) per day and 1400 tons of air dry bleached pulp (TADBP) per day. The difference between the quantity of unbleached and bleached pulp is not the result of increased operation rates when producing unbleached pulp. The difference in the quantity of pulp is the result of shrinkage due to bleaching (i.e., bleaching removes certain constituents from the unbleached pulp). A

review of PSD-FL-0029 and the associated file indicate that it was the intent of the company, the Department, and the EPA to allow the company to produce 1600 TADUP/day and up to 1400 TADBP/day. The maximum operation rate of 1400 TADBP/day reinforces this conclusion.

11. The state and federal PSD review and permitting programs were just beginning when PSD-FL-0029 was issued. The lack of experience in crafting PSD permits resulted in federal and state permits for the affected sources that were not clearly written. The Department and the company have agreed to use the preparation of the subject TRS 111(d) permit as an opportunity to cleanup the previous permit.

12. The lime kiln exhaust gas flow (DSCFM) was reported at 5% O_2. He said that it is OK to correct the exhaust gas flow and the emissions to 10% O_2.

13. It was agreed that it would be appropriate to limit the sulfur content of the natural gas used in the lime kiln to 0.3% based on a maximum sulfur content of 1 grain per DSCFM and a specific gravity of 0.69.

14. The lime kiln is presently set up to burn only natural gas, rectifier gas (consisting of methanol vapors), and TRS.

15. The heat content of natural gas is 1.11 MMBtu/MCF.

16. One condition of PSD-FL-0029 requires the compliance testing to be conducted with the facility operating at the maximum production rate.

17. The design data containing the maximum capacity of the condensate stripper system had not been located by the company as of January 31.

The estimated pollutant emissions that were not quantified in the original application are:

Sulfur Dioxide:

To Be Determined By Test.

Carbon Monoxide (AP-42 p. 10.1-5, 10/86) :

From 1984 TRS 111(d) inventory-lime mud production rate

$$= 1100 \frac{\text{lbs. } CaCO_3}{\text{TADUP}}$$

Lime kiln operation rate as equivalent TADUP

$$=\left(\frac{48{,}857 \text{ lbs. } CaCO_3}{\text{hr.}}\right)\left(\frac{1 \text{ TADUP}}{1{,}100 \text{ lbs. } CaCO_3}\right)$$

$$=44.42\ \frac{\text{TADUP*}}{\text{hr.}}$$

lbs./hr.=(44.4 TADUP)(0.1 lb./TADUP)=**4.44**

TPY=(4.44 lbs./hr.)(4.38)=**19.4**

NO_x (TAPPI 1981 Environmental Conference p. 117) :

Lime Kiln 4A Oil (1.07 lb./~~MMBtu~~ TADUP) & Gas (0.79 lb./~~MMBtu~~ TADUP)
Only lime kiln for which both oil & gas emissions were available.

lbs./hr. (gas)=(0.79 lb./TADUP)(44.4 TADUP/hr.)=**35.08****

TPY (gas)=(35.08 lbs./hr.)(4.38)=**153.7****

VOC (TAPPI 1981 Environmental Conference p. 125) :

Lime Kiln C, After Scrubber (0.37 lb./T of CaO)

lbs./hr.=(14.46 T of CaO/hr.)(0.37 lb./T of CaO)=**5.35 as CH_4**

TPY=(5.35 lbs./hr.)(4.38)=**23.4 as CH_4**

TRS (Data Provided By The Applicant) :

$$\text{lbs./hr.}=(41{,}455 \text{ DSCFM})\left(\frac{20 \text{ parts}}{1{,}000{,}000}\right)\left(\frac{1 \text{ mole}}{385.55 \text{ DSCF}}\right)\left(\frac{34 \text{ lbs.}}{1 \text{ mole}}\right)\left(\frac{60 \text{ min.}}{1 \text{ hr.}}\right)$$

$$=4.39^{***}$$

TPY=(4.39 lbs./hr.)(4.38)=**19.2*****

It should be noted that there may ultimately be some small differences in the data used in these calculations and that found in the permit. The data used in these calculations reflects data contained in contained in correspondence and received by phone as of this date.

TO: File
DATE: February 2, 1989
PAGE: 5

*Alternative Calculation For Equivalent TADUP :
Compares favorably to the equivalent rate obtained using emission estimates that Champion obtained by using emission factors. Note: Copies of the calculations were not supplied so the Department elected to make the estimates.

That estimate is as follows:

$$\frac{\text{TADUP}}{\text{Yr.}}=(36\text{ T of }SO_2)\left(\frac{2{,}000\text{ lbs.}}{1\text{ T}}\right)\left(\frac{1\text{TADUP}}{0.2\text{ lb. }SO_2}\right)=360{,}000\ \frac{\text{TADUP}}{\text{Yr.}}$$

$$\frac{\text{TADUP}}{\text{hr.}}=\left(\frac{360{,}000\text{ TADUP}}{\text{Yr.}}\right)\left(\frac{1\text{ Yr.}}{350\text{ days}}\right)\left(\frac{1\text{ day}}{24\text{ hrs.}}\right)=\mathbf{42.86}\ \frac{\text{TADUP}}{\text{hr.}}\text{ or}$$

$$\mathbf{1{,}028.57}\ \frac{\text{TADUP}}{\text{Day}}$$

The estimated maximum operation rates of the lime kiln in terms of equivalent pulp production are close enough to reinforce the probable validity of the rate. On January 31, Mr. Arceneaux concurred with the apparent validity of the estimate.

**Alternative Calculation For NO_x (TAPPI 1981 Environmental Conference p. 117) :

Lime Kiln 4A Oil (0.34 lb./MMBtu) & Gas (0.31 lb./MMBtu) Only lime kiln for which both oil & gas emissions were available.

lbs./hr. (gas)=(0.31 lb./MMBtu)(130 MMBtu/hr.)=**40.30**

TPY (gas)=(0.31 lb./MMBtu)(130 MMBtu/hr.)(4.38)=**176.5**

***Alternative Calculation For TRS (40 CFR 60, Subpart BB):

$$(28{,}500\text{ DSCFM})\frac{(21-5)}{(21-10)}=\mathbf{41{,}455\ DSCFM\ @\ 10\%\ O_2}$$

lbs./hr.=(8.844 E-8 lb./DSCFM-ppm)(20 ppm)(41,455 DSCFM)

(60 min./hr.)=**4.40**

TPY=(4.40 lb./hr.)(4.38)=**19.3**

Tech Bulletin
No. 107

TABLE 4. NOx EMISSION RATE SUMMARY FOR LIME KILNS SAMPLED

Location & Fuel Type	Tons Pulp Per Day Mean	NOx (3) Hour Average Mean ($lb/10^6$ Btu)	(ng/J)	(lb/ton pulp)	NOx (3) Hour Average Range ($lb/10^6$ Btu)	(ng/J)	(lb/ton pulp)
1: Oil	360	0.85	365	2.1	0.75-0.99	325-425	1.8-2.4
2: Oil	735	0.16	65	0.4	0.07-0.28	30-120	0.2-0.7
3: Oil	350	0.16	70	0.4	0.08-0.21	35-90	0.2-0.5
4A: Oil	350	0.31	135	1.0	0.23-0.54	100-235	0.7-1.7
4B: Gas	350	0.29	125	0.7	0.19-0.39	85-165	0.7-1.3
5: Gas	430	0.78	335	2.6	0.34-1.12	150-485	1.1-3.7

82-08

concentrations in furnace flue gases and the limited amount of available data, these SO_2 emission factors were deliberately chosen to be in the upper part of the range of observed values. SO_2 emissions from supplemental oil burning in DCE furnaces were assumed to be negligible, while supplemental oil burning in NDCE furnaces resulted in 90% of the oil's sulfur content being emitted as SO_2.

NO_x emission factors for kraft recovery furnaces and lime kilns were based on NCASI measurements (8,9), with NO_x emission factors for supplemental fuel burning in recovery furnaces chosen to be the same as for power boilers. SO_2 emissions from lime kilns were estimated using a 0.2 lb. SO_2/ADTP emission factor.

TABLE 3 EMISSION FACTORS FOR KRAFT RECOVERY FURNACES AND LIME KILNS

	Emission Factors	
	SO_2	NO_x
Kraft Recovery Furnace		
DCE	4 lb/ADTP	1.8 lb/ADTP
NDCE	10 lb/ADTP	1.8 lb/ADTP
Supplemental oil	144S lb/10^3gal(1)	60 lb/10^3gal
Supplemental gas	0	300 lb/10^6ft^3
Lime Kiln	0.2 lb/ADTP	1.2 lb/ADTP

(1) Only for NDCE furnaces, where S is the fuel sulfur content in percent.

F. Emission Calculations for Sulfite and Neutral Sulfite Mills

Emissions of sulfur dioxide from the sulfite pulping process were calculated from estimates of average daily sulfite pulp production and an emission factor of 20 lb SO_2/ADTP, an emission rate which sulfite mills in Oregon and Washington are required to meet, and sulfite mills in other states are likely achieving. However, reported SO_2 emissions based on continuous monitoring or stack testing data were used if available. SO_2 emissions from stand alone neutral sulfite mills (not integrated with kraft production) were calculated from estimates of average daily neutral sulfite pulp production and an emission factor of 1 lb SO_2/ADTP. For both sulfite and neutral sulfite mills, no calculations of NO_x emissions were made.

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Cantonment, Florida 32533-0087
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Cantonment, FL
32533

file copy

Champion
Champion International Corporation

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JAN 18 1989
DER - BAQM

January 13, 1989

Mr. Michael D. Harley
Engineer
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Harley:

RE: File No. AC 17-142004

As we discussed by telephone today, I am sending you clarification of information submitted on December 19, 1988.

The stack gas flow for the lime kiln is best represented by the 28,500 SDCFM value and 5% oxygen. This is a more representative maximum flow rate than the ACFM value. In regard to natural gas fuel, the heat value of the natural gas we use averages 1100 BTU per cubic foot. The amount of natural gas used varies greatly, but is approximately 130,000 cubic feet per hour during maximum production. During heat up after a cold shutdown, or during unusual conditions, as much as 216,000 cubic feet per hour can be fired.

The permitted lime mud through-put is 48,857 pounds per hour. This is lime mud (calcium carbonate) plus approximately 15% inert material. The lime product (calcium oxide plus inerts) at this rate would be 347 tons per day.

The emission factors used in calculating lime kiln emissions are from NCASI, Technical Bulletin No. 107, and Special Report No. 82-08. Both of these are contained in AP-42 and EPA Emissions. Confirmation guide for major source categories.

FORM OF PAYMENT *

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214288697

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INTERNATIONAL STANDARD SERVICES *
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E Shippers Emery Account Number: 991260597

Date: 1/17/89 Origin: PNS Shipment Number: 214288697

From:
David T. Arceneaux
AMPION INTERNATIONAL
SCOGEE RD
NTONMENT FL
Canada ☐
Customer's Reference Numbers
Zip 32533

To:
Mr. Michael D. Harley, Engineer
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Buildingr
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Saturday Delivery ☐
Tariff Dest.
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Zip 32399

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Urgent Letter					1	

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Base Charge ______
At Destination ______
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Intl. Customs Value
Intl. Insurance

Total Transportation Charges

Other Charges ☐ OC- $

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By: Emery Representative.

Specific gravity of black liquor will vary with solids content and temperature. At 15% solids and 60^{o}F, the specific gravity is 1.074 or 8.95 pounds per gallon. Using this density, No. 2 evaporator can handle 181,000 pounds per hour, and No. 2 evaporator can handle 97,000 pounds per hour of black liquor solids. Together, these represent 6.67 million pounds of solids per day. This value is much greater than the design capacity of the recovery boilers. This is because the evaporators have a lower operational time and must then have the capacity to "catch-up". In addition, due to the extensive spill control program, the mill needs a higher evaporator capacity to handle reclaimed spilled material.

I hope that these clarifications are sufficient to address the questions you have. If I can be of any help, please call.

Sincerely,

David T. Arceneaux

David T. Arceneaux

DTA/hs

cc: Edwin Middleswart, FDER, Northwest District
Lamar Sarratt, P. E., MoDo Chemetics

copied: Mike Harley
CHF/BT

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

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Champion
Champion International Corporation

<u>OVERNIGHT EXPRESS -- EMERY</u>
SHIPPING NO. 214288659

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December 19, 1988

C. H. Fancy, P. E.
Deputy Bureau 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:

RE: File No. AC 17-142004

Enclosed is the additional information you requested in your letter dated November 10, 1988. Hopefully this will resolve the "certain other discrepancies" noted in your letter and help to quickly process the application.

If there are any further questions concerning this response, please contact me at (904) 968-4253.

Sincerely,

David Arceneaux

David Arceneaux
Supervisor
Environmental Control

DTA/cr

Attachments

cc: Edwin Middleswart, DER, Northwest District
Lamar Sarratt, P. E., MoDo Chemetics CHAMPION

copied: Mike Harley
CHF/BT

FORM OF PAYMENT *

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E	Shippers Emery Account Number: 191260597	Date: 12/29/83	Origin: PNS	Shipment Number: 214288659

From:	To:
DAVID ARCENEAUX	Mr. C. H. Fancy, Bureau Air Qual
MPION INTERNATIONAL	DER
	~~Twin Towers Office Building~~
JOGEE RD	2600 Blair Stone Road
ONMENT FL Canada ☐	Tallahassee, FL Canada ☐
Customer's Reference Numbers — Zip 32533	E Consignee's Emery Account No. — Zip 32399-2400

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By: Emery Representative.

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CONSIGNEE — PACKAGE C

CHAMPION INTERNATIONAL CORPORATION
CONSTRUCTION PERMIT APPLICATION
NON-CONDENSABLE GAS HANDLING SYSTEM
FILE No. AC 17-142004
Response to Incompleteness Letter (11/10/88)

1. The maximum daily capacity and operation rates are as follows:

UNIT	MAXIMUM CAPACITY	OPERATION RATE
KAMYR DIGESTER	864 tons air dried unbleached pulp per 24 hours	750 tons per day monthly average dried unbleached pulp
BATCH DIGESTER	96 blows per 24 hours	84 blows per day
NO. 1 EVAPORATOR	2250 gallon per minute @ 15% solids	Varies
NO. 2 EVAPORATOR	1200 gallons per minute @ 15% solids	Varies

2. The mill capacity is determined by the limiting mill process. For the Pensacola mill, the recovery boiler capacity is the limiting mill capacity. Both boilers are 800 tons per day B&W equivalent boilers. Therefore, maximum mill production is 1600 tons per day B&W equivalent pulp. The current mill operation rate is 1400 tons per day air dried bleached pulp which is the basis for the 1986 construction permit.

3. The lime kiln stack is 6.5 feet in diameter and 136 feet tall. The following maximum stack gas parameters are taken from stack test data from 1975 to present.

ACFM	57,400
SCDFM	28,500
Temperature (F)	180
Moisture (%)	46
Oxygen (%)	5

In terms of fuel, the lime kiln maximum gas flow rate is 216,000 cubic feet per hour. Normal operation is between 75,000 cubic feet per hour and 100,000 cubic feet per hour.

4. The lime kiln emissions will not be affected by this project. The lime kiln currently incinerates approximately 95% of the NCG gases and this project will allow nearly 100% incineration. Current lime kiln permit allows 26.1 #/hour particulate emissions. Tests run over the past several years range from 11 to 17 #/hour actual emissions. On a yearly basis, assuming 350 days of operation, this would represent a permit limit of 110 tons per year and an actual emission of 46 to 71 tons per year.

   Using data from 1975 through 1980, SO_x emissions range from 0.31 to 17.03 pounds per hour with an average of eighteen tests being 4.1 pounds per hour. This is 17 tons per year using 350 days. Using emission factors, Champion has estimated lime kiln emissions at 36 tons per year.

   Emission of TRS from the lime kiln averages approximately 10 ppm, which is about 1.8 pounds per hour or 7.6 tons per year. This data is from the CEM.

   Using emission factors NO_x emissions are estimated at 143 tons per year or 34 pounds per hour. There is no data or CO, VOC or separation of SO_x into SO_2 and SO_3.

   To repeat, this project will not measurably affect these emissions.

5. See question #3.

P 274 007 500

RECEIPT FOR CERTIFIED MAIL

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

★ U.S.G.P.O. 1985-480-794

Sent to Mr. David T. Arceneaux	
Street and No. P. O. Box 87	
P.O., State and ZIP Code Cantonment, FL 32533-0087	
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: 11-10-88 Permit: AC 17-142004	

PS Form 3800, June 1985

● **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. David T. Arceneaux
Champion International Corp.
P. O. Box 87
Cantonment, FL 32533-0087

4. Article Number
P 274 007 500

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X Gerry Strong

7. Date of Delivery
14 NOV 88

8. Addressee's Address *(ONLY if requested and fee paid)*

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

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

November 10, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David T. Arceneaux
Supervisor
Environmental Control
Champion International Corporation
Post Office Box 87
Cantonment, Florida 32533-0087

Dear Mr. Arceneaux:

RE: Construction Permit Application to Make Changes to the Noncondensable Gas Handling System for TRS Sources - File No. AC 17-142004

The Department received your response to our incompleteness letter on October 14, 1988. We have reviewed your response and pursuant to our discussions of November 7 and 9 find that additional information is needed in order to issue an appropriate and valid permit. This information includes:

1. The data needed to determine the maximum capacity and operation rates of the sources included in the permit applications.

2. The data needed to determine the maximum capacity and operation rate of the mill.

3. The maximum stack gas flow parameters for the lime kiln including ACFM, SDCFM, gas temperature, moisture content, oxygen content, and gas flow rate. Please include the stack height of the lime kiln.

4. The proposed mass emission rates of TRS and particulate matter from the lime kiln in lbs/hr and tons/yr. Please include estimated emission rates for SO_2, CO, NO_x, VOC, and SO_3 from the lime kiln in lbs/hr and tons/yr.

5. The maximum fuel and heat input parameters for the lime kiln.

Pursuant to our telecon of November 9, 1988, we believe this incompleteness letter will also provide us with the opportunity to resolve certain other discrepancies. We welcome this opportunity to work with you. If you have any questions or wish to meet with us, please call Bill Thomas or Mike Harley at (904) 488-1344, or write to me at the above address.

Sincerely,

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

CHF/mdh

cc: Edwin Middleswart
Betsy Hewitt
Lamar Sarratt, P.E.

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

Airbill # 214288589
10-13-88
Cantonment, FL

file copy

RECEIVED
DER - MAIL ROOM
1988 OCT 14 PM 1:15

Champion
Champion International Corporation

OVERNIGHT EXPRESS -- EMERY
SHIPPING NO. 214288589

Mike Harley
has blueprints
+ large drawings

September 19, 1988

C. H. Fancy, P.E.
Deputy Bureau 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:

RE: File No. AC 17-142004

Champion has reviewed the incompleteness letter received on December 14, 1987, and has met with Bill Thomas and Mike Harley to discuss the requested additional information. Attached are specific responses to each question. Champion believes that these responses are adequate so that the Department can have "reasonable assurance" that the proposed modification will meet Florida regulations. However, if there are any outstanding questions or concerns, Champion is willing to resolve them immediately in order to process this application.

If there are any questions concerning this response or the original application, please contact me at (904) 968-4253.

Sincerely,

David T. Arceneaux
Supervisor
Environmental Control

DTA/cr

Attachments

cc: Edwin Middleswart, DER, Northwest District
Lamar Sarratt, P.E., MoDo-Chemetics

copied: Mike Harley
CHF/BT

EMERY WORLDWIDE

214288589 9

FORM OF PAYMENT *

CASH ☐ GBL CBL ☐ FCCOD ☐

PPD ☑ COL ☐ OTH ☐ COMAT ☐

E Shippers Emery Account Number: 991260597

UNITED STATES / CANADA — STANDARD SERVICES *

Same Day ☐ Other ☐
Next Morning ☒ Metro ☐
Second Morning ☐ ☐

INTERNATIONAL — STANDARD SERVICES *

Courier Express ☐ Business Documents ☐
Air Cargo Service ☐ Customs Clearance ☐
Air Economy Service ☐ Delivery ☐

Date	Origin	Shipment Number
10/13/88	PNS	214288589

RECEIVED OCT 14 1988 DER-BAQM

From:
David T. Arceneaux
CHAMPION INTERNATIONAL
MUSCOGEE RD
CANTONMENT FL
Canada ☐
Customer's Reference Numbers
Zip 32533

To:
Mr. C. H. Fancy, Dep. Bureau Chi
Bureau of Air Quality Management
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee FL 32399-2400

Saturday Delivery ☐ Hold at Airport ☐ Canada ☐

Tariff Dest. Gateway

Check to Shipper $

Emery will collect consignee's check made payable only to the shipper for the value of the goods in the amount shown above.

E Consignee's Emery Account No. Zip

Description and Marks	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
Printed Material						

TODSR ☐ Haz Mat ☐ Edit ☐ A B C D E F G H I J K

1 2 3 4 5 6 7 8 9 0 1 2

Envelope 9X12 ☒ Pack 12X15 ☒

32399 N

Terms and Conditions on Back

Shipper's Signature X

International Charges	Comm. Code	Third party Emery Account Number mandatory for Third party billing.	E Third Party Emery Account No.
Free Domicile ☐			

At Origin
Base Charge
At Destination
TOTAL

Intl. Customs Value | Intl. Insurance

Total Transportation Charges | Other Charges OC- ☐ $

Rec'd By Emery | Time Received 1300 | Date Received 10/13/88

Goods Rec'd At: Shippers Door ☑ Drop Box ☐ A Emery Terminal ☐ Carrier Advance ☐ B

By: Emery Representative.

Multiple Shpts. / Drop Box
1 2 3 4 5 6
7 8 9 0 1 2
Over 32 →

Printing and Writing Papers
375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

^088

RECEIVED
DER - MAIL ROOM
1988 OCT 14 PM 1:15

Champion
Champion International Corporation

OVERNIGHT EXPRESS -- EMERY
SHIPPING NO. 214288589

September 19, 1988

C. H. Fancy, P.E.
Deputy Bureau 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:

RE: File No. AC 17-142004

Champion has reviewed the incompleteness letter received on December 14, 1987, and has met with Bill Thomas and Mike Harley to discuss the requested additional information. Attached are specific responses to each question. Champion believes that these responses are adequate so that the Department can have "reasonable assurance" that the proposed modification will meet Florida regulations. However, if there are any outstanding questions or concerns, Champion is willing to resolve them immediately in order to process this application.

If there are any questions concerning this response or the original application, please contact me at (904) 968-4253.

Sincerely,

David T. Arceneaux
Supervisor
Environmental Control

DTA/cr

Attachments

1031

cc: Edwin Middleswart, DER, Northwest District
Lamar Sarratt, P.E., MoDo-Chemetics

0088

Champion
Champion International Corporation

Knightsbridge Hamilton, Ohio 45020

13-1
420

No. 426849

Pay to the Order of
Florida Dept. of Environmental Regulation
160 Governmental Center
Pensacola, FL 32501

Date: 02/23/88 Check No. 426849

PAY ** FIVE HUNDRED AND 00/100

Pay the amount of ****500.00****

The First National Bank
Cincinnati, Ohio

Frank Kreisel 249

[redacted] [redacted] [redacted]

Champion
Champion International Corporation

Knightsbridge Hamilton, Ohio 45020

Vendor No.	Division	Date	Check Total
F01608037	Printing & Writing Papers	02/23/88	**500.00**

F

The attached check is for detail listed below. Detach before presenting for payment

No. 426849

Location	Invoice Date	Invoice No.	Invoice Amount	Discount or Other Deductions	Net Amount
5022	02/23/88	022388	$500.00		$500.00

CHAMPION INTERNATIONAL CORPORATION
CONSTRUCTION PERMIT APPLICATION
NON-CONDENSABLE GAS HANDLING SYSTEM
FILE No. AC 17-142004
Responses to Incompleteness Letter (12/11/87)

1. According to 17-4.050(4)(a)5, the application fee for a construction permit is $100.00 for a source having potential emissions of less than 25 tons per year. The term "potential emissions," according to 17-2.100(148) is the maximum emissions after controls. Therefore, the application fee should be calculated on TRS emissions after incineration. Since the TRS rules do not allow additional emissions from the lime kiln due to NCG incineration, then controlled emissions are less than 25 tons per year.

   The fee should have been applied to each source connected to the NCG system, as well as the control device. This was an oversight on Champion's part. Enclosed is a check for $500.00.

2. All changes listed in Attachment II:A will be made. The first four changes are to improve blow heat control on the batch digesters to minimize volume of non-condensable gases, and thus eliminate venting. The next two changes are to utilize the recovered heat. The remaining changes are for safety and operational improvements. The net effect of these changes will be to eliminate uncontrolled venting.

   None of the changes will result in a production increase. While provisions are being installed to allow simultaneous blows, this is only to allow flexibility in operations. Production capacity of the mill will not change, and in fact, is limited by other equipment, specifically the recovery boilers.

   Included in the changes is the removal of the blow heat cooling tower, and recovery of the blow heat through heat exchangers. While not required by the regulations, Champion believes that the control of blow heat condensate will have benefit in terms of TRS emissions and BOD reduction.

   As part of this project, Champion will remove all white liquor scrubbers from the system. These scrubbers are difficult to maintain and do not remove any significant quantity of TRS. The removal of these scrubbers will have no impact on NCG system operations.

3. The condensate stripper system is an integral part of the Kamyr digester. This system is designed to remove BOD, and was not installed as an odor control device. The function of the stripper and associated equipment is to remove various organics from contaminated condensate. The removed material is separated into three components: a turpentine oil, a methanol-rich condensate and non-condensable gases. The turpentine oil is separated from the methanol-rich condensate and combined with mill turpentine. The foul oil tanks that originally were used to feed the turpentine oil for incineration in the calciner is no longer in use. The methanol-rich condensate is concentrated through a rectifier column which generates an organic-steam vapor mixture. This mixture is burned in the lime kiln through a rectifier burner. The non-condensable gases are collected in the NCG collection system and also burned in the lime kiln.

4. While the application fee was incorrect (see question 1), the individual sources were described in the original application. In addition, this application is not for a new source, but for a modification of existing sources, all of which are fully described in current Department permits. Attached for completeness is a copy of the interim permit application and the interim permit.

5. Figure 3 of the original application was intended to be the required USGS topographic map. However, that figure was too small. Attached is Figure 3A, which is an updated USGS maps.

6. The pulp generated from wood in the process depends on many factors, including wood type, chip age, cooking conditions (temperature, time, alkali charge), etc. These factors are all lumped together in pulp yield calculations. As a general rule, one ton of wet chips will yield 450 to 475 pounds of air dried (10% moisture) brown pulp. In order to cook wood, it takes approximately 225 gallons of cooking liquor per ton of wet wood. Black liquor solids generated vary by process condition, wood species, and other factors. For this application, the number used was 3000 pounds of black liquor solids per ton of brown pulp regardless of digester type.

7. The figures attached to the original application were 8 1/2 X 11, as required. Attached are full size copies of these figures, which are more legible. Also attached is Figure 1 from the original interim permit application for the NCG system, which should answer this question. There are no sources which are uncontrolled.

8. At the time the original application was submitted, most of this information was not available. Attached is a new drawing which describes the system in more detail and contains most of the information requested. All emergency vents are between 75-100 feet.

9. The only pollutants affected by the proposed changes are TRS and S02. There is no effect on any other pollutant listed in Table 500-2 of FAC Champer 17-2.

   In regard to the last part of this question, the federal retention time and temperature requirements for incineration were not based on criteria of achieving 5 ppm. The 5 ppm criteria is an alternate if incineration is not used (see CFR 60.283(a)(1)). In regard to claiming 100% destruction, this is not Champion's claim. On page 4-15 of EPA-625/7-76-001, the EPA states "Gases are incinerated in the kiln...to achieve complete oxidation of the sulfur compounds present. The S02 formed is largely collected by the lime..." Part of the rationale in this statement is that the standard for incineration of TRS is 1200 degrees F for 0.5 seconds. TRS gases entering a lime kiln will experience temperatures greater than 1700 degrees F for several seconds. Since the additional TRS being added to the kiln will be small (approximately 70-100 tons per year), and using 99% removal of the resulting S02, the increase emissions would be less than 1 ton per year. Champion believes that due to the large excess of lime in comparison to the S02 present, that removal rates would exceed 99%. Champion will test the lime kiln stack before and after NCG improvements to determine actual S02 stack emissions.

10. a) The mill has twelve 2700 cubic feet direct steam heated batch digesters, arranged in two banks of six digesters each. Each bank is connected to a separate blow tank, and both blow tanks are connected to a single direct contact accumulator.

b/c) The mill has two sets of evaporators. No. 1 set is a conventional 6-effect evaporator followed by 2 finishers (concentrators). No. 2 set is a 6-effect evaporator with the sixth effect being a concentrator. All off-gases are collected by the NCG system.

d) The existing system cannot handle simultaneous blows. The modified system will be designed to handle simultaneous blows, one from each bank. It is not possible to blow digesters simultaneous to the same blow tank. Maximum through-put will be five blows per hour, but due to system limitations, this rate could be continued for no more than two hours.

e) When the lime kiln is out-of-service, the NCG gases are vented to the atmosphere in accordance with 17-26.

11. There have been no changes in the operation of any sources other than as described in Department permits. There have been no changes in design operation rates of the batch or Kamyr digester systems. The rates contained in the permit application are not design rates, but maximum short-term (one-hour) rates that may be possible. This is what was requested by the Department. The mill has never run at these rates. However, the NCG system is designed to collect and incinerate gases at these short-term rates. If the mill were to operate at these rates, there would be no increase in emissions. Again, it must be understood that there have been no changes beyond what was permitted.

In regard to mill design production rates, the Kamyr digester is a 750 air dried ton per day pulp system. The highest single day production was 858 tons. The highest monthly production was 740 tons per calendar day. The batch system is capable of 96 blows per day. The highest single day production was 90 blows.

It should also be understood that all production from these systems go to the bleach plant which has a separate permit with production limits.

12. The original batch NCG system was installed in 1974, under FDER construction permit AC-506, issued November 14, 1972. The lime kiln was constructed at the same time under FDER construction permit AC-509. Both systems were issued an operating permit, A017-2120, on July 15, 1975. The actual emissions of pollutants listed in Table 500-2 before the installation of the batch system is impossible to determine and not applicable to the application.

13. There are no PSD significant net emission increases or decreases. In fact, as stated in the original application, the only impact of this modification will be a slight reduction in TRS emissions, and a slight increase (less than 1 ton per year) in S02 emissions.

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CHAMPION INTERNATIONAL CORPORATION
NON-CONDENSABLE GAS HANDLING SYSTEM
ESCAMBIA COUNTY

OPERATION
PERMIT

NO. A017-127829

DATE OF ISSUANCE

January 30, 1987

Norman Richards

NORMAN RICHARDS, Ph.D.
Assistant District Manager

DATE OF EXPIRATION

January 1, 1992

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT

160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794

PERMITTEE:

Champion International
Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987
Expiration Date: January 1, 1992
County: Escambia
Latitude/Longitude: 30°36'20"N/87°19'26"W
Section/Township/Range: 15/1N/31W
Project: Non-Condensable Gas Handling System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The above named applicant, hereinafter called 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:

Operation of a non-condensable gas handling system which collects non-condensed gases containing total reduced sulfur (TRS) compounds. These gases come from three sources, which are:

1. Twelve batch digesters - processed through two blow tanks, a primary condenser and a secondary condenser. These TRS emissions are partially controlled by #2 Mill White Liquor Scrubber with final control by incineration in the lime kiln.

2. A Kamyr continuous digester - processed through three flush tanks, a stripper reboiler, and a condensate stripper. These TRS emissions are partially controlled by a white liquor scrubber with final control by incineration in the lime kiln.

3. Two multiple effect evaporators. TRS emissions from these evaporators are partially controlled by a white liquor scrubber and then combined with the TRS emissions from batch digesters at the #2 Mill White Liquor Scrubber.

The three sources are schematically shown in drawing 470-5-005 submitted as Attachment I of the application for this permit. Attachment II describes the various potential vents in this system which are the subject of compliance with Florida Administrative Code Rule 17-2.600(4)(c)1.a.

Located: south of State Road 184, 1/4 mile west of U.S. 29, Cantonment

PERMITTEE:
Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: A017-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

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.

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.

PERMITTEE:
Champion International
Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: A017-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

GENERAL CONDITIONS:

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 noncompliance; 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.

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.

PERMITTEE:
Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

GENERAL CONDITIONS:

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

a. Upon request, the permittee shall furnish all records and plans 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.

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 measurement;
- the person responsible for performing the sampling or measurement;
- 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.

PERMITTEE:
Champion International
Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

GENERAL CONDITIONS:

14. 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:

15. Gaseous emissions from these sources shall be collected and incinerated in a lime kiln or calciner meeting the requirements of Florida Administrative Code Rule 17-2.600(4)(c)5. Such a lime kiln is permitted under AO17-105854. With issuance of this permit, reference of these sources as part of the description of AO17-105854 shall be deleted as redundant.

16. TRS emissions from these sources are prohibited except in the contingency events outlined in Florida Administrative CodeRule 17-2.600(4)(c)1.a. In accordance with this Rule, the permittee shall submit an acceptable contingency plan to the Department. This plan shall be submitted prior to February 12, 1987 or it shall be addressed by a plan and scheduled for achieving final compliance in accordance with Florida Administrative Code Rule 17-2.960(1)(b) prior to February 12, 1987.

SEE ADDENDUM I

17. For emissions inventory purposes, the TRS emissions are estimated that 0.0 pounds per hour and 0.0 tons per year will be required to be met on the date of final compliance.

Also for emissions inventory purposes, the TRS emissions are estimated at 0.0 pounds per hour and 0.0 tons per year during the interim period (prior to final compliance).

18. The permanent source identification numbers for these sources are:

10/17/0042/53	Batch Digesters
10/17/0042/54	Kamyr Continuous Digester & Condensate Stripper
10/17/0042/55	Two Multiple Effect Evaporators

Please cite the appropriate number on all test reports and other correspondence specific to a permitted point source.

PERMITTEE:
Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987
Expiration Date: January 1, 1992

SPECIFIC CONDITIONS:

Expiration Date:

January 1, 1992

Issued this 30th day of January, 1987.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Norman Richards

NORMAN RICHARDS, Ph.D.
Assistant District Manager

375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

E01.A21

Champion
Champion International Corporation

November 25, 1986

Mr. Jack Preece
State of Florida
Department of Environmental Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

Subject: Application for Interim Permit to Operate a Non-Condensible Gas Handling System

Dear Mr. Preece:

Attached please find subject application and a check for $100, the stipulated price for issuing the Operating Permit. You indicated that a responsible person other than a registered engineer could sign Section IB (page 2) of the application. David Arceneaux, who is thoroughly familiar with this system, has signed this section.

Sincerely,

Justus C. Tracy

Justus C. Tracy
Environmental Engineer

JCT/dj

Attachment

bc: Charles Ayer
David Arceneaux
Ed Clem
Ted Crane
Dave Hearne

Champion
Champion International Corporation

DATE MONTH	DAY	YEAR	INVOICE NUMBER	DIV-LOC	REFERENCE	GROSS AMOUNT	DISCOUNT	NET AMOUNT
11	25	86	Interim Permit 30-005-012-600-027-000			$100.00		$100.00
46067500				No.	TOTALS			

DETACH AT PERFORATION BEFORE DEPOSITING

Champion
Champion International Corporation
PENSACOLA, FLORIDA

No. 028033

63-566
631
BARNETT BANK

DATE
11-25-86

$100.00

AMOUNT
$100.00

PAY TO THE ORDER OF
State of Florida
Department of Environmental Regulation

Frank Kneisel
249

[redacted] [redacted] [redacted]

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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: Paper Plant [ ] New[1] [XX] Existing[1]

APPLICATION TYPE: [ ] Construction [XX] Operation [ ] Modification

COMPANY NAME: Champion International Corporation COUNTY: Escambia

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) Non-Condensible Gas (NCG Handling System

SOURCE LOCATION: Street Muscogee Road City Cantonment

UTM: East 469.0 North 3385.8

Latitude 30 ° 36 ' 20 "N Longitude 87 ° 19 ' 26 "W

APPLICANT NAME AND TITLE: Theodore P. Crane, Jr. - VP, Operations Manager

APPLICANT ADDRESS: P. O. Box 87, Cantonment, Florida 32533

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Champion International

I certify that the statements made in this application for a Operation Permit 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: [signature]

Theodore P. Crane, Jr.-VP, Operations Mgr.
Name and Title (Please Type)

Date: ______ Telephone No. 904-968-2121

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)

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? No
   a. If yes, has "offset" been applied? N/A
   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A
   c. If yes, list non-attainment pollutants. N/A
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No
3. Does the State "Prevention of Significant Deteriorization" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? N/A
   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.

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)
Lime Kiln	TRS	N/A	N/A	N/A

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Included in Lime Kiln Application			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

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.

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.

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.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

5. (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).

CHAMPION INTERNATIONAL
PENSACOLA MILL

NON-CONDENSIBLES SYSTEM
DESCRIPTION OF POTENTIAL VENTS
(See Dwg. No. 470-5-005)

Batch System Potential Vents

1A and 1B (Pressure):
These are pressure relief valves for each blow tank set to relieve at 5 psig. These prevent overpressurization of the blow tanks and primary condenser.

2A and 2B (Pressure/Vacuum):
These are pressure/vacuum relief valves that would relieve pressure at 5 psig to prevent overpressurizing the primary condenser and secondary condenser. They also would relieve vacuum to protect equipment.

3 (Manual):
This is a manual valve that could be used to vent the total batch digester gas flow. This vent would only be used if the #2 Mill white liquor scrubber is inoperable.

4 (Pressure):
This pressure relief valve would open if the gas line to the lime kiln were to overpressurize. Normal pressure in this line is 15" W.C.

5 (Motorized):
This valve would be used to vent gases away from the lime kiln after scrubbing. This is also the valve interlocked with the flame safety device on the lime kiln; a flame failure on the lime kiln would initiate a vent opening.

Evaporator Gases Potential Vents

6 (Manual):
This valve would be used to vent the evaporator non-condensible gases after scrubbing from #1 set of evaporators. This would only take place when #2 Mill white liquor scrubber is inoperable.

7 (Manual):
Same as above for #2 set of evaporators.

Continuous System Potential Vents

8A and 8B (Pressure):

These are pressure relief valves that would open if the gas line to the continuous system reboiler were to overpressurize. These valves relieve at 10 psig presently.

9 (Manual):

This manual valve could be used to vent the continuous system gases after scrubbing and before the turpentine condenser if it were inoperable.

10 (Manual):

This manual valve could also relieve continuous system gases after scrubbing and after turpentine condenser. This valve is normally open to provide dilution to the continuous stream being conveyed to the lime kiln for incineration.

11 (Open Vent):

This vent is the outlet for rectifier overhead and continuous system gases at the lime kiln. Motorized valves, as arranged on the drawing, would open to this atmospheric vent only on a flame failure at the kiln.

Note: Across every 100' of gas line on the batch system is a rupture disc that could relieve the pressure of an upset condition in that line.

ATTACHMENT III

Potential emissions estimates are based on an expected production rate of 1400 tons ADP/day of factors for "Uncontrolled" TRS emissions from digester, turpentine condenser, and multiple-effect evaporators are from Table 10.1.2-1 of AP 42. The factor for "Uncontrolled" TRS emissions from the condensate stripper was from Table 5-1 of EPA-450/2-78-003b.

Digesters:	1400 tons ADP/day x 1.6# TRS/ton ADP	= 2240#/Day
Turpentine Condensers*:	1400 tons ADP/day x 0.51# TRS/ton ADP	= 714#/Day
Evaporators:	1400 tons ADP/day x 0.5# TRS/ton ADP	= 700#/Day
Condensate Stripper:	1400 tons ADP/day X 2.0# TRS/ton ADP	= 2800#/Day
Total Potential TRS		6454#/Day

*Assumes the same factor for digester-turpentine condenser applies to Kamyr-stripper vent gasses.

6454 lb/day ÷ 24 hrs/day = 269 lb/hr.

375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

E01. A21

Champion
Champion International Corporation

September 23, 1986

Mr. Jack Preece
Department of Environmental Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

Subject: Non-Condensible Gas Handling System
Interim Permit

Dear Mr. Preece:

Enclosed is a Flow Schematic of subject system identifying all known potential vent points. An accompanying written description of the function and/or normal control of emissions at each point is included.

Champion is aware of certain inadequacies of the present system. As we discussed, a company task force has been activated with the ultimate goal of improving the system to meet applicable FDER regulations.

If you have questions or need further information, please let me know.

Sincerely,

Justus C. Tracy

Justus C. Tracy
Environmental Engineer

JCT/dj

Enclosures

cc: David Arceneaux
Charles Ayer
Ed Clem
Ted Crane
Dave Hearne
Mohan Gupta
Dale Stillwell

CHAMPION INTERNATIONAL
PENSACOLA MILL

NON-CONDENSIBLES SYSTEM
DESCRIPTION OF POTENTIAL VENTS
(See Dwg. No. 470-5-005)

Batch System Potential Vents

1A and 1B (Pressure):

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3 (Manual):

This is a manual valve that could be used to vent the total batch digester gas flow. This vent would only be used if the #2 Mill white liquor scrubber is inoperable.

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This pressure relief valve would open if the gas line to the lime kiln were to overpressurize. Normal pressure in this line is 15" W.C.

5 (Motorized):

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Same as above for #2 set of evaporators.

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This manual valve could also relieve continuous system gases after scrubbing and after turpentine condenser. This valve is normally open to provide dilution to the continuous stream being conveyed to the lime kiln for incineration.

11 (Open Vent):
This vent is the outlet for rectifier overhead and continuous system gases at the lime kiln. Motorized valves, as arranged on the drawing, would open to this atmospheric vent only on a flame failure at the kiln.

Note: Across every 100' of gas line on the batch system is a rupture disc that could relieve the pressure of an upset condition in that line.

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. T. P. Crane, Vice President
Champion International Corp.
P. O. Box 87
Cantonment, Florida 32533-0087

Dear Mr. Crane:

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 274 007 583

RECEIPT FOR CERTIFIED MAIL

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

☆ U.S.G.P.O. 1985-480-794

Sent to T.P. Crane, Jr., V.P. ~~Champion International Corp.~~	
Street and No. P.O. Box 87	
P.O., State and ZIP Code Cantonment, FL 32533	
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 17-142004	

PS Form 3800, June 1985

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: T.P. Crane, Jr., V.P.
Operations Manager
Champion International Corporation
P.O. Box 87
Cantonment, FL 32533

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 274 007 583

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Betsy Adams

7. Date of Delivery
12/14/87

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

File 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 11, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. T.P. Crane, Jr.
Vice President and Operations Manager
Champion International Corporation
Post Office Box 87
Cantonment, Florida 32533-0087

Dear Mr. Crane:

RE: Construction on Permit Application to make changes to the Noncondensable Gas Handling System for TRS Sources - File No. AC 17-142004

The Department received your application for a construction permit to make changes to the noncondensable gas handling system at the Champion International Mill, Cantonment, Florida on November 13, 1987.

We have reviewed the application and find it to be incomplete. In order to have the reasonable assurance required by Florida Administrative Code (FAC) Chapters 17-2 and 17-4, we will need the following additional information to process your application. Processing of your application will resume upon receipt of this additional information. Please be sure to state and justify all assumptions. We will also need copies of the documentation that was used to support these assumptions.

1. The application fee is inadequate because it is to be calculated on the basis of maximum TRS emissions, expressed as SO_2, that will be vented to the noncondensable gas handling system from each source. If the control device is also a source such as the lime kiln then an appropriate application fee for the lime kiln is also to be included.

2. Your application indicates that a number of proposed changes are being considered. These changes are listed in Attachment A. We need to specifically know which changes are to be made. Please explain each of the changes and how the performance of the noncondensable gas handling system and the control device will be affected.

3. Please describe and explain the operation of a foul oil tank, rectifier and lime kiln rectifier burner.

4. The noncondensable gas handling system is not a source in and of itself. So, an application with the appropriate processing fee is required for each source, including the control device, that is to be connected to the noncondensable gas handling system. Please fully describe each source and control device. Provide all information requested in the application for each source and the control device that is to be connected to the noncondensable gas handling system.

5. Please provide an 8 1/2 x 11 copy of the USGS topographic map as requested in Item 7 of Section V on page 7 of 12 of the application form. Also, note that there is an allowable emission rate for each of the sources connected to the NCG system. Page 4 of 12 should be appropriately completed.

6. Please provide derivations of both the chemical and raw material inputs for each of the affected sources and the product outputs of those sources. All process flow rates of liquid and solid materials should be expressed as maximums in units of mass per time. It would facilitate the permitting process to know the maximum pounds of each process input per ton of air dry unbleached pulp. The maximum pounds of dry black liquor solids per ton of air dry unbleached pulp for each type of digester would enhance our ability to evaluate your application.

7. For each affected source, please identify the emission points that will be vented to the noncondensable gas handling system. Also please identify each emission point at the affected sources that will remain uncontrolled and explain why these points will not be controlled. Our ability to evaluate the application would be enhanced if Figures 1 and 2 of your application were more legible.

8. Please identify the quantity of gas that each emission point will emit to the noncondensable gas handling system and/or the atmosphere. The data needs to include the maximum gas volume(ACFM and DSCFM) duct diameter (ft.), temperature, velocity, and percent water vapor. We will also need the maximum height of any emission points that release gases to the atmosphere.

9. We will need the maximum quantity of each pollutant in pounds per hour and tons per year that each affected source will emit to the noncondensable gas handling system and/or the atmosphere. All pollutants listed in Table 500-2 of FAC Chapter 17-2 need to be included, PM_{10} is also to be considered. This information is needed for the sources and the system prior to the proposed changes and following the proposed changes. Since the lime kiln is both a source and a control device it is to be included. Please provide complete derivations of control device efficiencies. Note that the federal retention time and temperature requirements for incineration were based on criteria for achieving 5 ppm. We feel that it is inappropriate to claim 100% destruction of TRS in lime kiln or 100% SO_2 absorption. Please quantify and substantiate the TRS and SO_2 removal effeciencies assumed in your application.

10. Please fully describe each source that is to be connected to the noncondensable gas handling system, the noncondensable gas handling system, the source that is acting as the control device, and the function of each. The information that is needed includes, but is not limited to, the following:

    (a) The number of batch digesters, the volume of the batch digesters, the number of the accumulators, the number of blow tanks, the type of digester heating employed, etc.

    (b) The number of effects and bodies in each multiple effect evaporator system, where each multiple effect evaporator system is vented to, etc.

    (c) The number of concentrators, concentrator bodies, the type of concentrators, the point to which the concentrator gases are vented, etc.

    (d) The number of simultaneous digester blows and blows/hour that the system is designed to handle.

    (e) What happens when the lime kiln is out-of-service.

    The function of each source and element of the noncondensable gas handling system should be illustrated with pictures and diagrams. This information will provide us with some of the needed reasonable assurance and help us to adequately describe each of the affected sources in order to avoid future misunderstandings about what is included in your permits.

11. It appears from your application that substantial changes in the operation rates of some of the sources may have occurred since PSD-FL-0029 was issued and since the 1984 inventory. A complete description of all changes leading to the changes in operation rates will be needed. The description is to include the dates on which any such changes occurred. Since these apparent changes have the potential to increase actual emissions--please explain and quantify the emission increases that resulted from the changes. Where appropriate, all provisions of FAC Rules Chapter 17-2.500 [Prevention of Significant Deterioration] and 17-2.660 [Standards of Performance for New Stationary Sources] will need to be complied with. If emission increases did not occur as a result of changes, please explain and justify. Each pollutant listed in Table 500-2 FAC Chapter 17-2 will need to be addressed as well as PM_{10}.

12. When was the TRS collection and incineration system serving each of the Non NSPS sources originally installed. Please quantify the actual emissions of each pollutant listed in Table 500-2 of FAC Chapter 17-2 that existed before and after the installation of the system.

13. 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 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.

Processing of your application will resume upon receipt of the requested information. If you have any questions or wish to meet with us please write to me at the above address or call Bill Thomas at (904) 488-1344.

Sincerely,

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

CHF/jp

cc: David T. Arceneaux
Edwin Middleswart
Betsy Pittman
Lamar Sarratt, P.E.

375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

Receipt #76199
V# 426771
$100.00
AC 17-142004

File Copy

RECEIVED
DER - MAIL ROOM
1987 NOV 13 AM 10: 26

Champion
Champion International Corporation

November 12, 1987

Mr. William Thomas
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Thomas:

Enclosed are two copies of a construction permit application for modification of the non-condensable gas (NCG) collection and handling system at Champion's Pensacola Mill. The modification will not impact mill capacity nor result in any increased emissions. Since the modified system will reduce NCG venting, there will be a reduction in TRS emissions.

The attached application is based on preliminary engineering. As detailed engineering progresses, there may be changes in the final designed system, but this will not effect compliance or the compliance schedule. Champion will continue to keep the Department informed, and will submit more details as the engineering process continues.

The attached copies are not signed by a professional engineer. Champion's consultant for this project, the MoDo-Chemetics Division of Chemetics International Company, is located in Vancouver, Canada. The engineer assigned to the review of this project will sign and seal two copies on Monday, November 16, 1987 and these will be delivered to the Department by Wednesday, November 18, 1987.

During construction of the modified system, TRS gases may be vented to atmosphere. Champion will schedule construction to minimize emissions and will notify the Northwest District during any extended venting periods.

Best Available Copy

EMERY WORLDWIDE

0 2 3 9 3 3 8 9 1 3

FORM OF PAYMENT *

CASH ☐ GBL CBL ☐ FCCOD ☐

PPD ☒ COL ☐ OTH ☐ COMAT ☐

Shippers Emery Account Number: E 991260597

UNITED STATES / CANADA — STANDARD SERVICES *: Same Day ☐ Next Morning ☒ Second Morning ☐ Other ☐ Metro ☐

INTERNATIONAL — STANDARD SERVICES *: Courier Express ☐ Air Cargo Service ☐ Air Economy Service ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date: [illegible] | Origin: PNS | Shipment Number: 023933891

From: David T. Arceneaux 1/904/968-2121, E2519
CHAMPION INTERNATIONAL
MUSCOGEE RD
CANTONMENT, FL
Zip: 32533

To: Mr. William Thomas
Florida Department of Environmental Reg
Twin Tower Office Building
2600 Blair Stone Road
Tallahassee, Florida
Zip: 3 2 3 0 1

Saturday Delivery ☐ | Hold at Airport ☐ | Canada ☐ | Tariff Dest. | Gateway | C.O.D. $

Customer's Reference Numbers | Consignee's Emery Account No. E

Description and Marks	Dimensions L	W	H	Pieces	Weight (In Lbs.)
Urgent Letter				1	1

TODSR ☐ Haz Mat ☐ Edit ☐

Envelope 9X12 ☒ | Pack 12X15 ☒

32301N

Terms and Conditions on Back

Shipper's Signature X [illegible signature]

International Charges: Free Domicile ☐ | Comm. Code

Third party Emery Account Number mandatory for Third party billing. | Third Party Emery Account No. E

Intl. Customs Value | Intl. Insurance

At Origin
Base Charge
At Destination
TOTAL

Total Transportation Charges | Other Charges OC– $

Time Rec'd By Emery: Mo. Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Multiple Shpts. / Drop Box: 1 2 3 4 5 6 7 8 9 0 1 2 Over 32

Goods Rec'd At: Shippers Door ☒ Drop Box ☐ Emery Terminal ☐ Carrier Advance ☐

By: Emery Representative [signature]

If there are any questions concerning this application, please contact me.

Sincerely,

David T. Arceneaux
Supervisor
Environmental Control

DTA/hs

Attachments

cc: Mr. Thomas W. Moody, P.E.
Florida Department of Environmental
Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

CHEMETICS

Chemetics International Company
A Business Unit of C-I-L Inc.
90 Sheppard Ave. East
P.O. Box 2500, Station "A"
North York, Ontario M6N 6J2

Mr. William Thomas
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road,
Tallahassee, Florida 32301
U. S. A.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Non-condensable Gas (NCG) Handling System [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Champion International Corporation COUNTY: Escambia

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) Non-condensable Gas (NCG) Handling System

SOURCE LOCATION: Street 375 Muscogee Road City Cantonment

UTM: East 469.0 North 3385.8

Latitude 30 ° 36 ' 20 "N Longitude 87 ° 19 ' 26 "W

APPLICANT NAME AND TITLE: T. P. Crane, Jr. - V.P., Operations Manager

APPLICANT ADDRESS: P. O. Box 87, Cantonment, Florida 32533

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Champion International

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: [signature]

T. P. Crane, Jr., V.P., Operations Manager
Name and Title (Please Type)

Date: 11-12-87 Telephone No. (904) 968-2121

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)

Swift Sure GROUP

COURIER SERVICE LIMITED
SERVICE DE COURRIER LTÉE
U.S.A. INCORPORATED
U.K. LIMITED

Mo.	Dy./Jr.	Yr./An.
11	13	87

Your Reference / Votre référence: Ver. Office

T11089256

SWIFT SURE GROUP
MOVING INTO THE 21ST CENTURY

Origin, Name & Address / Nom & adresse d'origine
CHENETICS
90 SHEPPARD AVE. E.
NORTH YORK, ONTARIO
Postal Code Postal: M2N 6J2

Destination, Name & Address / Nom & adresse à destination
Mr. W. Thomas
Florida Dept. of Environmental
Regulation
Twin Towers Office Bldg.
2600 Blair Stone Road,
Tallahassee, Florida 32301
Postal Code Postal

Charge to Account No. / Fact. à nº de compte
Origin Signature d'origine

Origin – (Prepaid) / Origine – (Port payé)	CHE 001	X	X
Destination – (Collect) / Destin. – (À percevoir)		X	
Other – (3rd Party) / Autrui – (un tiers)		X	

IATA

Received in good order except as noted / Reçu en bon état apparent excepté tel qu'indiqué
Destination Per / Par X
Date   Time / Temps

Courier Signature / Signature Courrier
Pick-up / Cueillette   Delivery / Livraison

Cube
Weight / Poids   X   X   =

Hold for Pick-up / Retenu pour ramassage   X

Pieces / Colis	Description	Weight / Poids
1	Printed Matter NCV	

DER

Weight Charges / Frais pour poids   NOV 16 1987
Tranship Charges / Frais transbordement (Low density area) / (En zone de faible densité)
Additional Insurance Coverage / Couverture supplémentaire d'assurance   BAQM

T11089256

IMPORTANT Read conditions on back / Lire les modalités au verso

TOTAL AMOUNT / MONTANT TOTAL

Hot shot	Swift Letter / Swift X Letter	Priority 1 / Priorité 1	Priority 2 / Priorité 2	Cour. Cargo / Fret Courr.	Stan. Cargo / Fret stand.	P.O.D.	Sat. Del. / Liv. Sam.	Hazard / Hasard	Quote / Citation
F		1	X	C	S		6	H	Q

SERIES/SERIE T 9-1-87

DESTINATION COPY
COPIE POUR LE DESTINATAIRE

AIRBORNE EXPRESS

WEIGHT (LBS.) SUBJECT TO CORRECTION
ORIGIN
SHIPMENT NO.
BUF 956279940

AFFIX TO PACKAGE

ROUTING

956279940
956279940

SAT
HAA

1094 (1/87)

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 ______________________

Lamar E. Sarratt
Name (Please Type)

Chemetics International Company
Company Name (Please Type)

P.O. Box 2500, Station "A", North York, Ont.
Mailing Address (Please Type) M2N 6J2 CANADA

Florida Registration No. 15687 Date: Nov. 13, 1987 Telephone No. 416 229-7895

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.

See Attachment II-A

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction 5/1/88 Completion of Construction 3/1/89

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.)

Engineering estimates are not available at this time. Preliminary engineering estimates are approximately $3 million including proposed changes to allow re-use of the blow heat from the batch process.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Interum Permit A017-127829 issued January 30, 1987, expires, January 1, 1992

Attachment II: A

The Pensacola Mill operates a non-condensable gas (NCG) handling system under Permit No. A017-127829 issued January 30, 1987. This application is to modify that system to bring the mill into compliance with Rule 17-2.600(4)(c)(1). The modifications planned will result in full compliance with that rule.

The basis of this application is an Engineering Study for Collection and Disposal of Non-Condensable Gases prepared by MoDo-Chemetics, and a Preliminary Engineering Study prepared by Simons-Eastern. The following are changes currently being considered:

- Replacement of the batch digester primary blow heat condenser circulation valve.
- Installation of a batch digester secondary condenser pump.
- Replacement of process control instrumentation in the batch digester blow heat recovery system.
- Addition of a vapor separator between the batch blow tank and primary condenser sized to allow simultaneous blows.
- Addition of two new bleach plant heat exchangers.
- Addition of a new demineralized water heat exchanger.
- Addition of a fiber filter for contaminated condensate before pumping to the condensate stripper.
- Removal of the existing batch digester transport system, including the white liquor scrubber and the transport fan and replacement with a new stainless steel transport system with gas movement by a dedicated steam ejector.
- Modification of the existing Kamyr transport system by the addition of new transport piping and a steam ejector.

- Removal of the existing evaporator white liquor scrubber and addition of transport piping to tie evaporator gases into the Kamyr system.
- Replacement of the lime kiln rectifier burner to allow injection of the batch and Kamyr transport systems, as well as the rectifier gases, into the lime kiln for incineration.

While final decisions have not been made, the compliance dates will be met.

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) N/A

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? No

   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.

Batch Digester System

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:
Based on maximum of five (5) blows per hour

Description	Contaminants		Maximum Utilization Rate -	Relate to Flow Diagram
	Type	% Wt		
Wood (50% Moisutre)	NA	NA	195 tons/hour	Figure 1-A
Cooking Liquor*	NA	NA	44,000 gal/hour	

*Cooking liquor is white liquor (sodium hydroxide + sodium sulfide) and black liquor (residual recycled cooking liquor)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): See A

2. Product Weight 45 air dried tons brown pulp per hour

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)
During venting only (no emissions during normal control)

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/hr	T/yr	
TRS as H_2S	225*	NA	NA	NA	225	986	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 5.0 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469).

[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).

Kamyr Continuous Digester

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	Relate to Flow Diagram
Wood (50% Moisture)	NA	NA	173 tons/hour	Figure 2-A
Cooking Liquor*	NA	NA	39,000 gal/hour	

*Cooking liquor is white liquor (sodium hydroxide + sodium sulfide) and black liquor (residual recycled cooking liquor)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): See A

2. Product Weight 40 air dried tons blown pulp per hour

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

During venting only (no emissions during normal control)

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 lbs/hr	Potential[4] Emission T/yr	Relate to Flow Diagram
TRS as H_2S	200*	NA	NA	NA	200	876	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 5 lb TRS as H_2S per ton pulp.

[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).

No. 1 Set Evaporator

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		
Weak Black Liquor	--	--	2350 gpm	Figure 2-C
(15% Solids)				

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

1. Total Process Input Rate (lbs/hr): ______

2. Product Weight (lbs/hr): ______

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

During venting only (no emissions during normal control)

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/hr	T/yr	
TRS as H_2S	122*		NA	NA	122	534	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 2 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469)

[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).

No. 2 Set Evaporator

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		
Weak Black Liquor	--	--	1300 gpm	Fig 2-D
(15% Solids)				

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

1. Total Process Input Rate (lbs/hr): __________

2. Product Weight (lbs/hr): __________

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)
During venting only (no emissions during normal control)

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/hr	T/yr	
TRS as H_2S	68*		NA	NA	68	298	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 2 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469)

[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)
Lime Kiln	TRS	NA	NA	
Permit No. A017-105854				

E. Fuels N/A

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

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.

The incineration of non-condensable gases in the lime kiln produced SO_2 which is absorbed by the lime and returned to the process. There is no other waste generated.

See Permit A017-105854

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: ______ ft. Stack Diameter: ______ ft.

Gas Flow Rate: ______ ACFM ______ DSCFM Gas Exit Temperature: ______ °F.

Water Vapor Content: ______ % Velocity: ______ FPS

SECTION IV: INCINERATOR INFORMATION N/A

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)]
   See Section III.
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. NA
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   Data from industry studies.
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.) NA
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). NA
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. Figure 1 and Figure 2
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).
   Figure 3
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. Figure 4

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 N/A

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] 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. Availaoility 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.

Best Available Copy

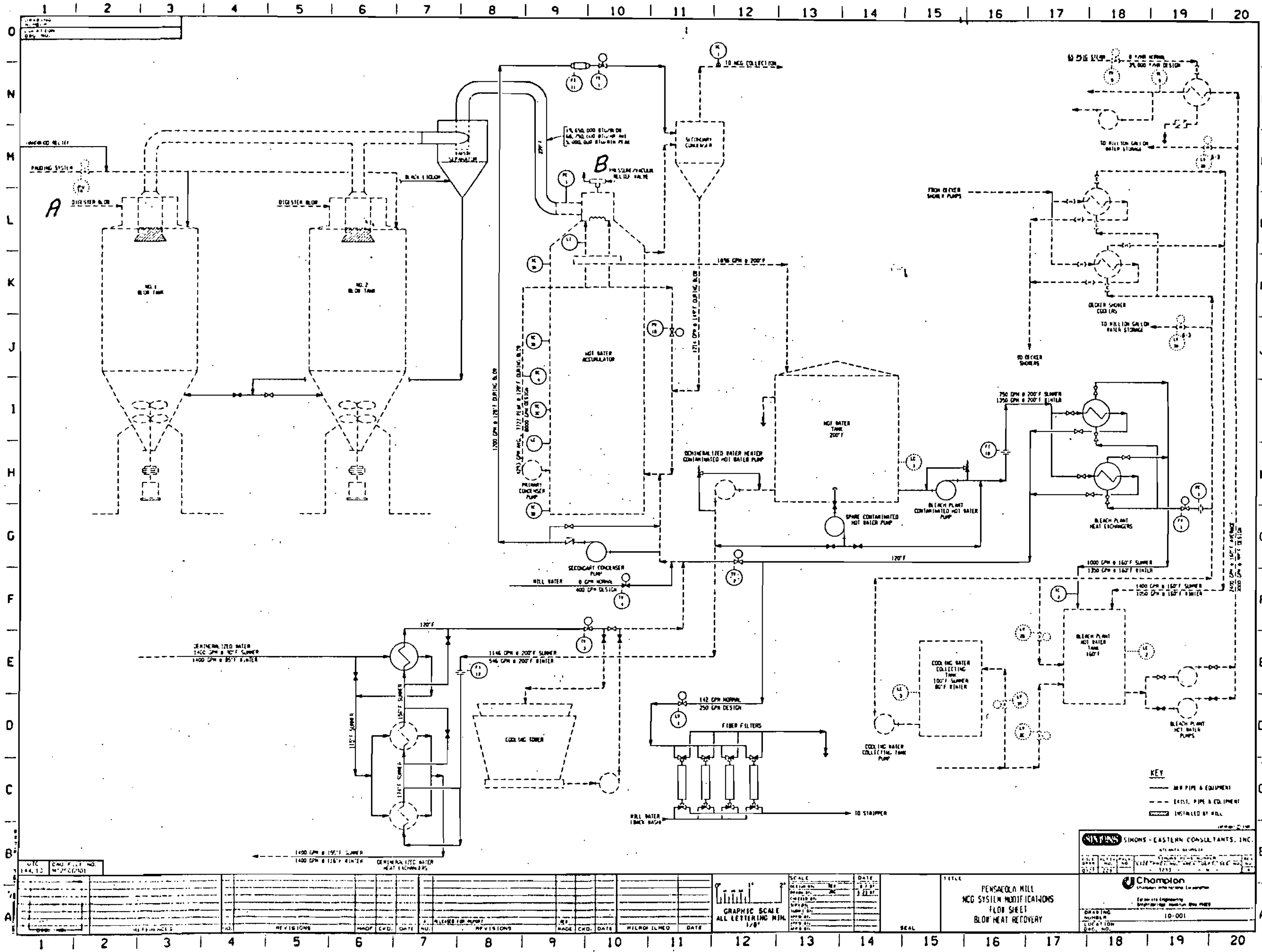


Figure 1

Best Available Copy

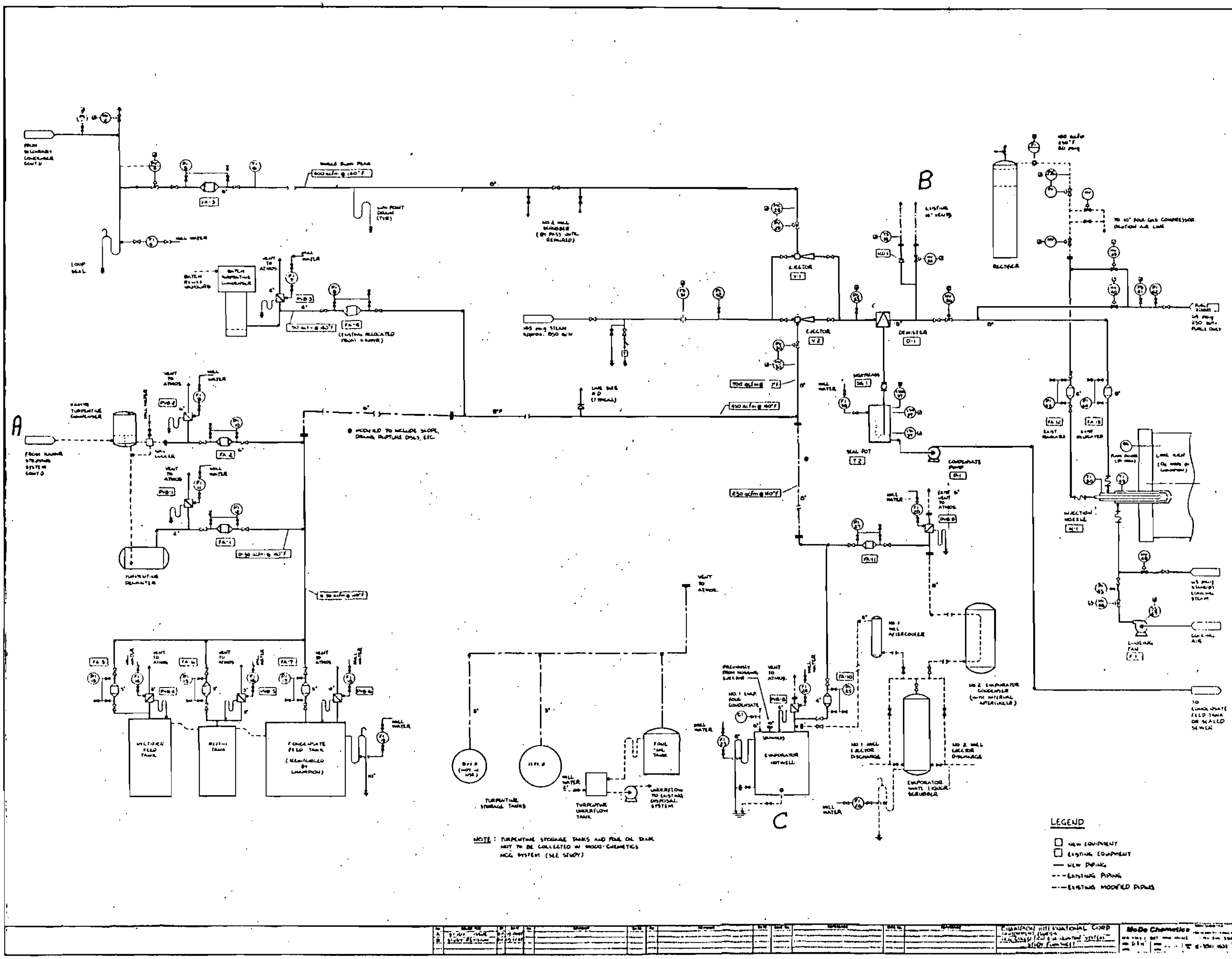
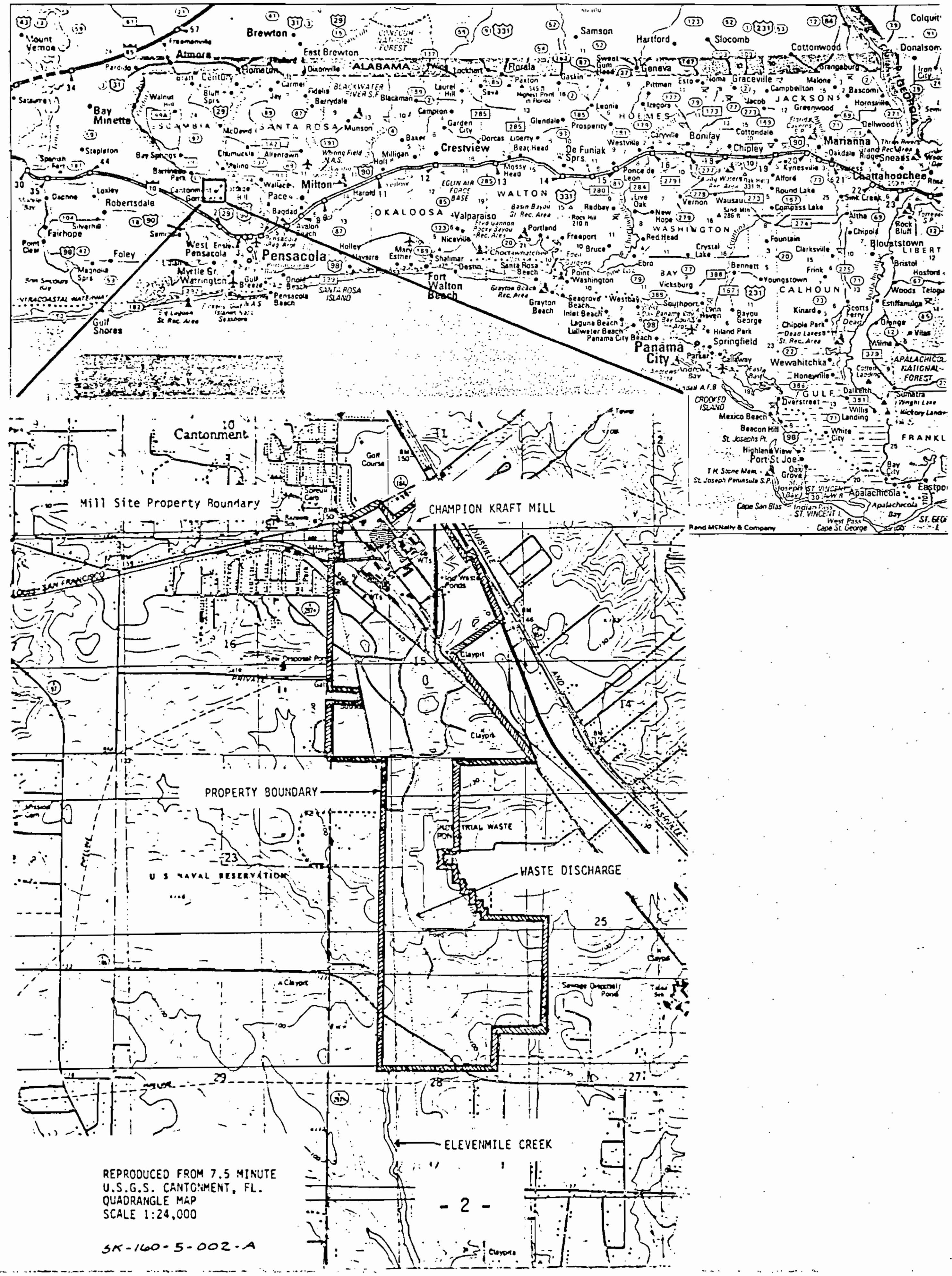


Figure 2

Best Available Copy

FIGURE 3 LOCATION OF CHAMPION FACILITY



REPRODUCED FROM 7.5 MINUTE
U.S.G.S. CANTONMENT, FL.
QUADRANGLE MAP
SCALE 1:24,000

SK-160-5-002-A

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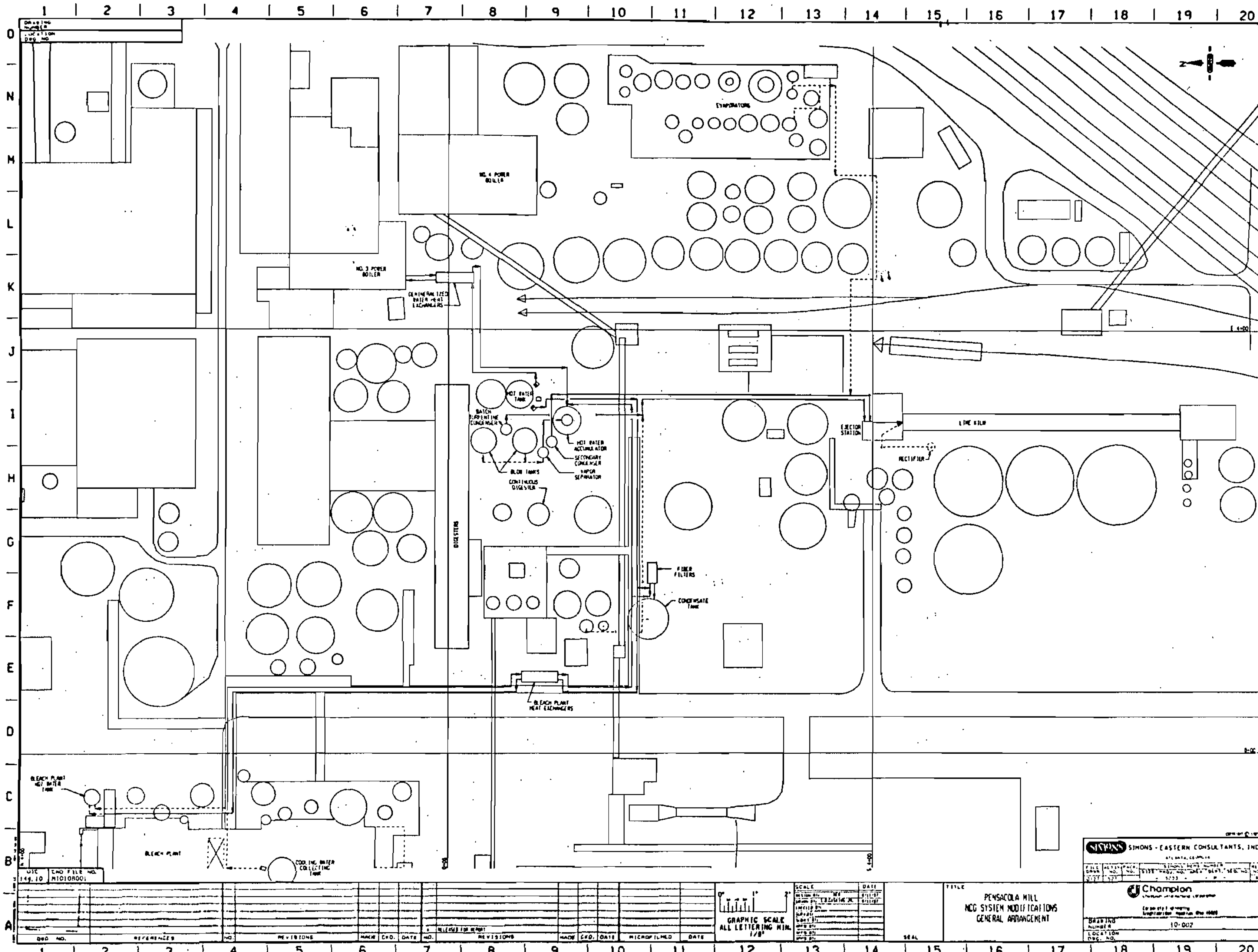


Figure 4

375 Muscogee Road
P.O. Box 87
Cantonment, Florida 32533-0087
904 968-2121

Receipt # 76199
✓# 426771
$100.00
AC 17-142004

Champion
Champion International Corporation

DER
NOV 16 1987
BAQM

November 12, 1987

DER
NOV 13 1987
BAQM

Mr. William Thomas
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Thomas:

Enclosed are two copies of a construction permit application for modification of the non-condensable gas (NCG) collection and handling system at Champion's Pensacola Mill. The modification will not impact mill capacity nor result in any increased emissions. Since the modified system will reduce NCG venting, there will be a reduction in TRS emissions.

The attached application is based on preliminary engineering. As detailed engineering progresses, there may be changes in the final designed system, but this will not effect compliance or the compliance schedule. Champion will continue to keep the Department informed, and will submit more details as the engineering process continues.

The attached copies are not signed by a professional engineer. Champion's consultant for this project, the MoDo-Chemetics Division of Chemetics International Company, is located in Vancouver, Canada. The engineer assigned to the review of this project will sign and seal two copies on Monday, November 16, 1987 and these will be delivered to the Department by Wednesday, November 18, 1987.

During construction of the modified system, TRS gases may be vented to atmosphere. Champion will schedule construction to minimize emissions and will notify the Northwest District during any extended venting periods.

Mr. William Thomas
Florida Department of Environmental
Regulation
Page 2
November 12, 1987

If there are any questions concerning this application, please contact me.

Sincerely,

David T. Arceneaux
Supervisor
Environmental Control

DTA/hs

Attachments

cc: Mr. Thomas W. Moody, P.E.
Florida Department of Environmental
Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

ID

1. The page with the PE's sign & seal not received
2. A number of changes that are being considered have been listed in Attachment A: Please explain the reasons for each of the changes & how the performance of the NCG will be improved.
3. Please quantify the effect that each of the changes will have on max emissions of each pollutants listed in table 500-2. reductions in emissions of certain pollutants may be considered as creditable red.

~~4. of part Please explain the reasons for removi the proposal to remove the presently ins~~

4. please ~~explain what a rectifier~~ describe and explain the operation of a rectifier?
5. ~~Each as~~ Each of the questions in Section II. F. on p. 3 of 12 needs to be answered specifically

~~6. The application needs to address emissions of all pollutants listed in Table 500-2.~~

~~7. Please provide derivations of process material and chemical input and output rates. Liquid inputs and product outputs should be given in units of mass per hour~~

6. Please provide derivations of raw material & chem. input & prod. output rates. These should include an ultimate gravimetric analysis of components such as white liquor, ~~and~~ black liquor, etc. ~~etc~~ Utilization/product rates need to be expressed in units of mass/time. Black liquor flows should be expressed in lb/hr BLS per hour
7. Please provide the max quantity of gas that each point of the ~~proposed~~ affected sources will emit into the NCG system. Include data about the volume (ACFM & DSCFM), Temp., % H_2O. ~~An estimate~~ Please include the max quantity of gas that the NCG system will be designed to handle without venting
8. Need the max quantity of each pollutant listed in Table 500-2 that each affected source will emit into the NCG system. The max. emissions of each pollutant listed in Table 500-2 will need to be quantified for the control device both before and after the proposed changes. Please provide the derivations of control device removal efficiencies. ~~For example TRS~~ state and justify all assumptions and provide copies of documentation.
9. For each of the affected sources please ~~id~~ identify the emission points that will be vented to the NCG. It also would be helpful if Fig. 1A 2 could be enlarged to make it more legible
10. Need the appropriate fee for each of the sources ~~to~~ be permitted
11. For the batch dig system please tell us how many digesters ~~& how many~~ Also tell us how many blows the NCG system will handle Are the emissions from the turp. included

Subcode 05

pd. 100.00
AC 17-

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

DER
NOV 13 1987
BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Non-condensable Gas (NCG) Handling System [ ] New[1] [x] Existing[1]

APPLICATION TYPE: [x] Construction [ ] Operation [ ] Modification

COMPANY NAME: Champion International Corporation COUNTY: Escambia

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) Non-condensable Gas (NCG) Handling System

SOURCE LOCATION: Street 375 Muscogee Road City Cantonment

UTM: East 469.0 North 3385.8

Latitude 30 ° 36 ' 20 "N Longitude 87 ° 19 ' 26 "W

APPLICANT NAME AND TITLE: T. P. Crane, Jr. - V.P., Operations Manager

APPLICANT ADDRESS: P. O. Box 87, Cantonment, Florida 32533

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Champion International

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: [signature]

T. P. Crane, Jr., V.P., Operations Manager
Name and Title (Please Type)

Date: 11-12-87 Telephone No. (904) 968-2121

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)

~~12. Please provide an application form~~ for the lime kiln, recti~~fier~~, condensate stripper
~~17. For the sources there is~~ applicable 17-2 std.
~~14.~~

~~13. Do both evaporator sets use the same hotwell~~, Please provide ~~the~~ types
~~14.~~ of ~~evaporators~~

12. Please fully describe ~~the operation of each~~ the batch digester system in terms of volume of each digester, type of heating, number of digesters, number of blow tanks, and accumulators. Also describe the operation of the system.

13. Please fully describe the Kamyr digester system in terms of physical parameters ~~&~~ such as volume, etc. Also describe the operation of the system

14. Please fully describe each of the multiple effect evaporator systems and associated concentrators ~~___~~ in terms of physical parameters
P

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____________________

Name (Please Type)

Company Name (Please Type)

Mailing Address (Please Type)

Florida Registration No.________ Date:________ Telephone No.________

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.

See Attachment II-A

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction 5/1/88 Completion of Construction 3/1/89

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.)

Engineering estimates are not available at this time. Preliminary engineering estimates are approximately $3 million including proposed changes to allow re-use of the blow heat from the batch process.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Interum Permit A017-127829 issued January 30, 1987, expires, January 1, 1992

Attachment II: A

The Pensacola Mill operates a non-condensable gas (NCG) handling system under Permit No. A017-127829 issued January 30, 1987. This application is to modify that system to bring the mill into compliance with Rule 17-2.600(4)(c)(1). The modifications planned will result in full compliance with that rule.

The basis of this application is an Engineering Study for Collection and Disposal of Non-Condensable Gases prepared by MoDo-Chemetics, and a Preliminary Engineering Study prepared by Simons-Eastern. The following are changes currently being considered:

- Replacement of the batch digester primary blow heat condenser circulation valve.
- Installation of a batch digester secondary condenser pump.
- Replacement of process control instrumentation in the batch digester blow heat recovery system.
- Addition of a vapor separator between the batch blow tank and primary condenser sized to allow simultaneous blows.
- Addition of two new bleach plant heat exchangers. - How will these affect emissions
- Addition of a new demineralized water heat exchanger.
- Addition of a fiber filter for contaminated condensate before pumping to the condensate stripper.
- Removal of the existing batch digester transport system, including the white liquor scrubber and the transport fan and replacement with a new stainless steel transport system with gas movement by a dedicated steam ejector. - Steel ok op?, How will this affect emissions
- Modification of the existing Kamyr transport system by the addition of new transport piping and a steam ejector.

How will this affect emissions

- Removal of the existing evaporator white liquor scrubber and addition of transport piping to tie evaporator gases into the Kamyr system.

- Replacement of the lime kiln rectifier burner to allow injection of the batch and Kamyr transport systems, as well as the rectifier gases, into the lime kiln for incineration.

Explain rectifier burner

what is a rectifier?

While final decisions have not been made, the compliance dates will be met.

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) N/A

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? No

   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.

Each question needs to be answered Yes or No

The application needs to address all pollutants emitted H_2S, SO_2, VOC, etc.

Are terpentine condenser emissions included

Batch Digester System

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: — How many batch dig., blow tanks, and accum

Based on maximum of five (5) blows per hour

Description	Contaminants		Maximum Utilization Rate -	Relate to Flow Diagram
	Type	% Wt		
Wood (50% Moisutre)	NA	NA	195 tons/hour	Figure I-A
Cooking Liquor*	NA	NA	44,000 gal/hour	

Please provide liquid utilization rates lb/hr

*Cooking liquor is white liquor (sodium hydroxide + sodium sulfide) and black liquor (residual recycled cooking liquor)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): See A

2. Product Weight 45 air dried tons brown pulp per hour

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)
During venting only (no emissions during normal control)

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/hr	T/yr	
TRS as H_2S	225*	NA	NA	NA	225	986	Fig 2-B
			Explain NA				

[1]See Section V, Item 2. *Based on an estimate of 5.0 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469). — please furnish copy of Tech Bulletin #69

[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).

Kamyr Continuous Digester — NSPS

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	Relate to Flow Diagram
Wood (50% Moisture)	NA	NA	173 tons/hour	Figure 2-A
Cooking Liquor*	NA	NA	39,000 gal/hour	

*Cooking liquor is white liquor (sodium hydroxide + sodium sulfide) and black liquor (residual recycled cooking liquor)

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): See A

2. Product Weight 40 air dried tons blown pulp per hour

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

During venting only (no emissions during normal control)

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 lbs/hr	Potential[4] Emission T/yr	Relate to Flow Diagram
TRS as H_2S	200*	NA	NA	NA	200	876	Fig 2-B
			(Explain NA)				

[1]See Section V, Item 2. *Based on an estimate of 5 lb TRS as H_2S per ton pulp.

[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).

No. 1 Set Evaporator

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		
Weak Black Liquor	--	--	2350 gpm	Figure 2-C
(15% Solids)				

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

1. Total Process Input Rate (lbs/hr):
2. Product Weight (lbs/hr): Please provide heavy black liquor & solids

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)
During venting only (no emissions during normal control)

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/hr	T/yr	
TRS as H_2S	122*		NA	NA	122	534	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 2 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469)

[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).

No. 2 Set Evaporator – NSPS

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
Weak Black Liquor	--	--	1300 gpm	Fig 2-D
(15% Solids)				

B. Process Rate, if applicable: (See Section V, Item 1) Not Applicable

1. Total Process Input Rate (lbs/hr): ______

2. Product Weight (lbs/hr): ______

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)
During venting only (no emissions during normal control)

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 lbs/hr	Potential[4] Emission T/yr	Relate to Flow Diagram
TRS as H_2S	68*		NA	NA	68	298	Fig 2-B

[1]See Section V, Item 2. *Based on an estimate of 2 lbs TRS as H_2S per ton pulp (NCASI Technical Bulletin No. 469)

[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).

Is the condensate stripper a part of the TRS collection & control system?

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)
Lime Kiln	TRS	NA	NA	
Permit No. A017-105854				

E. Fuels N/A

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

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.

The incineration of non-condensable gases in the lime kiln produced SO_2 which is absorbed by the lime and returned to the process. There is no other waste generated.

How much TRS is emitted by the kiln due to incineration. How much SO_2

See Permit A017-105854

Kiln Geometry

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: ______________ ft. Stack Diameter: ______________ ft.

Gas Flow Rate: __________ ACFM __________ DSCFM Gas Exit Temperature: ______________ °F.

Water Vapor Content: ______________ % Velocity: ______________ FPS

SECTION IV: INCINERATOR INFORMATION N/A

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.

Need

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
See Section III.
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. NA

Attach documents

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
Data from industry studies.
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.) NA

Gas volume

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). NA

Show derivation K/h

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. Figure 1 and Figure 2

Need

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).
Figure 3
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. Figure 4

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 N/A — This requires answer

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] 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. Attacn 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.

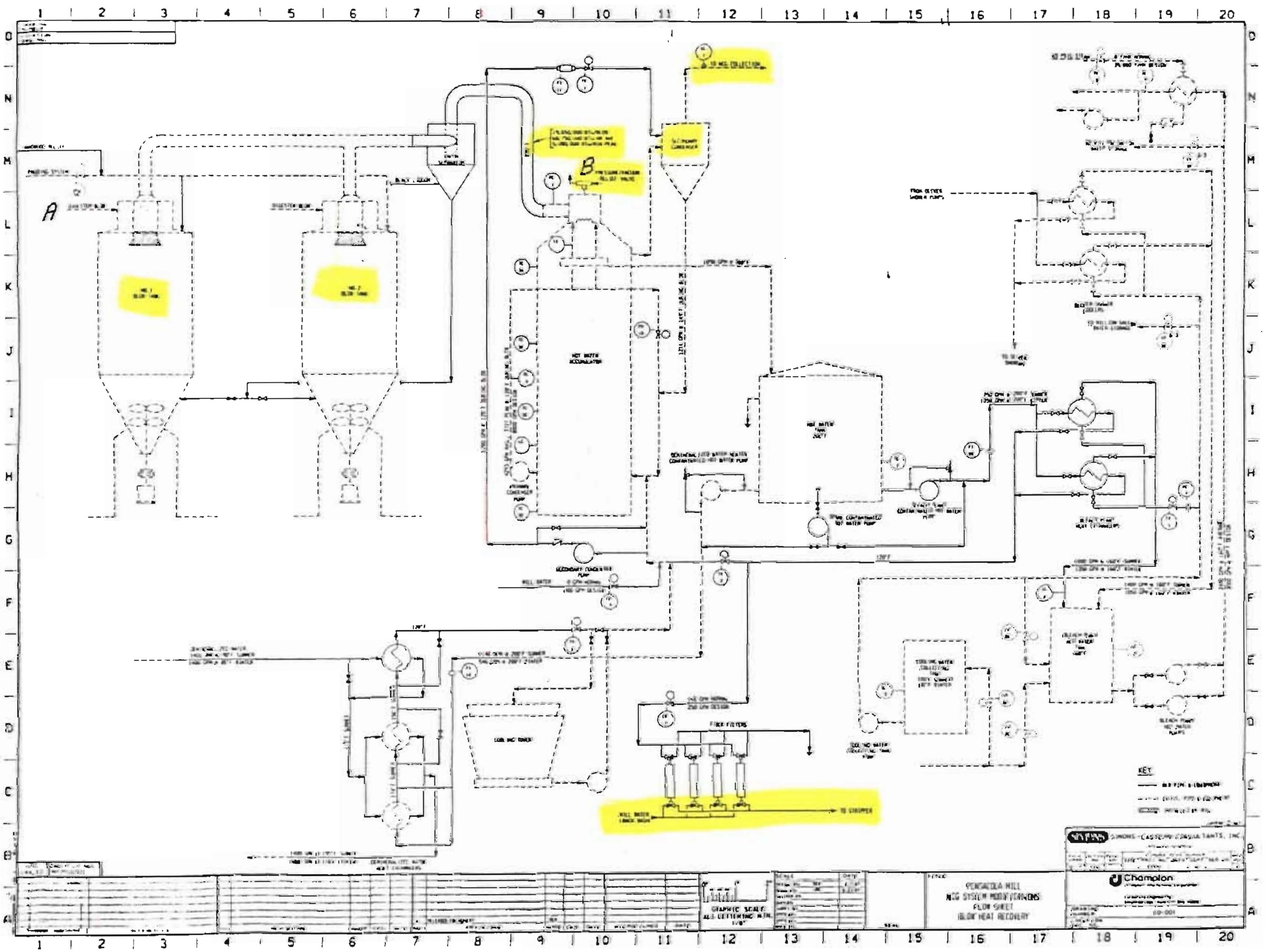


Figure 1

will Kamyr blow tank be controlled

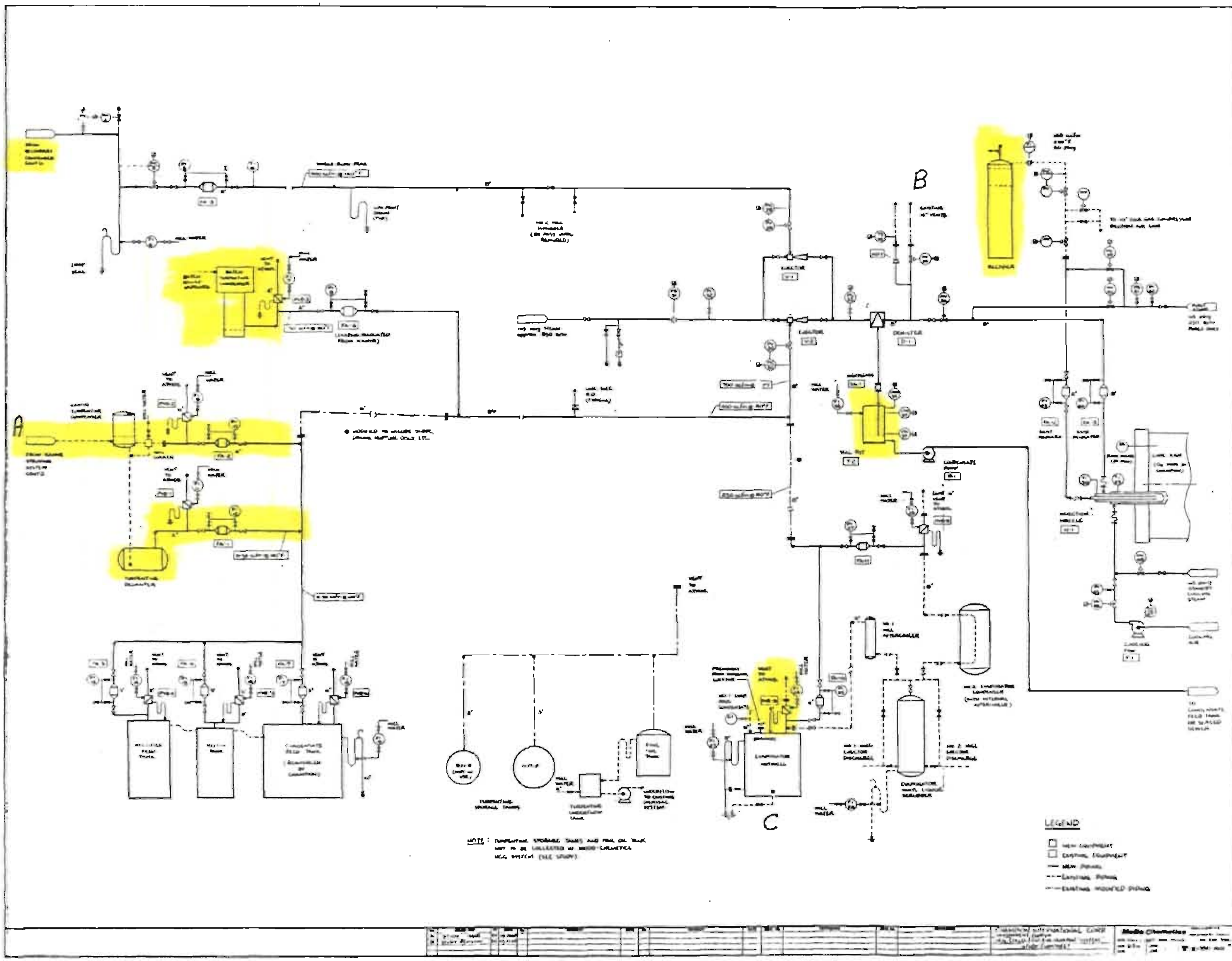
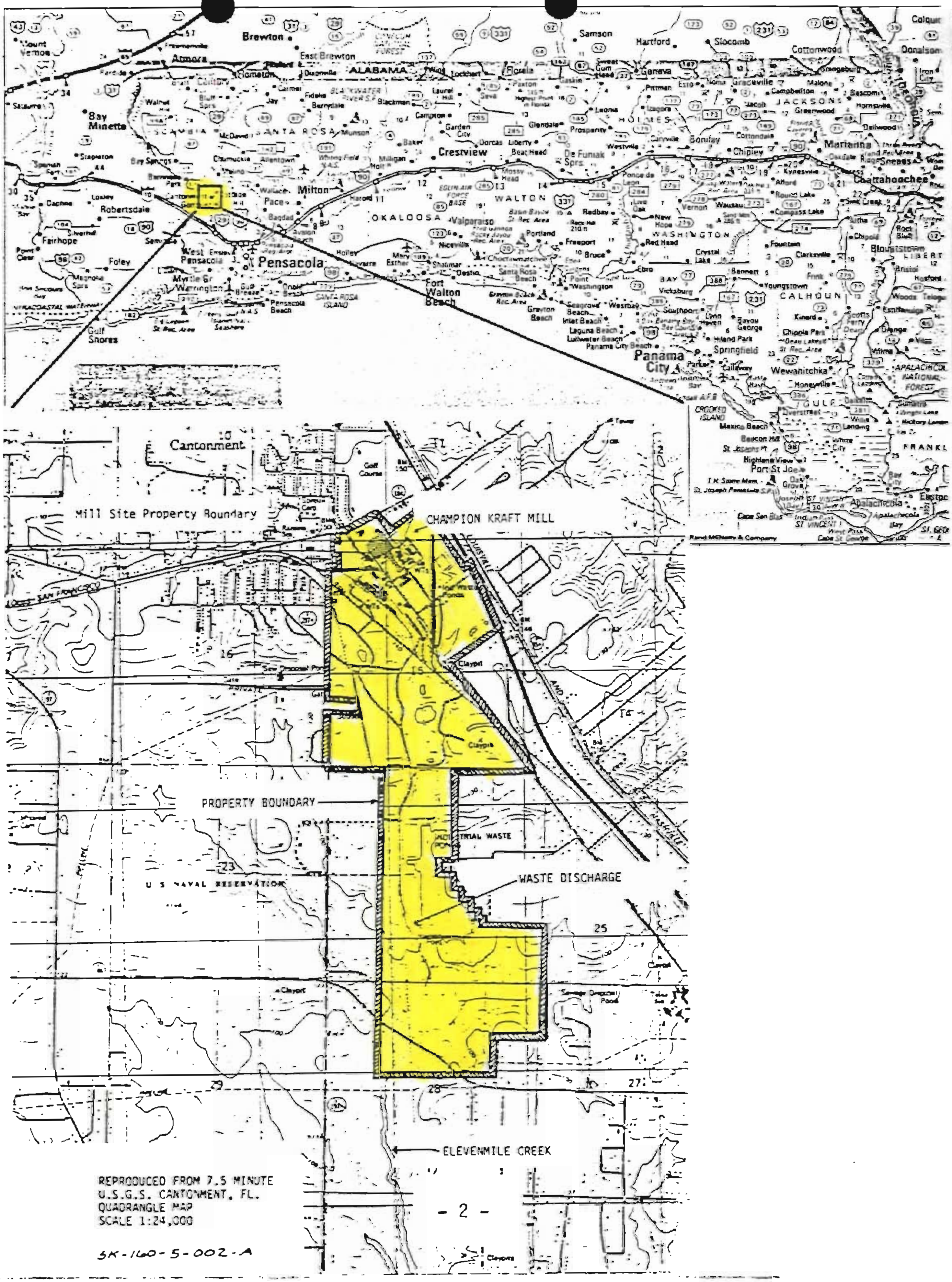


Figure 2

FIGURE 3 LOCATION OF CHAMPION FACILITY



REPRODUCED FROM 7.5 MINUTE
U.S.G.S. CANTONMENT, FL.
QUADRANGLE MAP
SCALE 1:24,000

SK-160-5-002-A

another example of information needed

and concentrator bodies also needed. ~~As well as~~ The function of each source and element of the system with pictures & diagrams. This will provide us with some of the needed RA & help adequately describe the affected sources in order to avoid future misunderstandings about your permit.

13. Please provide air quality modeling to show the degree of increment consumption expected to result from the proposed changes.

~~12. It appears that production increases for both NSPS and non NSPS sources have occurred si~~

12. It appears from the application that substantial increases in operation rates may have occurred since PSD-FL-029 was issued. Since these rates have the potential to increase actual emissions -- please explain and quantify the emission increases. Where appropriate all provisions of 17-2.500 & 17-2.660 will need to be complied with. If emission increases did not occur please explain and justify. Each pollutant listed in Table 500-2 will need to be addressed.

A complete description of all changes leading to the increased operation rates will be needed. These are to include the dates on which any such changes occurred.

We note increases in pulp production rates for the Kamyr system. These increase

Additional questions identify

Please describe any physical or operational changes that have been made to any of the sources connected to the NCG system since ~~1981~~ 9/24/76. Quantify the effect on TADP production max, hrly & daily for each source. Also, quantify effect on actual emissions. Need to know if other sources have been affected.

In order to issue a permit we need to specifically know which changes are to be made.

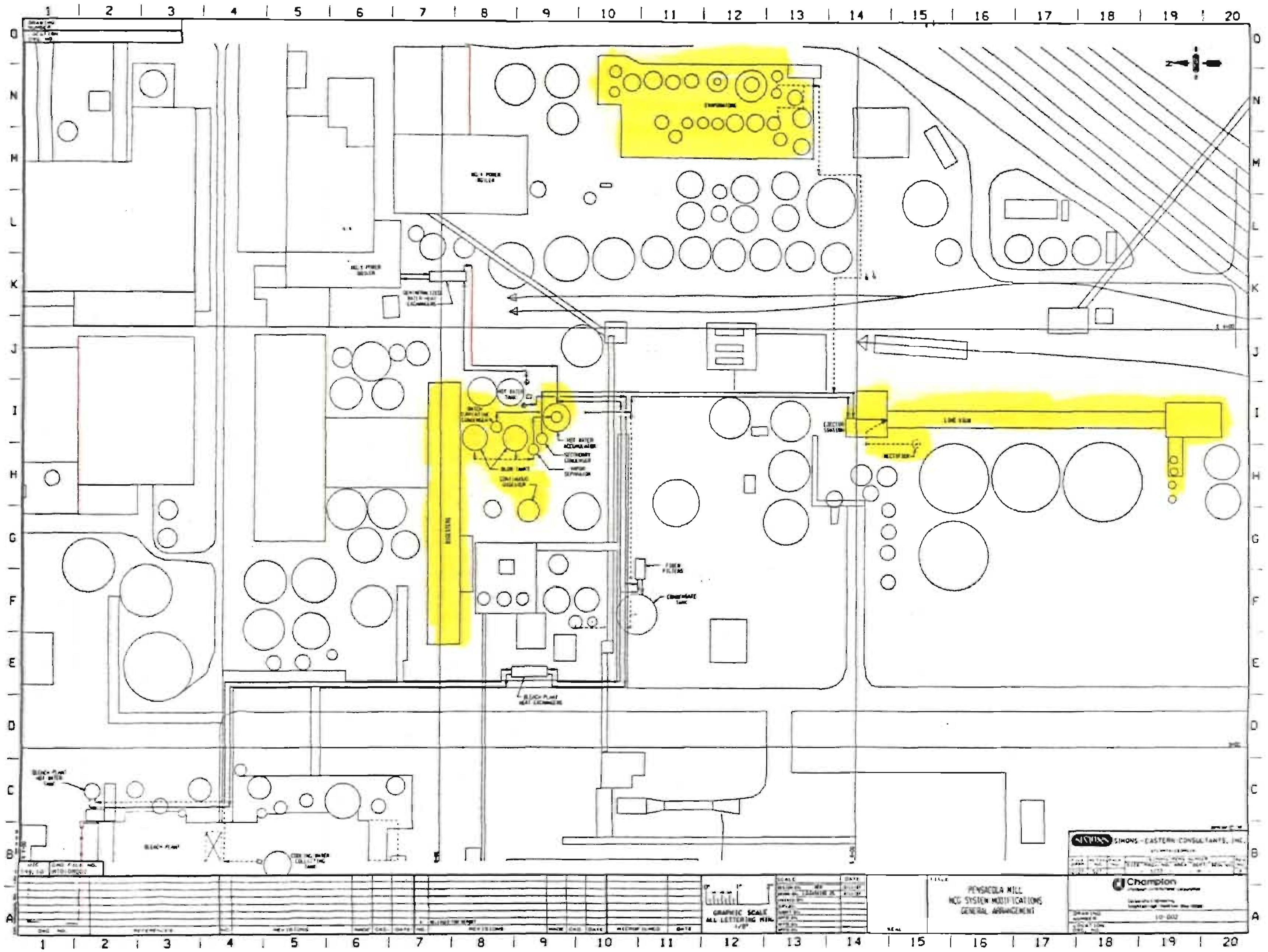

SIMONS - EASTERN CONSULTANTS, INC.
Champion
PENSACOLA MILL
NCG SYSTEM MODIFICATIONS
GENERAL ARRANGEMENT

Figure 4

ADD 1. Identify an emission points at the affected sources that will remain uncontrolled & explain why.

✓ 1. The pg. with the PE's sign. & seal has not been received.

✓ 2. The fee is inadequate because it is to be calculated on the basis of max. SO_2 emissions from each source in terms of H_2S converted to SO_2.

✓ 3. A number of changes being considered have been listed in Attachment A. Please explain each of the changes and how the performance of the NCG will be affected.

✓ 4. Please describe & explain the operation of a rectifier. Also explain what the lime kiln rectifier burner does.

✓ 5. The application needs to include each source that is to be connected to the NCG system and the control device. Please fully describe each source and control device and provide all information requested in the application. The lime kiln is both a source and control device. – NCG system is not a source in and of its self

✓ 6. Each question in Section II. F. on page 3 of 12 needs to be specifically answered. Also, an 8½" x 11" copy of the USGS quadsheet needs to be provided.

✓ 7. Please provide derivations of both the chemical & raw material inputs for each of the ~~...~~ affected sources & the product output. These should include ultimate gravimetric analyses of components such as black liquor, white liquor, etc. All flow ~~rates~~ rates should be expressed as maximums in units of mass/time. It would ~~be~~ facilitate the permitting process to know the max. pounds of dry BLS/TADP of air dry pulp for each type of digester.

8. For each affected source please identify the emission points that will be vented to the NCG system. It would be helpful if Fig.'s 1 & 2 could be enlarged to be more legible. "ADD 1.

9. Please identify the maxi quantity of gas that each emission point will emit to the NCG system and/or the atmosphere. The data needs to include the max. gas volume (ACFM & DSCFM), temp., vel., and % H_2O. We will also need the max. ht. of any emission pts. to the atmosphere.

10. We will need the maximum quantity of ~~pollu~~ each pollutant in pounds per hr & tons/year that each affected source will emit to the NCG system and/or atm. This information is needed ~~to~~ for the situation ~~preceeding~~ prior to the proposed changes & following proposed changes. Please note that the lime kiln is both a source and control device that is to be included. Please provide complete derivations of control device efficiencies. Note that the federal retention time and ~~temp.~~ temp. req. for incineration were based on achieving 5ppm. Also note that if 100% SO_2 removal is claimed for the lime kiln and/or its scrubber, ~~than~~ then the conclusions will need to be justified and & the documented.

11. Please fully describe each source that is to be connected to the NCG system, the NCG system, and the source that is to act as the control device (function of each). For example, we need to know the no. of batch digesters, ~~the type of~~ accumulators, blow tanks, etc. We also need to know the type of digester heating employed. ~~...~~ The no. of effects and bodies in each ~~evaporator~~ MEES is needed. The no. of concentrators

	Mol. Wt.	%	=	Sol. (pph by wt.) H_2O	Alcohol	Ether	°F
Naphthalene	128.16	33.1	42.42	$0.003^{25°}$	$9.5^{19.5°}$	v.s.; $46^{16°}$ bz	Melt 176.4 Boil 424.2
Methylnaphthalene (1 & 2)	142.19	7.5	10.72	i.	v.s.	v.s.	Melt -2.2 Boil 472.3
Acenaphthene	154.20	7.7	11.87	i.	s.h.	s. chl.	Melt 203.0 Boil 534.2
Dibenzofuran	168.20	3.8	6.39	i.; s. bz.	s.h.	v.s.	Melt 188.6 Boil 550.4
Fluorene	166.21	7.0	11.63	i.; i. NH_3	s.h.	s.	Melt 240.8 Boil 563.0
Phenanthrene	178.22	18.9	33.68	i.; s. CS_2	$2^{14°}$; 10h.	v.s.; s. bz	Melt 212.0 Boil 644.0
Anthracene	178.22	4.4	7.84	i.	$1.9^{20°}$	$12.2^{100°}$	Melt 424.4 Boil 647.6
Carbazole	167.20	2.4	4.01	i.; s. bz.	$0.92^{14°}$; 3.88 h	sl. s.;	Melt 472.6 Boil 670.6
Fluoranthene	202.26	8.6	17.39	i.	v.s.h.	v.s.	Melt 230.0 Boil 483.8
Pyrene	202.24	6.6	13.35	i.	3.1 h. abs.	v.s.	Melt 302.0 Boil 680.0

Remaining Percentage?

$$M_V = 131.50$$

Assume 40,000 gal of mix   Assume capacity = 40,000 gal

$D = 20$ ft $\Delta T = 20°F$

$H_{TOTAL} = 18$ ft $+ 9$ ft

$$L_B = (2.26E-02)(131.50)\left(\frac{0.079}{14.696-0.079}\right)^{0.68}(20)^{1.73}(9)^{0.51}(20)^{0.50}(1.58)(0.9)(1)$$

$$= 296.6 \text{ lb/yr}$$

$$L_W = (2.4E-05)(131.50)(0.079)(40,000)(12)(1)(1) = 119.7 \text{ lb/yr}$$

SJFPC CONSTRUCTION PERMIT APPLICATIONS

NCG	lbs/hr
MEE SYSTEM	- 221.5
BATCH DIGESTER SYSTEM	- 87.5
CONTINUOUS DIGESTER SYSTEM	- 67.4
TOTAL H_2S	- 376.4

$SO_2 = 376.4 \times \left(\frac{64}{34}\right) = 708.5$ lbs/hr or 3103.2 TPY

EFF. REQ'D TO ACHIEVE 40 TPY

$\eta = \left[1 - \frac{40}{3103.2}\right] \times 100 \approx 98.71\ \%$

AN EFFICIENCY GREATER THAN 98.7 % WILL BE REQUIRED TO AVOID PSD.

STONE CONSTRUCTION PERMIT APPLICATION

NCG	TPY
MEE SYSTEM	- 334.4
BATCH DIGESTER SYSTEM	- 501.6
TOTAL H_2S	- 836.0

$SO_2 = 836.0 \times \left(\frac{64}{34}\right) = 1573.6$ TPY

EFF. REQ'D TO ACHIEVE 40 TPY

$\eta = \left[1 - \frac{40}{1573.6}\right] \times 100 \approx 97.5\ \%$

AN EFFICIENCY GREATER THAN 97.5 % WILL BE REQUIRED TO AVOID PSD

GEORGIA-PACIFIC CONSTRUCTION PERMIT APPLICATION

NCG	lb/hr
MEE SYSTEM	- 274.0
BATCH DIGESTER SYSTEM	- 434.0
CONDENSATE STRIPPER SYSTEM	- 76.0
TOTAL H_2S AS SO_2	- 784.0 OR 3434 TPY

EFF. REQ'D TO ACHIEVE 40 TPY

$\eta = [1 - \frac{40}{3434}] \times 100 \approx 98.8\%$

AN EFFICIENCY OF GREATER THAN 98.8% WILL BE REQUIRED TO AVOID PSD

CHAMPION INTERNATIONAL CONSTRUCTION PERMIT APPLICATION

NCG	TPY
MEE SYSTEMS	-
BATCH DIGESTER SYSTEM	-
KAMYR™ DIGESTER SYSTEM	-
CONDENSATE STRIPPER SYSTEM	-
TOTAL H_2S	70

$SO_2 = 70 \times (\frac{64}{34}) = 131.8$

EFF. REQ'D TO ACHIEVE 40 TPY

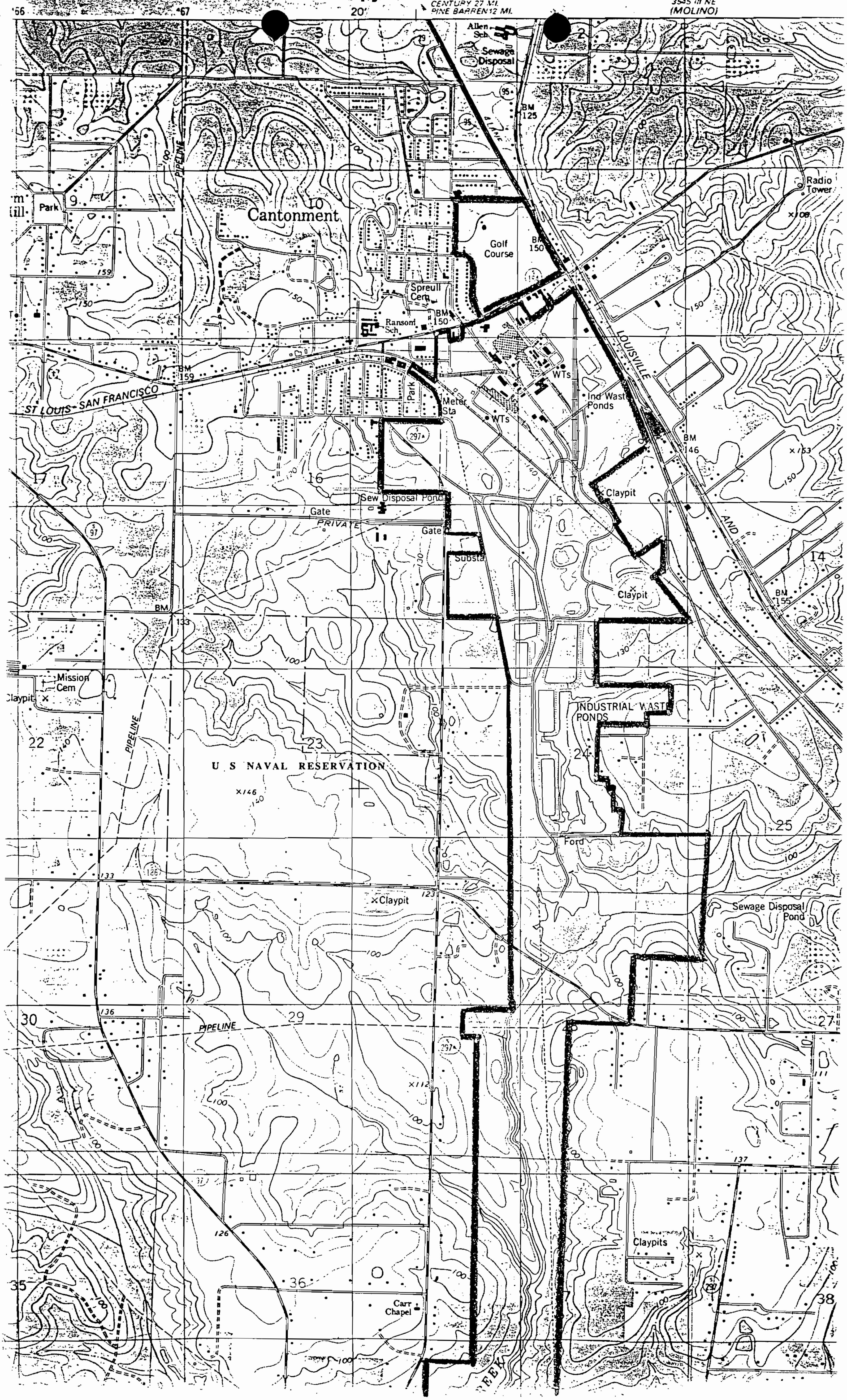
$\eta = (1 - \frac{40}{131.8}) \times 100 = 69.7\%$

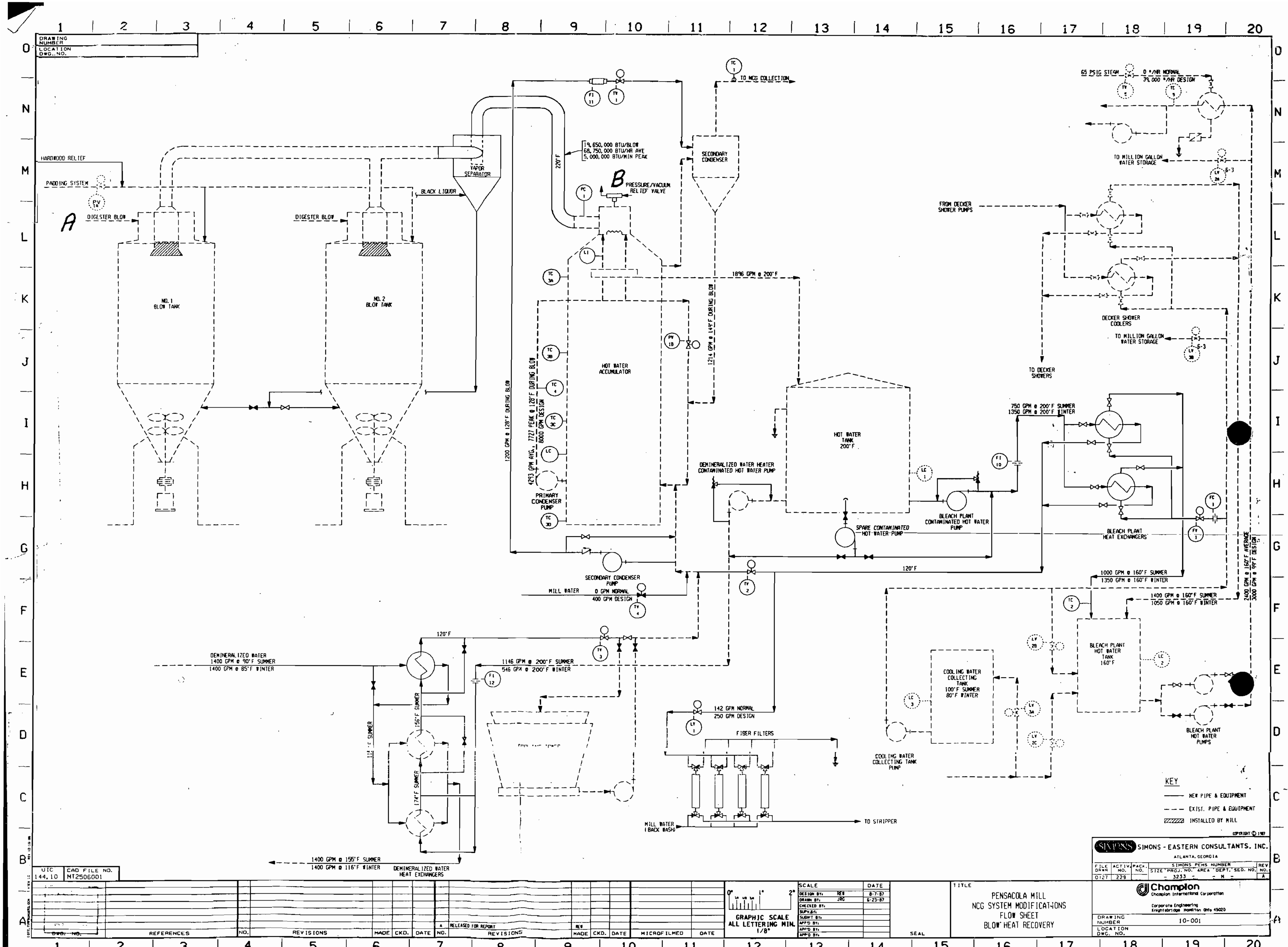
AN EFFICIENCY GREATER THAN 69.7% WILL BE REQUIRED TO AVOID PSD.

NOTE: EXISTING SOURCE NCG ORIGINALLY INSTALLED PURSUANT TO AC-506 AND AC-509 ISSUED 11/14/72, INSTALLED 1974, & AO 17-2120 ISSUED 7/15/75. NEW SOURCE NCG INSTALLED PURSUANT TO PSD-FL-029.

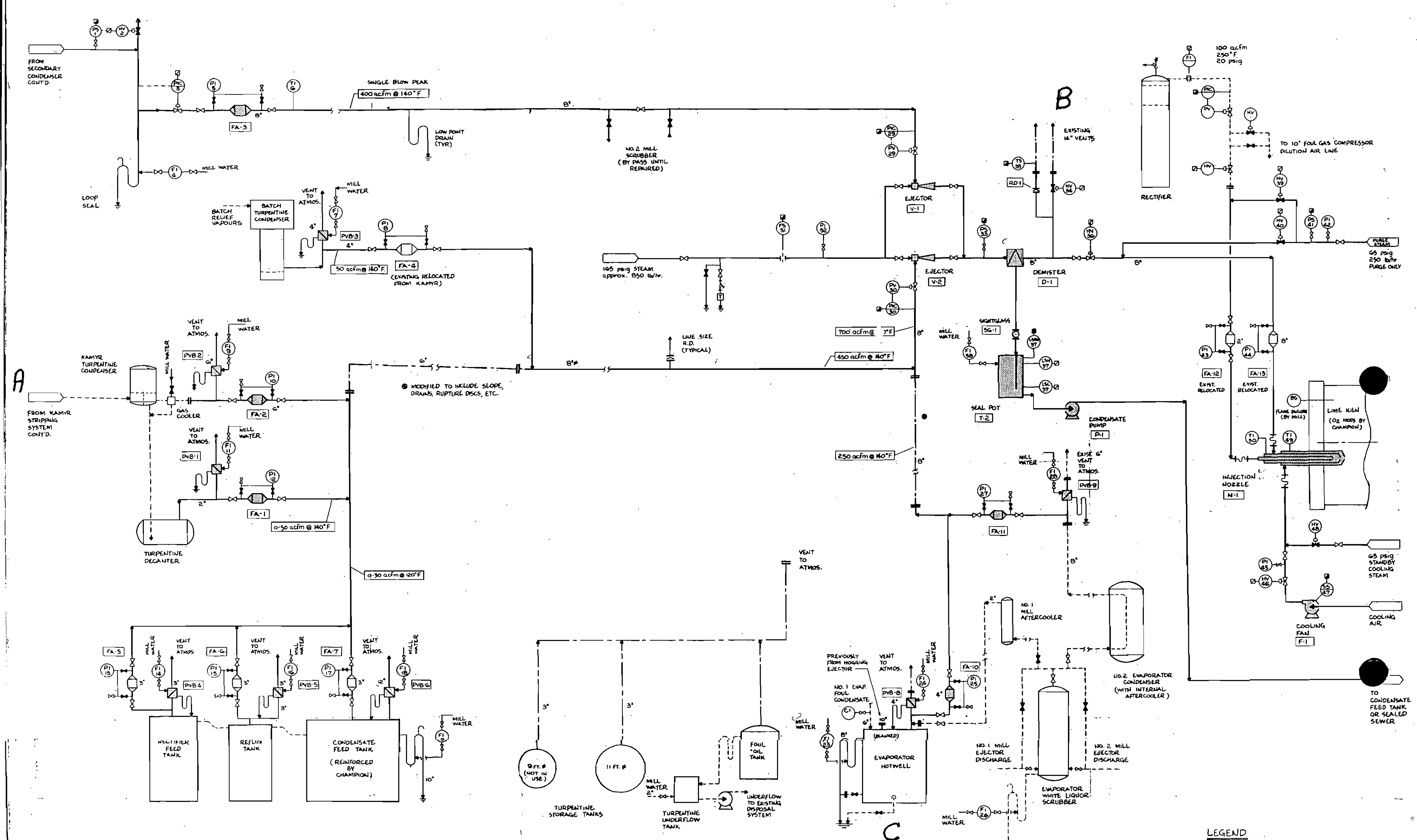
Best Available Copy

FIGURE 3





DRAWING NUMBER
LOCATION DWG. NO.
HARDWOOD RELIEF
PADDING SYSTEM
A
DIGESTER BLOW
DIGESTER BLOW
NO. 1 BLOW TANK
NO. 2 BLOW TANK
VAPOR SEPARATOR
BLACK LIQUOR
TO NCG COLLECTION
19,650,000 BTU/BLOW
68,750,000 BTU/HR AVE
5,000,000 BTU/MIN PEAK
220°F
B
PRESSURE/VACUUM RELIEF VALVE
SECONDARY CONDENSER
HOT WATER ACCUMULATOR
1896 GPM @ 200°F
1214 GPM @ 149°F DURING BLOW
1200 GPM @ 128°F DURING BLOW
4293 GPM AVG., 7727 PEAK @ 128°F DURING BLOW 8000 GPM DESIGN
PRIMARY CONDENSER PUMP
SECONDARY CONDENSER PUMP
MILL WATER
0 GPM NORMAL
400 GPM DESIGN
DEMINERALIZED WATER HEATER CONTAMINATED HOT WATER PUMP
HOT WATER TANK 200°F
SPARE CONTAMINATED HOT WATER PUMP
BLEACH PLANT CONTAMINATED HOT WATER PUMP
120°F
65 PSIG STEAM
0 #/HR NORMAL
39,000 #/HR DESIGN
TO MILLION GALLON WATER STORAGE
FROM DECKER SHOWER PUMPS
DECKER SHOWER COOLERS
TO DECKER SHOWERS
750 GPM @ 200°F SUMMER
1350 GPM @ 200°F WINTER
BLEACH PLANT HEAT EXCHANGERS
1000 GPM @ 160°F SUMMER
1350 GPM @ 160°F WINTER
1400 GPM @ 160°F SUMMER
1050 GPM @ 160°F WINTER
2400 GPM @ 160°F AVERAGE
3000 GPM @ 99°F DESIGN
BLEACH PLANT HOT WATER TANK 160°F
COOLING WATER COLLECTING TANK 100°F SUMMER 80°F WINTER
COOLING WATER COLLECTING TANK PUMP
BLEACH PLANT HOT WATER PUMPS
DEMINERALIZED WATER
1400 GPM @ 90°F SUMMER
1400 GPM @ 85°F WINTER
120°F
1146 GPM @ 200°F SUMMER
546 GPM @ 200°F WINTER
155°F SUMMER
174°F SUMMER
142 GPM NORMAL
250 GPM DESIGN
FIBER FILTERS
MILL WATER (BACK WASH)
TO STRIPPER
1400 GPM @ 155°F SUMMER
1400 GPM @ 116°F WINTER
DEMINERALIZED WATER HEAT EXCHANGERS
KEY
NEW PIPE & EQUIPMENT
EXIST. PIPE & EQUIPMENT
INSTALLED BY MILL
COPYRIGHT © 1987
SIMONS - EASTERN CONSULTANTS, INC.
ATLANTA, GEORGIA
3233
Champion
Champion International Corporation
Corporate Engineering
Knightsbridge Hamilton Ohio 45020
DRAWING NUMBER 10-001
TITLE
PENSACOLA MILL
NCG SYSTEM MODIFICATIONS
FLOW SHEET
BLOW HEAT RECOVERY
GRAPHIC SCALE
ALL LETTERING MIN. 1/8"
SCALE
DATE
8-7-87
6-23-87
SEAL
UIC 144.10
CAD FILE NO. MT2506001
REFERENCES
REVISIONS
RELEASED FOR REPORT
MICROFILMED



NOTE: TURPENTINE STORAGE TANKS AND FOUL OIL TANK NOT TO BE COLLECTED IN MODO-CHEMETICS NCG SYSTEM (SEE STUDY)

LEGEND

- NEW EQUIPMENT
- EXISTING EQUIPMENT
- — NEW PIPING
- --- EXISTING PIPING
- -·- EXISTING MODIFIED PIPING

No.	ISSUED FOR	BY	DATE
A	STUDY ISSUE	D.H.	05-04-87
B	STUDY REVISION	D.H.	05-27-87

CHAMPION INTERNATIONAL CORP.
CANTONMENT, FLORIDA
NCG COLLECTION & INCINERATION SYSTEM
STUDY FLOWSHEET

MoDo-Chemetics, VANCOUVER B.C. CANADA
DATE MAY 1, 1987 SCALE NONE FILE 204-3941
DRN D.S.H.
DWG. No. E-3941-1401

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL 2915-4]

Review and Amendment of Standards of Performance for New Stationary Sources; Kraft Pulp Mills

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Standards of performance for kraft pulp mills were proposed on September 24, 1976 (41 FR 42012), and promulgated on February 23, 1978 (43 FR 7568). On January 19, 1984, revisions to the standards of performance for kraft pulp mills were proposed in the **Federal Register** (49 FR 2448). Today's action promulgates these revisions and announces the Agency's decision on other elements of the standard which were reviewed. The revised standards apply to new, modified, and reconstructed kraft pulp mills, for which construction was commenced after September 24, 1976. These standards implement Section 111 of the Clean Air Act and are based on the Administrator's determination that kraft pulp mills cause, or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The intended effect of these standards is to require all new, modified, and reconstructed kraft pulp mills to achieve emission levels reflecting the best demonstrated system of continous emission reduction, considering costs, nonair quality health, and environmental and energy impact.

EFFECTIVE DATE: May 20, 1986.

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice is available only by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

ADDRESSES: *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Kraft Pulp Mills—Background Information for Promulgated Revisions to Standards" [EPA 450/3-85-020]. The BID contains: (1) A summary of all the public comments made on the proposed standards and the Administrator's response to the comments, (2) a summary of the changes made to the standards since proposal, and (3) the final Environmental Impact Statement which summarizes the impacts of the revisions.

Docket. A docket, number A-82-36, containing information considered by EPA in development of the promulgated standards, is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section (A-130), West Tower Lobby, Gallery 1, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT:

For Policy Questions: Mr. Doug Bell, Standards Development Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541-5578.

For Technical Questions: Mr. Kenneth Durkee or Mr. James Eddinger, Industrial Studies Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541-5601.

SUPPLEMENTARY INFORMATION:

I. The Standards

Standards of performance for new sources established under section 111 of the Clean Air Act reflect:

> . . . application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated [section 111(a)(1)].

For convenience, this will be referred to as "best demonstrated technology" or "BDT."

On September 24, 1976, new source performance standards (NSPS) were proposed for kraft pulp mills under section 111 of the Clean Air Act (41 FR 42012). These regulations were promulgated on February 23, 1978 (43 FR 7568). The standards limit emissions of particulate matter (PM) and total reduced sulfur (TRS) from new or modified recovery furnaces, smelt dissolving tanks, lime kilns, digester systems, multiple effect evaporator systems, black liquor oxidation systems, brown stock washer systems, and condensate stripper systems that have been constructed, modified, or reconstructed after September 24, 1976.

The PM emission limits are: 0.10 grams per dry standard cubic meter (g/dscm) at 8 percent oxygen for recovery furnaces: 0.10 grams per kilogram of black liquor solids (dry weight) (g/kg BLS) for smelt dissolving tanks; 0.15 g/dscm at 10 percent oxygen for lime kilns burning gas; and 0.30 g/dscm at 10 percent oxygen for lime kilns burning oil. Visible emissions from recovery furnaces are limited to 35 percent opacity.

The TRS emission limits are: 5 parts per million by volume (ppmv) at 8 percent oxygen from straight kraft recovery furnaces; 25 ppmv at 8 percent oxygen from cross recovery furnaces; 8 ppmv at 10 percent oxygen from lime kilns; and 5 ppmv at the actual oxygen content of the untreated gas stream from digester systems, multiple-effect evaporator systems, brown stock washer systems, black liquor oxidation systems, and condensate stripper systems. The TRS emissions from smelt dissolving tanks are limited to 0.0084 g/kg BLS.

The standards also require continuous monitoring, recordkeeping, and excess emission reporting. The opacity of recovery furnace exhaust gases must be monitored continuously, and a record of these measurements must be maintained. The concentration of TRS emissions from recovery boilers and lime kilns must be monitored continuously and a record of these measurements must be maintained. The incineration temperature of effluent gases from digesters, brown stock washers, multiple-effect evaporators, black liquor oxidizers, or condensate strippers must be monitored. Finally, the gas stream pressure drop and liquid supply pressure for any scrubber controlling emissions from lime kilns or smelt dissolving tanks must be continuously monitored. Records of 12-hour average TRS concentrations and 12-hour oxygen concentrations must be maintained on a daily basis. Quarterly reports of excess TRS emissions, excess opacities, and inadequate incineration temperatures are required as well.

Today's rulemaking promulgates six revisions and two corrections to the standards. These revisions will: (1) Exempt black liquor oxidation systems from the standards; (2) revise the existing TRS standard for smelt dissolving tanks from 0.0084 g TRS per kg of black liquor solids (g TRS/kg BLS) to 0.016 g TRS/kg BLS; (3) revise the units of the TRS standard for smelt dissolving tanks; (4) delete the requirement to monitor the combustion temperature in lime kilns, power boilers, or recovery furnaces; (5) change the frequency of excess emission reports from quarterly to semiannually; and (6) exempt diffusion washers from the TRS standard for brown stock washer systems. The corrections would: (1) Require measurements of temperature, pressure drops and liquid feed rates for control devices which must be monitored must also be recorded; and (2) correct the reference in § 60.284(d)(3)(ii) from § 60.283(a)(1)(ii) to § 60.283(a)(1)(iii). In this second instance, the original standard erroneously referred to reporting of excess emissions when recovery boilers are used as incineration devices. The corrected standard refers to facilities where incineration devices not subject to Subpart BB are used for incineration of TRS emissions from facilities subject to the standard.

In the overall context of this source category, all of the changes to the existing standards of performance are minor. Nevertheless, they are appropriate because they change the numerical emission limit for smelt dissolving tanks to reflect the performance of BDT, improve the overall cost effectiveness of the existing standards with little increase in TRS emissions, and reduce reporting and recordkeeping requirements.

II. Summary of Environmental, Energy, and Economic Impacts

The revisions will not significantly affect nationwide particulate matter emissions, solid waste generation, water quality, or energy consumption. Deleting the TRS standard for black liquor oxidation (BLO) tanks may increase TRS emissions from the only affected kraft pulp mill by up to 16 tons per year in the fifth year following proposal. The full increase of 16 tons would be equivalent to 42 percent of the mill's controlled TRS emissions, or about 0.5 percent of its uncontrolled emissions. The exemption of diffusion washers from the TRS standard for brown stock washers will cause no increase in TRS emissions. Changing the smelt tank TRS standard will increase TRS emissions by about 6 tons annually in the fifth year following proposal. This projection is based on the assumptions that the affected facility which failed previous tests for compliance with the original NSPS will continue to perform as it has in the past and that one similar affected facility will be constructed in the future. This increase represents 8 percent of a mill's controlled TRS emissions, or about 0.2 percent of its uncontrolled TRS emissions.

There will be a maximum cost savings of $500,000 associated with the removal of the TRS standard for BLO tanks. This projection is based on our finding that one mill may stop controlling TRS emissions from its BLO tank at promulgation of the revised standards. The savings is in operating costs, and has no capital component. The savings in annual costs which will result from exempting diffusion washers from the NSPS is estimated to be $610,000 in the fifth year. There will be no significant cost impacts associated with any of the other revisions to the NSPS.

The environmental, energy, and economic impacts are discussed in greater detail in the BID for the promulgated standards, "Kraft Pulp Mills—Backgound Information for Promulgated Revisions to Standards" [EPA 450/3–85–020].

III. Public Participation

Prior to proposal of the standards, interested parties were advised by public notice in the **Federal Register** (48 FR 12825, March 28, 1983) of a meeting of the National Air Pollution Control Techniques Advisory Committee to discuss the revisions recommended for proposal. This meeting was held on April 27, 1983. The meeting was open to the public and each attendee was given an opportunity to comment on the revisions recommended for proposal. The proposed revisions were published in the **Federal Register** on January 19, 1984 (49 FR 2448). The preamble to the proposed revisions discussed the availability of the BID, "Review of New Source Performance Standards for Kraft Pulp Mills" [EPA 450/3–83–017], which described in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal and, when requested, copies of the BID were distributed to interested parties. To provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed standards, a public hearing was scheduled for February 21, 1984, at Research Triangle Park, North Carolina. A hearing was not held becasue one was not requested. The public comment period was from January 20, 1984, to March 9, 1984.

Twenty-eight (28) comment letters were received relative to the proposed standards of performance for kraft pulp mills. The comments have been carefully considered and, where determined to be appropriate by the Administrator, changes have been made in the proposed standards.

IV. Significant Comments and Changes to the Proposed Standards

Comments on the proposed standards were received from industry, Federal agencies, State and local air pollution control agencies, and trade associations. A detailed discussion of these comments and responses can be found in the BID, which is referred to in the **ADDRESSES** section of this preamble. The summary of comments and responses in the BID serve as the basis for the revisions which have been made to the standards between proposal and promulgation. The major comments and responses are summarized in this preamble. Most of the comment letters contained multiple comments. The comments have been divided into the following areas: Emission Control Technology and Selection of Emission Limits.

Emission Control Technology

Diffusion Washers

Two comments contain the findings and resulting recommendations of a study performed by an industry council to quantify TRS emissions from diffusion washers. That study examined 9 diffusion washer vents and the mean mass emission rate was found to be 0.001 lb., or less, TRS per ton of air dried pulp (TADP). Such emission levels are two orders of magnitude less than those from uncontrolled vacuum drum washer systems. Using the same cost estimating procedures employed by EPA for the case of vacuum drum washer systems, the industry calculated the cost effectiveness (C/E) of further controlling these emissions to be $240,000 per ton of TRS removed. Three commenters said that those findings preclude EPA from reasonably supporting the need to control diffusion washer vent gases on an emission significance or economic basis. They note that there would be no advantage to setting mass emission limits and that imposing measurement and reporting requirements would be burdensome. Too commenters support the above findings and conclusions. One commenter noted that diffusion washers may meet the existing standards without a control device.

One commenter disagrees with the others and says that diffusion washers should not be exempted outright from having TRS controls. This commenter believes each individual source should be required to demonstrate that emissions from its uncontrolled diffusion washers can meet the same TRS standards as controlled vacuum washers.

The study submitted on TRS emissions from diffusion washers has been reviewed by the Agency. The Agency agrees that uncontrolled TRS emissions from diffusion washers are less than 0.001 lb TRS/TADP. This level is orders of magnitude less than that of uncontrolled vacuum drum washers (0.3 lb TRS/TADP) and is also many times lower than the mass equivalent of the NSPS. The equivalent mass emission rate for the 5 ppm NSPS, based on the vacuum drum washer, is about 0.09 lb TRS/TADP. Because of the low mass of TRS emissions controlled and the low air volumes treated, requiring control of TRS emissions from diffusion washers to the 5 ppm TRS level would result in a C/E in the range of $240,000 per ton of TRS removed. Therefore, the Agency has determined that requiring diffusion washers to meet the 5 ppmv TRS standard would be unreasonable.

For several reasons, revision of the NSPS to a mass-equivalent TRS standard would also be unreasonable. As the available data indicated, uncontrolled TRS emissions from diffusion washers are many times lower than the mass equivalent of the NSPS. As such, requiring diffusion washers to demonstrate compliance with a mass equivalent NSPS would impose unnecessary costs for testing and reporting requirements. In addition, an EPA reference sampling method would have to be developed and promulgated since the present EPA Reference Method 1 is insufficient for sampling the low velocity, low volume, and cyclic gas stream emitted from a diffusion washer.

Development of a separate standard for TRS emissions from diffusion washers would require a major commitment of Agency resources to study a process which produces very low mass emissions. Such a standard would have to include a control technology which, in this case, would undoubtedly be incineration and the cost has been estimated to be in the range of $240,000 per ton TRS removed. Because projected control costs are high and potential benefits are negligible, the Agency has concluded that development of an NSPS for TRS emissions from diffusion washers is not appropriate.

Noncontact Recovery Furnaces With Wet-Bottom Electrostatic Precipitators (ESP's)

At the time the NSPS were developed, use of the direct contact furnace system was prevalent in the industry and available information indicated that the contacting of furnace flue gases with unoxidized black liquor in direct contact evaporators was causing high levels of TRS emissions. Therefore, the Agency tested direct contact furnaces equipped with BLO systems. Particulate emissions from these sources were controlled by wet-bottom ESP's through which the oxidized black liquor was passed. Also, the Agency tested a noncontact recovery furnace system, which eliminates the contact of flue gas and black liquor altogether, which in turn eliminates the need for BLO equipment. This furnace system had a dry-bottom ESP for control of particulate emissions. As a result of these tests, the BDT for control of TRS emissions from noncontact furnace systems was determined to be maintenance of proper combustion conditions and black liquor firing rates and, for direct contact furnace systems, was determined to be maintenance of proper combustion conditions and oxidation of black liquor. For both furnace types, ESP's were determined to be BDT for achieving the required limits for PM emissions.

Since the development of the NSPS, the paper industry's National Council for Air and Stream Improvement (NCASI) in 1978 investigated the possible use of unoxidized black liquor in wet-bottom ESP's and concluded that use of unoxidized black liquor in wet-bottom ESP's would not cause violations of the TRS emission limit. In 1979, another industry study concluded the wet-bottom ESP's were more reliable and less costly to operate than dry-bottom ESP's that were in use at that time. Following these studies, wet-bottom ESP's utilizing unoxidized black liquor were installed on ten noncontact recovery furnaces subject to the NSPS. In 1982 it became apparent that some of them were having difficulty in achieving the 5 ppmv TRS standard. During the same time period, four noncontact recovery furnaces were installed with dry-bottom ESP's. Two recovery furnaces of the direct contact design were equipped with wet-bottom ESP's which used oxidized black liquor in the bottoms. All six recovery furnaces which installed the technology upon which the NSPS were based have achieved those standards.

In early 1984, when the revisions resulting from the 4-year review were proposed, the extent of the problems with the wet-bottom ESP's and potential corrective measures were not fully understood. The NCASI was then in the midst of a major study which was conducted to identify the causes of TRS release from unoxidized black liquor and to develop means of eliminating excess emissions from the ESP's. In the proposal, the Agency stated that it was reasonable to delay completion of the review of the TRS standard for recovery furnaces long enough to allow NCASI sufficient time to perform its study.

Seven different commenters agreed with the EPA proposal to delay review of the existing TRS standards for recovery furnace systems as they pertain to facilities which have installed wet-bottom ESP's. All agreed that any possible changes which would take into consideration the performance of noncontact recovery furnaces equipped with wet-bottom ESP's using unoxidized black liquor should be delayed until NCASI completed its studies of these systems. One commenter noted that it has been demonstrated that wet-bottom ESP's can achieve the existing TRS standard. They conclude that any changes to the current TRS standard should pertain only to wet-bottom ESP's and that any possible changes should be delayed only until the NCASI study is complete. One commenter said that EPA should resist any change in the existing standards and that EPA should explore the use of non-TRS bearing water in the wet-bottom ESP's.

Since proposal, much work has been done by NCASI and by individual affected firms in an attempt to fully understand and correct the problem. The NCASI study has identified several factors which are contributing to the problem. These include inlet baffling design, liquor temperature, liquor level, degree of agitation, and liquor chemistry. To date, modifications to mitigate the first four factors have been made in most instances where they appeared feasible. The results of the modifications differed from mill to mill and were not always successful for reducing TRS emissions. Similarly, efforts by individual mills to control or modify the chemistry of liquors used in the wet ESP's have given mixed results. After making various combinations of modifications, some facilities have achieved, or have come very close to achieving, the 5 ppmv TRS standard. However, according to industry assessments, several furnaces appear unable to consistently achieve better than 15 ppmv and some appear unable to consistently achieve better than 25 ppmv while using unoxidized black liquor in the ESP.

The EPA has reviewed available data and the steps which industry have taken. It is clear from this that NCASI and individual firms have expended considerable resources in their attempts to identify and correct the causes of TRS release from unoxidized black liquor used in wet-bottom ESP's. The Agency agrees that the recovery furnace TRS standard is probably not consistently achievable at all sources when such liquor is used in the ESP's. However, based on its review of the industry studies, the factors which are causing excess emissions, and of potential remedies, EPA has concluded that the standard for recovery furnace TRS emissions should not be revised. In reaching this conclusion, the Agency recognizes that the decisions to install the wet-bottom precipitators were made based on the available industry data which indicated that the TRS emission limit would not be violated. But, there were other options available and those options were employed at other facilities. Furthermore, retrofit options are available which will allow the sources with wet-bottom ESP's to achieve compliance with the TRS emission limit. For example, two mills have made piping changes which allow them to use fresh water in wet-bottom ESP's and the level of the NSPS for TRS has been achieved. In addition, mills have the option of converting the bottoms of their ESP's from the wet to the dry design. Although each of these options entails a retrofit with annualized costs ranging from $85,000 to $275,000 per mill and the associated TRS reduction could be small, EPA believes the costs of the retrofits are reasonable. When the annualized cost of installing and retrofitting a wet-bottom ESP are compared to the annualized costs of initially installing a dry-bottom ESP, the net difference in estimated annualized costs of retrofitting the wet-bottom ESP are reasonable and range from a savings of $40,000 to a cost of $100,000.

In conclusion, therefore, the Agency believes that changes to the NSPS for kraft recovery furnaces would be inappropriate and that those mills now out of compliance with the TRS standard should take the necessary steps to achieve compliance.

Degradation of Performance of ESP's

Three commenters disagree with the Agency's conclusion in the BID (EPA 450/3–83–017) that data from a 9-year-old ESP show that ESP's can reduce recovery furnace particulate emissions to NSPS levels over a long period of time when they are properly maintained. One commenter operates the ESP to which the three referred and this commenter says the data show that, even with maintenance, the ESP is not capable of achieving NSPS consistently. The commenter also said that it is inappropriate to draw conclusions about long-term performance of ESP's from data obtained from only one ESP.

A second commenter said that the data provided by the previous commenter clearly show an upward trend in emissions of PM with increasing age of the ESP and that EPA's judgment concerning the ability of ESP's to meet NSPS for particulate emissions over the long term is an inappropriate interpretation of data from a single location. The commenter presented long-term data from two other sources with ESP's designed to achieve emission levels similar or NSPS and said the data from all three sources showed an upward trend in particulate emissions with increasing age of the ESP's. The data from all three ESP's also showed that measured emissions, following major rebuilds of the ESP's were significantly higher than those achieved when the precipitators were new. The commenter attributed the increased emissions to such factors as buildups and corrosion in duct work, plenums and turning vanes, which can cause flow maldistributions.

The second commenter maintains that EPA has not thoroughly investigated the ESP degradation issue in its NSPS review. They also say that the Agency has not considered the costs of major rebuilds or lost production due to unscheduled repairs in the cost-effectiveness calculations.

The problem of gradual deterioration of ESP performance was investigated during the NSPS development and again during the NSPS review. During the NSPS development, the ESP vendors indicated that a properly maintained ESP should not deteriorate over the expected life of the unit. Problems encountered are usually due to operating the equipment at conditions for which it was not designed (i.e., higher gas volumes, higher inlet loadings, or lower inlet temperature). The main problem areas are corrosion and wire breakage.

The unit for which EPA obtained long-term particulate data, at the time it was installed, employed a new design which minimized wire breakage. This unit was tested by EPA as part of the data base for the NSPS. Additional data supplied by the State agency during the NSPS development indicated that the unit consistently achieved the NSPS level. During the NSPS review, the operator of this unit was again contacted to obtain information on maintenance costs and ESP performance. The maintenance costs for this unit had increased from 240 man-hours per year to an average of 913 manhours per year. These maintenance costs are higher than the estimate used by the Agency. If it could be shown that all of these costs are attributable to the NSPS, the incremental C/E of the NSPS is $200–$300 per ton, which is still reasonable. However, as noted, it is not clear that the increased maintenance costs are in fact due to the NSPS. The data indicated that after 10 years of operation, the unit was still capable of achieving the NSPS level. It is true, as the one commenter pointed out, that test data indicate that at times the unit has had emissions above the NSPS level. It must be pointed out that this unit is not subject to the NSPS and is only required to achieve a State regulation which is double the NSPS level. Therefore, this unit is maintained to achieve the State level as opposed to the NSPS level. It is the Agency's judgment that this unit could consistently achieve the NSPS if the frequency of maintenance were increased. The Agency's judgment is supported by the data supplied by one commenter which shows the performance of an ESP which is not subject to the NSPS but which is subject to a State standard about 25 percent lower than the NSPS. This latter unit has been operating for 10 years and has consistently achieved the NSPS levels.

The Agency's cost estimates do not include the cost of major rebuilds as was suggested by the commenters. The ESP's were widely used in the kraft pulp industry for recovery of process chemicals prior to establishment of NSPS and none of the information which has been reviewed indicates that major rebuilds are needed more frequently because of NSPS for PM. As a result of NSPS, new ESP's are designed with more plate area and additional maintenance costs for such items as replacement of broken wires would be possible. However, the need for major rebuilds, to repair corrosion damage, for example, is most likely attributable to process parameters, such as the flue gas temperature, and not related to the sizing of the EPS's. Since the NSPS does not affect the frequency of major rebuilds, it would be inappropriate to include the costs of rebuilds in the calculation of control costs.

Selection of Emission Limits

Smelt Dissolving Tanks (SDT)

Five different commenters were in agreement with EPA's decision to raise the TRS standard for SDT. However, they said that the increase should be greater than the one which was proposed. One commenter said that preliminary data from a new mill indicated that the proposed level needed to be doubled. In a follow-up letter, the commenter described the liquids being used in their scrubbers and noted that they planned to try and redirect sulfide-containing recycle streams from the SDT and scrubbers. In a third letter, the commenter said that efforts to modify their piping system to redirect sulfide bearing liquids away from the smelt tanks had been successful and that they had passed compliance tests. Thus, they withdrew their request for a higher TRS limit than that which was proposed.

A second commenter sent two letters describing experience at two of its mills. The commenter said that selection of the scrubbing liquid is the only known method of modifying TRS emissions associated with smelt tank vent gases. The commenter has examined the use of alternative scrubbing liquids and said that TRS emissions exceeded the standard even when fresh water was used in the scrubbers at one of the mills. They said their best results at the other mill were obtained when both the smelt tank scrubber and the lime kiln mud washer showers were operated on fresh water, which the commenter considers an artificial condition for that particular mill. The commenter submitted additional continuous monitoring data and said the new data showed variations similar to those in previously submitted information.

A third commenter said the proposed TRS level is a move in the right direction, but that two of its facilities cannot meet that level on a consistent basis. The commenter said that various scrubbing media had been tried but that no controllable process or control technology operating conditions had been identified which could limit TRS emissions from smelt tank vents. This commenter said its data (from 50 hours of continuous monitoring) supported a TRS limit well above the proposed level. Two comments by industry trade associations supported the first three commenters' observations and comments.

Emissions of TRS compounds are governed by the concentration of reduced sulfur compounds either in the smelt from the recovery furnace or in the water in the smelt tank. Additional TRS may be introduced if liquids contaminated with TRS compounds are introduced to the scrubbers used for control of PM. There is no means of controlling the introduction of reduced sulfur compounds via the smelt from the recovery furnace. However, the introduction of additional TRS compounds to the vent gases can be prevented, substantially reduced, by the selection of liquids to be used in the tanks and scrubbers. Preventing the introduction of TRS-contaminated liquids to the SDT system is the basis of BDT, which is, "to use a liquid that is low in sulfides and TRS compounds—such as fresh water or recycled water from the lime mud washer—in the smelt tank and particulate control device" (49 FR 2448). The date base used in the review to revise NSPS for TRS from 0.0084 g/kg BLS to 0.016 g/kg BLS includes two test reports from one mill which failed to comply with the 0.0084 g/kg emission limit. The operators of the mill indicated that they had used fresh water in their mud washers and that the weak wash had been used in both the smelt tank and scrubbers. Use of these types of liquids is considered to be BDT for reducing TRS emissions. They then experimented with various liquids in the scrubber, including fresh water. Since no reasons for the higher TRS emissions could be identified, and since the sources were applying BDT, the emission limit for TRS emissions was proposed to be raised to 0.016 g/kg BLS to reflect the results of these compliance tests.

Information supplied by the first commenter showed that relatively small flows of TRS-contaminated recycle streams were being introduced to the weak wash storage tanks and subsequently to the SDT's and scrubbers. The operators of the mill were reluctant to remove the recycle streams because they did not want to increase either water usage or the amount of wastewater to be treated. When the mill used BDT and removed the TRS contaminated liquids from the smelt dissolving system, they did pass tests for compliance with the current TRS standard. After passing the test, the commenter withdrew his initial comment that the TRS limit should be greater than 0.016 g/kg BLS.

The data supplied by the second commenter for one of their mills showed that they had been using contaminated condensate in their SDT scrubber recycle system. When the condensate was replaced with fresh water, TRS emissions began to drop. Later data from the same source showed that use of boiler blowdown (which is very low in residual sulfides) in the system reduced TRS emissions to NSPS levels. The commenter said that the best results were obtained when lime mud shower (which produces the weak wash used in the SDT) and SDT scrubber were operated on fresh water, but that this represents an artificial condition established solely to minimize TRS emissions. They say that operating in this manner causes an unusually high hydraulic loading on the effluent treatment system. The artificial condition described for the plant is what the Agency considers to be BDT. While the plant may not operate this way now, the Agency has concluded that using fresh water, or other liquids low in TRS compounds, to reduce TRS emissions is technically feasible and reasonable from a cost standpoint. The Agency continues to believe that if BDT is implemented, the TRS limit of 0.016 g TRS/kg BLS can be met.

The EPA disagrees with the second commenter's statement that selection of scrubbing liquid is the only known method of modifying TRS emissions associated with SDT vent gases. The mill which they were discussing had problems with excess TRS emissions and began testing different scrubbing liquids. Initially, they had been using weak white liquor, which is known to remove some polar compounds, such as H_2S. Thus, it is not surprising that TRS emissions increased when water, and various other liquids were substituted. However, the scrubber was installed for removal of PM, not TRS. The key point is that BDT for TRS is aimed at preventing introduction of TRS to vent gases by the dissolving liquid or scrubbing medium.

Both the second and third commenters said that the ranges in their TRS monitoring data were indicative that the proposed standard cannot be met on a consistent basis. The third commenter did not submit enough information for the Agency to draw any conclusions. It is noted that the two tanks to which they referred are not subject to NSPS and the comment letter suggested that water used in the SDT's was not of the quality required by BDT. The second commenter's data showed variation in TRS concentrations for individual samples, but when the data points were averaged, as they would be for a compliance test report, the emission levels were below the proposed TRS limitations.

Two commenters object to relaxing the existing TRS standard for SDT because of one or two failures to achieve compliance. One commenter suggests an alternative of allowing exemptions based upon site-specific studies and a requirement that Best Available Control Technology be employed.

These suggestions are inconsistent with the basis of the NSPS. An emission limit must be set at such a level that any facility which employs BDT can achieve that emission level during a performance test. A facility which was employing BDT failed two performance tests. In selecting an emission limit, variability of available test data must be taken into consideration. The Agency proposed to revise the TRS standard from 0.0084 g/kg BLS to 0.016 g/kg BLS in order that all facilities using BDT can meet the TRS standard.

Lime Kilns

Five different commenters suggest the current TRS standard for lime kilns needs to be revised to reflect the results of continuous monitoring. One commenter says the monitoring data from two of its NSPS facilities indicate that the standard needs to be revised to allow for exceedance of the TRS limit 3 percent of the reporting time to allow for normal variations in operating conditions. The commenter lists four factors which can influence TRS emissions from the kiln stack: (1) Kiln firing conditions; (2) treatment of noncondensable gases; (3) source of water used at the particulate scrubber; and (4) porosity of the mud at the filter (which controls oxidation of the residual sulfide content). This commenter stated that TRS emissions associated with the first three factors are straightforward and the control options are understood, but that the control of mud porosity at the filter is not completely understood.

One commenter stated that the current TRS standard can be met when the kiln and associated systems are operating normally, but that the nature of the process is such that unavoidable irregularities which can affect TRS emissions will occur 10 percent or less of the total operating time. He says that short-term "blips" or "spikes" are adequately reckoned by the averaging time, but that a 4 percent allowance for excess emissions appears reasonable for those infrequent, medium-term TRS excursions which are beyond the control of the operators. The commenter stated he is unaware of any evidence that the use of caustic soda (to control excess emissions) is effective and/or cost effective. He also doubts that lime mud oxidation is a cost-effective technique for controlling excess TRS emissions.

One commenter has been unable to explain variations in data from a certified continuous monitoring system. The commenter stated that 12-hour averages from this particular facility range from 2 to 30 ppmv TRS and the commenter is concerned that it may not be possible to meet the 8 ppmv limit continuously.

One commenter says that as more TRS monitoring systems come on-line, there will be additional information which will be useful in determining whether or not the current standard is appropriate. The commenter suggests that EPA should evaluate available continuous monitoring data from lime kilns equipped with wet scrubbers before making any final decisions on an NSPS.

Many of the comments were prompted by the requirement that lime kilns subject to the NSPS install and operate continuous emission monitors (CEM's) to measure TRS emission by July 20, 1984. After considering the comments, the Agency determined that it would be appropriate to obtain additional data. Subsequently, the first 6 months' CEM data for all 19 lime kilns subject to the NSPS were requested along with associated operational data and design parameters for the lime kilns and lime mud washing systems. The Agency has received additional information for 14 of the 19 lime kilns subject to the NSPS. Of the 14 submitting data, 3 were judged to be using BDT and had CEM data which were accompanied by information needed to ascertain the accuracy of the certification reports. The data from these 3 facilities indicate that the NSPS can be achieved when BDT is implemented.

During the data period, one of the three mills had only one excess emission and the excursion occurred when the addition of caustic was discontinued for testing of the CEM. A second mill, which previously achieved the NSPS TRS limit a high percentage of the time through good mud washing and process contol, began using caustic in recent months. The most recent excess emission reports show no excess emissions. The Agency considers this information to be indicative that caustic addition reduces excess TRS emissions.

Approximately half of the remaining data could not be used in making a decision because either data needed to determine if the CEM's had been properly certified was missing or the information provided showed that the CEM's had histories indicative of maintenance problems. The data from the rest of the mills were suggestive of failure to follow all of the practices which constitute BDT.

In general, the mills that have employed CEM'S on lime kilns for an extended period have been the most successful in continually achieving the NSPS. The EPA believes this shows that the ability to reliably operate CEM's and use the CEM's for process control plays a central role in identifying and preventing those process variations and upsets that cause excess emissions and that such ability is learned over time. The learning time is necessary to allow the owner/operator to identify the process variables that are leading to the periods of excess emissions. These process variables and their impacts on periods of excess emissions will be specific to each mill. The industry continues to believe it is possible in some cases that, even with experience and the use of BDT, there could continue to be periods of excess emissions. Although such a possibility may not be ruled out, the Agency has not received any data which would indicate that such is the case. The Agency expects that, as the operators of these facilities learn to use their CEM's to aid in controlling their processes, the periods of excess emissions caused by process upsets should be significantly reduced when BDT is fully implemented.

Industry representatives have expressed concern that reported excess emissions may be construed as violations of the Clean Air Act. Compliance or noncompliance with the Act is determined by performance testing. A detailed description of the Agency's intended use of CEM data was previously published in the **Federal Register** (43 FR 7568). The overall intent of the requirement to continuously monitor TRS emissions is to provide enforcement agencies with an instrument to determine that BDT has been implemented and is being practiced.

Two comments were received concerning the lime kiln controlled with an ESP which was described in the Proposed Rules. The commenters emphasized the uniqueness of this particular facility, at which an ESP was installed to meet local and State particulate limits that are site specific, and that an exemption should be granted for this facility. One commenter requested that the NSPS TRS limit be revised to require this particular facility to meet a TRS emission limit of 20 ppmv corrected to 10 percent oxygen, on a 12-hour basis, and not to be exceeded more than 2 percent of the time on a quarterly basis. The commenter also said that the stack gases from the ESP would disperse better than those from a venturi scrubber because the gases from the ESP are approximately 180° hotter.

The Agency has reviewed information on the lime kiln which is controlled with an ESP instead of a wet scrubber. Information reviewed by the Agency suggests that this particular facility can control TRS emissions to NSPS levels by making additional improvements in process controls and by raising the temperature of the cold end of the lime kiln by 100° F. During the review, the costs of implementing BDT were examined. These costs included the costs to increase cold end temperatures, and the Agency continues to believe these costs are reasonable.

V. Administrative

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can intelligently and effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and EPA responses to significant comments, the contents of the docket will serve as the record in case of judicial review [section 307(d)(7)(A)].

The effective date of this regulation is May 20, 1986. Section 111 of the Clean Air Act provides that standards of performance or revisions thereof become effective upon promulgation.

As prescribed by Section 111, the promulgation of these standards was preceded by the Administrator's determination (41 FR 42028, dated September 24, 1976) that kraft pulp mills contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. In accordance with Section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and reporting requirements. The reporting requirements in this regulation will be reviewed as required under EPA's sunset policy for reporting requirements in regulations.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any new source standard of performance promulgated under section 111(b) of the Act. An economic impact assessment was prepared for this regulation and for other regulatory alternatives. All aspects of the assessment were considered in the formulation of the standards to insure that cost was carefully considered in determining BDT.

This review was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291 (OMB Control No. 2060–0021). Any comments from OMB to EPA and any EPA response to those comments are available for inspection at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW., Washington, DC 20460.

Under Executive Order 12291, EPA is required to judge whether a regulation is a "major rule" and therefore subject to the requirements of a regulatory impact analysis (RIA). The Agency has determined that this regulation would result in none of the adverse economic effects set forth in Section 1 of the Order as grounds for finding a regulation to be a "major rule." The Agency has, therefore, concluded that this regulation is not a "major rule" under Executive Order 12291.

The Regulatory Flexibility Act of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of a Regulatory Flexibility Analysis in those instances where small business impacts are possible. Since it is possible that some kraft pulp mills qualify as small businesses, the impacts of the standards on small businesses were considered. None of the four criteria which would signify significant impact were met. Because these standards impose no adverse economic impacts, a Regulatory Flexibility Analysis has not been conducted.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that the proposed rule will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 40 CFR Part 60

Air pollution control, Reporting and recordkeeping requirements, Incorporation by reference, Intergovernmental relations, and Paper and paper products industry.

Dated: May 9, 1986.

Lee M. Thomas,
Administrator.

PART 60—[AMENDED]

40 CFR Part 60 is amended as follows:

1. The authority citation for Part 60 continues to read as follows:

Authority: Secs. 101, 111, 114, 301(a), Clean Air Act as amended (42 U.S.C. 7401, 7411, 7414, 7416, 7601).

2. In § 60.280, paragraphs (a) and (b) are revised to read as follows:

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in § 60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

* * * * *

3. In § 60.281, paragraph (e) is revised to read as follows:

§ 60.281 Definitions.

* * * * *

(e) "Brown stock washer system" means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digestion system. Diffusion washers are excluded from this definition.

* * * * *

4. In § 60.283, the introductory text of paragraph (a)(1) is revised and paragraphs (a)(1)(iv), (a)(1)(v), and (a)(4) are revised to read as indicated below:

§ 60.283 Standard for total reduced sulfur (TRS).

(a) * * *

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless the following conditions are met:

* * * * *

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are controlled by a means other than combustion. In this case, this system shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to the actual oxygen content of the untreated gas stream.

* * * * *

(4) From any smelt dissolving tank any gases which contain TRS in excess

of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S).

* * * * *

5. In § 60.284, both the introductory text of paragraph (a)(2) and (b)(1) are revised to read as indicated below and paragraph (c)(4) is added. Additionally, the introductory text of paragraph (d) is revised, paragraph (d)(3) is revised, and paragraph (d)(3)(ii) is revised and add OMB number at the end of the section to read as follows:

§ 60.284 Monitoring of emissions and operations.

(a) * * *

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283(a)(1) (iii) or (iv) apply. These systems shall be located downstream of the control device(s) and the spans of these continuous monitoring system(s) shall be set:

* * * * *

(b) * * *

(1) For any incinerator, a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

* * * * *

(c) * * *

(4) Record once per shift measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) of this section.

* * * * *

(d) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows:

* * * * *

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system periods of excess emissions are:

(i) * * *

(ii) All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 1200 °F, where the provisions of § 60.283(a)(1)(iii) apply.

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(Reporting and recordkeeping requirements are approved by the Office of Management and Budget under Control No. 2060–0021)

[FR Doc. 86–11293 Filed 5–19–86; 8:45 am]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL 2915-4]

Review and Amendment of Standards of Performance for New Stationary Sources; Kraft Pulp Mills

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Standards of performance for kraft pulp mills were proposed on September 24, 1976 (41 FR 42012), and promulgated on February 23, 1978 (43 FR 7568). On January 19, 1984, revisions to the standards of performance for kraft pulp mills were proposed in the **Federal Register** (49 FR 2448). Today's action promulgates these revisions and announces the Agency's decision on other elements of the standard which were reviewed. The revised standards apply to new, modified, and reconstructed kraft pulp mills, for which construction was commenced after September 24, 1976. These standards implement Section 111 of the Clean Air Act and are based on the Administrator's determination that kraft pulp mills cause, or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The intended effect of these standards is to require all new, modified, and reconstructed kraft pulp mills to achieve emission levels reflecting the best demonstrated system of continous emission reduction, considering costs, nonair quality health, and environmental and energy impact.

EFFECTIVE DATE: May 20, 1986.

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice is available only by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

ADDRESSES: *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Kraft Pulp Mills—Background Information for Promulgated Revisions to Standards" [EPA 450/3-85-020]. The BID contains: (1) A summary of all the public comments made on the proposed standards and the Administrator's response to the comments; (2) a summary of the changes made to the standards since proposal; and (3) the final Environmental Impact Statement which summarizes the impacts of the revisions.

Docket. A docket, number A-82-36, containing information considered by EPA in development of the promulgated standards, is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section (A-130), West Tower Lobby, Gallery 1, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT:

For Policy Questions: Mr. Doug Bell, Standards Development Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541-5578.

For Technical Questions: Mr. Kenneth Durkee or Mr. James Eddinger, Industrial Studies Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, telephone number (919) 541-5601.

SUPPLEMENTARY INFORMATION:

I. The Standards

Standards of performance for new sources established under section 111 of the Clean Air Act reflect:

> . . . application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated [section 111(a)(1)].

For convenience, this will be referred to as "best demonstrated technology" or "BDT."

On September 24, 1976, new source performance standards (NSPS) were proposed for kraft pulp mills under section 111 of the Clean Air Act (41 FR 42012). These regulations were promulgated on February 23, 1978 (43 FR 7568). The standards limit emissions of particulate matter (PM) and total reduced sulfur (TRS) from new or modified recovery furnaces, smelt dissolving tanks, lime kilns, digester systems, multiple effect evaporator systems, black liquor oxidation systems, brown stock washer systems, and condensate stripper systems that have been constructed, modified, or reconstructed after September 24, 1976.

The PM emission limits are: 0.10 grams per dry standard cubic meter (g/dscm) at 8 percent oxygen for recovery furnaces; 0.10 grams per kilogram of black liquor solids (dry weight) (g/kg BLS) for smelt dissolving tanks; 0.15 g/dscm at 10 percent oxygen for lime kilns burning gas; and 0.30 g/dscm at 10 percent oxygen for lime kilns burning oil. Visible emissions from recovery furnaces are limited to 35 percent opacity.

The TRS emission limits are: 5 parts per million by volume (ppmv) at 8 percent oxygen from straight kraft recovery furnaces; 25 ppmv at 8 percent oxygen from cross recovery furnaces; 8 ppmv at 10 percent oxygen from lime kilns; and 5 ppmv at the actual oxygen content of the untreated gas stream from digester systems, multiple-effect evaporator systems, brown stock washer systems, black liquor oxidation systems, and condensate stripper systems. The TRS emissions from smelt dissolving tanks are limited to 0.0084 g/kg BLS.

The standards also require continuous monitoring, recordkeeping, and excess emission reporting. The opacity of recovery furnace exhaust gases must be monitored continuously, and a record of these measurements must be maintained. The concentration of TRS emissions from recovery boilers and lime kilns must be monitored continuously and a record of these measurements must be maintained. The incineration temperature of effluent gases from digesters, brown stock washers, multiple-effect evaporators, black liquor oxidizers, or condensate strippers must be monitored. Finally, the gas stream pressure drop and liquid supply pressure for any scrubber controlling emissions from lime kilns or smelt dissolving tanks must be continuously monitored. Records of 12-hour average TRS concentrations and 12-hour oxygen concentrations must be maintained on a daily basis. Quarterly reports of excess TRS emissions, excess opacities, and inadequate incineration temperatures are required as well.

Today's rulemaking promulgates six revisions and two corrections to the standards. These revisions will: (1) Exempt black liquor oxidation systems from the standards; (2) revise the existing TRS standard for smelt dissolving tanks from 0.0084 g TRS per kg of black liquor solids (g TRS/kg BLS) to 0.016 g TRS/kg BLS; (3) revise the units of the TRS standard for smelt dissolving tanks; (4) delete the requirement to monitor the combustion temperature in lime kilns, power boilers, or recovery furnaces; (5) change the frequency of excess emission reports from quarterly to semiannually; and (6) exempt diffusion washers from the TRS standard for brown stock washer systems. The corrections would: (1) Require measurements of temperature, pressure drops and liquid feed rates for control devices which must be monitored must also be recorded; and (2) correct the reference in § 60.284(d)(3)(ii) from § 60.283(a)(1)(ii) to § 60.283(a)(1)(iii). In this second instance, the original standard. erroneously referred to reporting of excess emissions when recovery boilers are used as incineration devices. The corrected standard refers to facilities where incineration devices not subject to Subpart BB are used for incineration of TRS emissions from facilities subject to the standard.

In the overall context of this source category, all of the changes to the existing standards of performance are minor. Nevertheless, they are appropriate because they change the numerical emission limit for smelt dissolving tanks to reflect the performance of BDT, improve the overall cost effectiveness of the existing standards with little increase in TRS emissions, and reduce reporting and recordkeeping requirements.

II. Summary of Environmental, Energy, and Economic Impacts

The revisions will not significantly affect nationwide particulate matter emissions, solid waste generation, water quality, or energy consumption. Deleting the TRS standard for black liquor oxidation (BLO) tanks may increase TRS emissions from the only affected kraft pulp mill by up to 16 tons per year in the fifth year following proposal. The full increase of 16 tons would be equivalent to 42 percent of the mill's controlled TRS emissions, or about 0.5 percent of its uncontrolled emissions. The exemption of diffusion washers from the TRS standard for brown stock washers will cause no increase in TRS emissions. Changing the smelt tank TRS standard will increase TRS emissions by about 6 tons annually in the fifth year following proposal. This projection is based on the assumptions that the affected facility which failed previous tests for compliance with the original NSPS will continue to perform as it has in the past and that one similar affected facility will be constructed in the future. This increase represents 8 percent of a mill's controlled TRS emissions, or about 0.2 percent of its uncontrolled TRS emissions.

There will be a maximum cost savings of $500,000 associated with the removal of the TRS standard for BLO tanks. This projection is based on our finding that one mill may stop controlling TRS emissions from its BLO tank at promulgation of the revised standards. The savings is in operating costs, and has no capital component. The savings in annual costs which will result from exempting diffusion washers from the NSPS is estimated to be $610,000 in the fifth year. There will be no significant cost impacts associated with any of the other revisions to the NSPS.

The environmental, energy, and economic impacts are discussed in greater detail in the BID for the promulgated standards, "Kraft Pulp Mills—Backgound Information for Promulgated Revisions to Standards" [EPA 450/3–85–020].

III. Public Participation

Prior to proposal of the standards, interested parties were advised by public notice in the **Federal Register** (48 FR 12825, March 28, 1983) of a meeting of the National Air Pollution Control Techniques Advisory Committee to discuss the revisions recommended for proposal. This meeting was held on April 27, 1983. The meeting was open to the public and each attendee was given an opportunity to comment on the revisions recommended for proposal. The proposed revisions were published in the **Federal Register** on January 19, 1984 (49 FR 2448). The preamble to the proposed revisions discussed the availability of the BID, "Review of New Source Performance Standards for Kraft Pulp Mills" [EPA 450/3–83–017], which described in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal and, when requested, copies of the BID were distributed to interested parties. To provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed standards, a public hearing was scheduled for February 21, 1984, at Research Triangle Park, North Carolina. A hearing was not held becasue one was not requested. The public comment period was from January 20, 1984, to March 9, 1984.

Twenty-eight (28) comment letters were received relative to the proposed standards of performance for kraft pulp mills. The comments have been carefully considered and, where determined to be appropriate by the Administrator, changes have been made in the proposed standards.

IV. Significant Comments and Changes to the Proposed Standards

Comments on the proposed standards were received from industry, Federal agencies, State and local air pollution control agencies, and trade associations. A detailed discussion of these comments and responses can be found in the BID, which is referred to in the **ADDRESSES** section of this preamble. The summary of comments and responses in the BID serve as the basis for the revisions which have been made to the standards between proposal and promulgation. The major comments and responses are summarized in this preamble. Most of the comment letters contained multiple comments. The comments have been divided into the following areas: Emission Control Technology and Selection of Emission Limits.

Emission Control Technology

Diffusion Washers

Two comments contain the findings and resulting recommendations of a study performed by an industry council to quantify TRS emissions from diffusion washers. That study examined 9 diffusion washer vents and the mean mass emission rate was found to be 0.001 lb., or less, TRS per ton of air dried pulp (TADP). Such emission levels are two orders of magnitude less than those from uncontrolled vacuum drum washer systems. Using the same cost estimating procedures employed by EPA for the case of vacuum drum washer systems, the industry calculated the cost effectiveness (C/E) of further controlling these emissions to be $240,000 per ton of TRS removed. Three commenters said that those findings preclude EPA from reasonably supporting the need to control diffusion washer vent gases on an emission significance or economic basis. They note that there would be no advantage to setting mass emission limits and that imposing measurement and reporting requirements would be burdensome. Too commenters support the above findings and conclusions. One commenter noted that diffusion washers may meet the existing standards without a control device.

One commenter disagrees with the others and says that diffusion washers should not be exempted outright from having TRS controls. This commenter believes each individual source should be required to demonstrate that emissions from its uncontrolled diffusion washers can meet the same TRS standards as controlled vacuum washers.

The study submitted on TRS emissions from diffusion washers has been reviewed by the Agency. The Agency agrees that uncontrolled TRS emissions from diffusion washers are less than 0.001 lb TRS/TADP. This level is orders of magnitude less than that of uncontrolled vacuum drum washers (0.3 lb TRS/TADP) and is also many times lower than the mass equivalent of the NSPS. The equivalent mass emission rate for the 5 ppm NSPS, based on the vacuum drum washer, is about 0.09 lb TRS/TADP. Because of the low mass of TRS emissions controlled and the low air volumes treated, requiring control of TRS emissions from diffusion washers to the 5 ppm TRS level would result in a C/E in the range of $240,000 per ton of TRS removed. Therefore, the Agency has determined that requiring diffusion washers to meet the 5 ppmv TRS standard would be unreasonable.

For several reasons, revision of the NSPS to a mass equivalent TRS standard would also be unreasonable. As the available data indicated, uncontrolled TRS emissions from diffusion washers are many times lower than the mass equivalent of the NSPS. As such, requiring diffusion washers to demonstrate compliance with a mass equivalent NSPS would impose unnecessary costs for testing and reporting requirements. In addition, an EPA reference sampling method would have to be developed and promulgated since the present EPA Reference Method 1 is insufficient for sampling the low velocity, low volume, and cyclic gas stream emitted from a diffusion washer.

Development of a separate standard for TRS emissions from diffusion washers would require a major commitment of Agency resources to study a process which produces very low mass emissions. Such a standard would have to include a control technology which, in this case, would undoubtedly be incineration and the cost has been estimated to be in the range of $240,000 per ton TRS removed. Because projected control costs are high and potential benefits are negligible, the Agency has concluded that development of an NSPS for TRS emissions from diffusion washers is not appropriate.

Noncontact Recovery Furnaces With Wet-Bottom Electrostatic Precipitators (ESP's)

At the time the NSPS were developed, use of the direct contact furnace system was prevalent in the industry and available information indicated that the contacting of furnace flue gases with unoxidized black liquor in direct contact evaporators was causing high levels of TRS emissions. Therefore, the Agency tested direct contact furnaces equipped with BLO systems. Particulate emissions from these sources were controlled by wet-bottom ESP's through which the oxidized black liquor was passed. Also, the Agency tested a noncontact recovery furnace system, which eliminates the contact of flue gas and black liquor altogether, which in turn eliminates the need for BLO equipment. This furnace system had a dry-bottom ESP for control of particulate emissions. As a result of these tests, the BDT for control of TRS emissions from noncontact furnace systems was determined to be maintenance of proper combustion conditions and black liquor firing rates and, for direct contact furnace systems, was determined to be maintenance of proper combustion conditions and oxidation of black liquor. For both furnace types, ESP's were determined to be BDT for achieving the required limits for PM emissions.

Since the development of the NSPS, the paper industry's National Council for Air and Stream Improvement (NCASI) in 1978 investigated the possible use of unoxidized black liquor in wet-bottom ESP's and concluded that use of unoxidized black liquor in wet-bottom ESP's would not cause violations of the TRS emission limit. In 1979, another industry study concluded the wet-bottom ESP's were more reliable and less costly to operate than dry-bottom ESP's that were in use at that time. Following these studies, wet-bottom ESP's utilizing unoxidized black liquor were installed on ten noncontact recovery furnaces subject to the NSPS. In 1982 it became apparent that some of them were having difficulty in achieving the 5 ppmv TRS standard. During the same time period, four noncontact recovery furnaces were installed with dry-bottom ESP's. Two recovery furnaces of the direct contact design were equipped with wet-bottom ESP's which used oxidized black liquor in the bottoms. All six recovery furnaces which installed the technology upon which the NSPS were based have achieved those standards.

In early 1984, when the revisions resulting from the 4-year review were proposed, the extent of the problems with the wet-bottom ESP's and potential corrective measures were not fully understood. The NCASI was then in the midst of a major study which was conducted to identify the causes of TRS release from unoxidized black liquor and to develop means of eliminating excess emissions from the ESP's. In the proposal, the Agency stated that it was reasonable to delay completion of the review of the TRS standard for recovery furnaces long enough to allow NCASI sufficient time to perform its study.

Seven different commenters agreed with the EPA proposal to delay review of the existing TRS standards for recovery furnace systems as they pertain to facilities which have installed wet-bottom ESP's. All agreed that any possible changes which would take into consideration the performance of noncontact recovery furnaces equipped with wet-bottom ESP's using unoxidized black liquor should be delayed until NCASI completed its studies of these systems. One commenter noted that it has been demonstrated that wet-bottom ESP's can achieve the existing TRS standard. They conclude that any changes to the current TRS standard should pertain only to wet-bottom ESP's and that any possible changes should be delayed only until the NCASI study is complete. One commenter said that EPA should resist any change in the existing standards and that EPA should explore the use of non-TRS bearing water in the wet-bottom ESP's.

Since proposal, much work has been done by NCASI and by individual affected firms in an attempt to fully understand and correct the problem. The NCASI study has identified several factors which are contributing to the problem. These include inlet baffling design, liquor temperature, liquor level, degree of agitation, and liquor chemistry. To date, modifications to mitigate the first four factors have been made in most instances where they appeared feasible. The results of the modifications differed from mill to mill and were not always successful for reducing TRS emissions. Similarly, efforts by individual mills to control or modify the chemistry of liquors used in the wet ESP's have given mixed results. After making various combinations of modifications, some facilities have achieved, or have come very close to achieving, the 5 ppmv TRS standard. However, according to industry assessments, several furnaces appear unable to consistently achieve better than 15 ppmv and some appear unable to consistently achieve better than 25 ppmv while using unoxidized black liquor in the ESP.

The EPA has reviewed available data and the steps which industry have taken. It is clear from this that NCASI and individual firms have expended considerable resources in their attempts to identify and correct the causes of TRS release from unoxidized black liquor used in wet-bottom ESP's. The Agency agrees that the recovery furnace TRS standard is probably not consistently achievable at all sources when such liquor is used in the ESP's. However, based on its review of the industry studies, the factors which are causing excess emissions, and of potential remedies, EPA has concluded that the standard for recovery furnace TRS emissions should not be revised. In reaching this conclusion, the Agency recognizes that the decisions to install the wet-bottom precipitators were made based on the available industry data which indicated that the TRS emission limit would not be violated. But, there were other options available and those options were employed at other facilities. Furthermore, retrofit options are available which will allow the sources with wet-bottom ESP's to achieve compliance with the TRS emission limit. For example, two mills have made piping changes which allow them to use fresh water in wet-bottom ESP's and the level of the NSPS for TRS has been achieved. In addition, mills have the option of converting the bottoms of their ESP's from the wet to the dry design. Although each of these options entails a retrofit with annualized costs ranging from $85,000 to $275,000 per mill and the associated TRS reduction could be small, EPA believes the costs of the retrofits are reasonable. When the annualized cost of installing and retrofitting a wet-bottom ESP are compared to the annualized costs of initially installing a dry-bottom ESP, the net difference in estimated annualized costs of retrofitting the wet-bottom ESP are reasonable and range from a savings of $40,000 to a cost of $100,000.

In conclusion, therefore, the Agency believes that changes to the NSPS for kraft recovery furnaces would be inappropriate and that those mills now out of compliance with the TRS standard should take the necessary steps to achieve compliance.

Degradation of Performance of ESP's

Three commenters disagree with the Agency's conclusion in the BID (EPA 450/3-83-017) that data from a 9-year-old ESP show that ESP's can reduce recovery furnace particulate emissions to NSPS levels over a long period of time when they are properly maintained. One commenter operates the ESP to which the three referred and this commenter says the data show that, even with maintenance, the ESP is not capable of achieving NSPS consistently. The commenter also said that it is inappropriate to draw conclusions about long-term performance of ESP's from data obtained from only one ESP.

A second commenter said that the data provided by the previous commenter clearly show an upward trend in emissions of PM with increasing age of the ESP and that EPA's judgment concerning the ability of ESP's to meet NSPS for particulate emissions over the long term is an inappropriate interpretation of data from a single location. The commenter presented long-term data from two other sources with ESP's designed to achieve emission levels similar or NSPS and said the data from all three sources showed an upward trend in particulate emissions with increasing age of the ESP's. The data from all three ESP's also showed that measured emissions, following major rebuilds of the ESP's were significantly higher than those achieved when the precipitators were new. The commenter attributed the increased emissions to such factors as buildups and corrosion in duct work, plenums and turning vanes, which can cause flow maldistributions.

The second commenter maintains that EPA has not thoroughly investigated the ESP degradation issue in its NSPS review. They also say that the Agency has not considered the costs of major rebuilds or lost production due to unscheduled repairs in the cost-effectiveness calculations.

The problem of gradual deterioration of ESP performance was investigated during the NSPS development and again during the NSPS review. During the NSPS development, the ESP vendors indicated that a properly maintained ESP should not deteriorate over the expected life of the unit. Problems encountered are usually due to operating the equipment at conditions for which it was not designed (i.e., higher gas volumes, higher inlet loadings, or lower inlet temperature). The main problem areas are corrosion and wire breakage.

The unit for which EPA obtained long-term particulate data, at the time it was installed, employed a new design which minimized wire breakage. This unit was tested by EPA as part of the data base for the NSPS. Additional data supplied by the State agency during the NSPS development indicated that the unit consistently achieved the NSPS level. During the NSPS review, the operator of this unit was again contacted to obtain information on maintenance costs and ESP performance. The maintenance costs for this unit had increased from 240 man-hours per year to an average of 913 manhours per year. These maintenance costs are higher than the estimate used by the Agency. If it could be shown that all of these costs are attributable to the NSPS, the incremental C/E of the NSPS is $200–$300 per ton, which is still reasonable. However, as noted, it is not clear that the increased maintenance costs are in fact due to the NSPS. The data indicated that after 10 years of operation, the unit was still capable of achieving the NSPS level. It is true, as the one commenter pointed out, that test data indicate that at times the unit has had emissions above the NSPS level. It must be pointed out that this unit is not subject to the NSPS and is only required to achieve a State regulation which is double the NSPS level. Therefore, this unit is maintained to achieve the State level as opposed to the NSPS level. It is the Agency's judgment that this unit could consistently achieve the NSPS if the frequency of maintenance were increased. The Agency's judgment is supported by the data supplied by one commenter which shows the performance of an ESP which is not subject to the NSPS but which is subject to a State standard about 25 percent lower than the NSPS. This latter unit has been operating for 10 years and has consistently achieved the NSPS levels.

The Agency's cost estimates do not include the cost of major rebuilds as was suggested by the commenters. The ESP's were widely used in the kraft pulp industry for recovery of process chemicals prior to establishment of NSPS and none of the information which has been reviewed indicates that major rebuilds are needed more frequently because of NSPS for PM. As a result of NSPS, new ESP's are designed with more plate area and additional maintenance costs for such items as replacement of broken wires would be possible. However, the need for major rebuilds, to repair corrosion damage, for example, is most likely attributable to process parameters, such as the flue gas temperature, and not related to the sizing of the EPS's. Since the NSPS does not affect the frequency of major rebuilds, it would be inappropriate to include the costs of rebuilds in the calculation of control costs.

Selection of Emission Limits

Smelt Dissolving Tanks (SDT)

Five different commenters were in agreement with EPA's decision to raise the TRS standard for SDT. However, they said that the increase should be greater than the one which was proposed. One commenter said that preliminary data from a new mill indicated that the proposed level needed to be doubled. In a follow-up letter, the commenter described the liquids being used in their scrubbers and noted that they planned to try and redirect sulfide-containing recycle streams from the SDT and scrubbers. In a third letter, the commenter said that efforts to modify their piping system to redirect sulfide bearing liquids away from the smelt tanks had been successful and that they had passed compliance tests. Thus, they withdrew their request for a higher TRS limit than that which was proposed.

A second commenter sent two letters describing experience at two of its mills. The commenter said that selection of the scrubbing liquid is the only known method of modifying TRS emissions associated with smelt tank vent gases. The commenter has examined the use of alternative scrubbing liquids and said that TRS emissions exceeded the standard even when fresh water was used in the scrubbers at one of the mills. They said their best results at the other mill were obtained when both the smelt tank scrubber and the lime kiln mud washer showers were operated on fresh water, which the commenter considers an artificial condition for that particular mill. The commenter submitted additional continuous monitoring data and said the new data showed variations similar to those in previously submitted information.

A third commenter said the proposed TRS level is a move in the right direction, but that two of its facilities cannot meet that level on a consistent basis. The commenter said that various scrubbing media had been tried but that no controllable process or control technology operating conditions had been identified which could limit TRS emissions from smelt tank vents. This commenter said its data (from 50 hours of continuous monitoring) supported a TRS limit well above the proposed level.

Two comments by industry trade associations supported the first three commenters' observations and comments.

Emissions of TRS compounds are governed by the concentration of reduced sulfur compounds either in the smelt from the recovery furnace or in the water in the smelt tank. Additional TRS may be introduced if liquids contaminated with TRS compounds are introduced to the scrubbers used for control of PM. There is no means of controlling the introduction of reduced sulfur compounds via the smelt from the recovery furnace. However, the introduction of additional TRS compounds to the vent gases can be prevented, substantially reduced, by the selection of liquids to be used in the tanks and scrubbers. Preventing the introduction of TRS-contaminated liquids to the SDT system is the basis of BDT, which is, "to use a liquid that is low in sulfides and TRS compounds—such as fresh water or recycled water from the lime mud washer—in the smelt tank and particulate control device" (49 FR 2448). The date base used in the review to revise NSPS for TRS from 0.0084 g/kg BLS to 0.016 g/kg BLS includes two test reports from one mill which failed to comply with the 0.0084 g/kg emission limit. The operators of the mill indicated that they had used fresh water in their mud washers and that the weak wash had been used in both the smelt tank and scrubbers. Use of these types of liquids is considered to be BDT for reducing TRS emissions. They then experimented with various liquids in the scrubber, including fresh water. Since no reasons for the higher TRS emissions could be identified, and since the sources were applying BDT, the emission limit for TRS emissions was proposed to be raised to 0.016 g/kg BLS to reflect the results of these compliance tests.

Information supplied by the first commenter showed that relatively small flows of TRS-contaminated recycle streams were being introduced to the weak wash storage tanks and subsequently to the SDT's and scrubbers. The operators of the mill were reluctant to remove the recycle streams because they did not want to increase either water usage or the amount of wastewater to be treated. When the mill used BDT and removed the TRS contaminated liquids from the smelt dissolving system, they did pass tests for compliance with the current TRS standard. After passing the test, the commenter withdrew his initial comment that the TRS limit should be greater than 0.016 g/kg BLS.

The data supplied by the second commenter for one of their mills showed that they had been using contaminated condensate in their SDT scrubber recycle system. When the condensate was replaced with fresh water, TRS emissions began to drop. Later data from the same source showed that use of boiler blowdown (which is very low in residual sulfides) in the system reduced TRS emissions to NSPS levels. The commenter said that the best results were obtained when lime mud shower (which produces the weak wash used in the SDT) and SDT scrubber were operated on fresh water, but that this represents an artificial condition established solely to minimize TRS emissions. They say that operating in this manner causes an unusually high hydraulic loading on the effluent treatment system. The artificial condition described for the plant is what the Agency considers to be BDT. While the plant may not operate this way now, the Agency has concluded that using fresh water, or other liquids low in TRS compounds, to reduce TRS emissions is technically feasible and reasonable from a cost standpoint. The Agency continues to believe that if BDT is implemented, the TRS limit of 0.016 g TRS/kg BLS can be met.

The EPA disagrees with the second commenter's statement that selection of scrubbing liquid is the only known method of modifying TRS emissions associated with SDT vent gases. The mill which they were discussing had problems with excess TRS emissions and began testing different scrubbing liquids. Initially, they had been using weak white liquor, which is known to remove some polar compounds, such as H_2S. Thus, it is not surprising that TRS emissions increased when water, and various other liquids were substituted. However, the scrubber was installed for removal of PM, not TRS. The key point is that BDT for TRS is aimed at preventing introduction of TRS to vent gases by the dissolving liquid or scrubbing medium.

Both the second and third commenters said that the ranges in their TRS monitoring data were indicative that the proposed standard cannot be met on a consistent basis. The third commenter did not submit enough information for the Agency to draw any conclusions. It is noted that the two tanks to which they referred are not subject to NSPS and the comment letter suggested that water used in the SDT's was not of the quality required by BDT. The second commenter's data showed variation in TRS concentrations for individual samples, but when the data points were averaged, as they would be for a compliance test report, the emission levels were below the proposed TRS limitations.

Two commenters object to relaxing the existing TRS standard for SDT because of one or two failures to achieve compliance. One commenter suggests an alternative of allowing exemptions based upon site-specific studies and a requirement that Best Available Control Technology be employed.

These suggestions are inconsistent with the basis of the NSPS. An emission limit must be set at such a level that any facility which employs BDT can achieve that emission level during a performance test. A facility which was employing BDT failed two performance tests. In selecting an emission limit, variability of available test data must be taken into consideration. The Agency proposed to revise the TRS standard from 0.0084 g/kg BLS to 0.016 g/kg BLS in order that all facilities using BDT can meet the TRS standard.

Lime Kilns

Five different commenters suggest the current TRS standard for lime kilns needs to be revised to reflect the results of continuous monitoring. One commenter says the monitoring data from two of its NSPS facilities indicate that the standard needs to be revised to allow for exceedance of the TRS limit 3 percent of the reporting time to allow for normal variations in operating conditions. The commenter lists four factors which can influence TRS emissions from the kiln stack: (1) Kiln firing conditions; (2) treatment of noncondensable gases; (3) source of water used at the particulate scrubber; and (4) porosity of the mud at the filter (which controls oxidation of the residual sulfide content). This commenter stated that TRS emissions associated with the first three factors are straightforward and the control options are understood, but that the control of mud porosity at the filter is not completely understood.

One commenter stated that the current TRS standard can be met when the kiln and associated systems are operating normally, but that the nature of the process is such that unavoidable irregularities which can affect TRS emissions will occur 10 percent or less of the total operating time. He says that short-term "blips" or "spikes" are adequately reckoned by the averaging time, but that a 4 percent allowance for excess emissions appears reasonable for those infrequent, medium-term TRS excursions which are beyond the control of the operators. The commenter stated he is unaware of any evidence that the use of caustic soda (to control excess emissions) is effective and/or cost effective. He also doubts that lime mud oxidation is a cost-effective technique for controlling excess TRS emissions.

One commenter has been unable to explain variations in data from a certified continuous monitoring system. The commenter stated that 12-hour averages from this particular facility range from 2 to 30 ppmv TRS and the commenter is concerned that it may not be possible to meet the 8 ppmv limit continuously.

One commenter says that as more TRS monitoring systems come on-line, there will be additional information which will be useful in determining whether or not the current standard is appropriate. The commenter suggests that EPA should evaluate available continuous monitoring data from lime kilns equipped with wet scrubbers before making any final decisions on an NSPS.

Many of the comments were prompted by the requirement that lime kilns subject to the NSPS install and operate continuous emission monitors (CEM's) to measure TRS emission by July 20, 1984. After considering the comments, the Agency determined that it would be appropriate to obtain additional data. Subsequently, the first 6 months' CEM data for all 19 lime kilns subject to the NSPS were requested along with associated operational data and design parameters for the lime kilns and lime mud washing systems. The Agency has received additional information for 14 of the 19 lime kilns subject to the NSPS. Of the 14 submitting data, 3 were judged to be using BDT and had CEM data which were accompanied by information needed to ascertain the accuracy of the certification reports. The data from these 3 facilities indicate that the NSPS can be achieved when BDT is implemented.

During the data period, one of the three mills had only one excess emission and the excursion occurred when the addition of caustic was discontinued for testing of the CEM. A second mill, which previously achieved the NSPS TRS limit a high percentage of the time through good mud washing and process contol, began using caustic in recent months. The most recent excess emission reports show no excess emissions. The Agency considers this information to be indicative that caustic addition reduces excess TRS emissions.

Approximately half of the remaining data could not be used in making a decision because either data needed to determine if the CEM's had been properly certified was missing or the information provided showed that the CEM's had histories indicative of maintenance problems. The data from the rest of the mills were suggestive of failure to follow all of the practices which constitute BDT.

In general, the mills that have employed CEM'S on lime kilns for an extended period have been the most successful in continually achieving the NSPS. The EPA believes this shows that the ability to reliably operate CEM's and use the CEM's for process control plays a central role in identifying and preventing those process variations and upsets that cause excess emissions and that such ability is learned over time. The learning time is necessary to allow the owner/operator to identify the process variables that are leading to the periods of excess emissions. These process variables and their impacts on periods of excess emissions will be specific to each mill. The industry continues to believe it is possible in some cases that, even with experience and the use of BDT, there could continue to be periods of excess emissions. Although such a possibility may not be ruled out, the Agency has not received any data which would indicate that such is the case. The Agency expects that, as the operators of these facilities learn to use their CEM's to aid in controlling their processes, the periods of excess emissions caused by process upsets should be significantly reduced when BDT is fully implemented.

Industry representatives have expressed concern that reported excess emissions may be construed as violations of the Clean Air Act. Compliance or noncompliance with the Act is determined by performance testing. A detailed description of the Agency's intended use of CEM data was previously published in the **Federal Register** (43 FR 7568). The overall intent of the requirement to continuously monitor TRS emissions is to provide enforcement agencies with an instrument to determine that BDT has been implemented and is being practiced.

Two comments were received concerning the lime kiln controlled with an ESP which was described in the Proposed Rules. The commenters emphasized the uniqueness of this particular facility, at which an ESP was installed to meet local and State particulate limits that are site specific, and that an exemption should be granted for this facility. One commenter requested that the NSPS TRS limit be revised to require this particular facility to meet a TRS emission limit of 20 ppmv corrected to 10 percent oxygen, on a 12-hour basis, and not to be exceeded more than 2 percent of the time on a quarterly basis. The commenter also said that the stack gases from the ESP would disperse better than those from a venturi scrubber because the gases from the ESP are approximately 180° hotter.

The Agency has reviewed information on the lime kiln which is controlled with an ESP instead of a wet scrubber. Information reviewed by the Agency suggests that this particular facility can control TRS emissions to NSPS levels by making additional improvements in process controls and by raising the temperature of the cold end of the lime kiln by 100° F. During the review, the costs of implementing BDT were examined. These costs included the costs to increase cold end temperatures, and the Agency continues to believe these costs are reasonable.

V. Administrative

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can intelligently and effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and EPA responses to significant comments, the contents of the docket will serve as the record in case of judicial review [section 307(d)(7)(A)].

The effective date of this regulation is May 20, 1986. Section 111 of the Clean Air Act provides that standards of performance or revisions thereof become effective upon promulgation.

As prescribed by Section 111, the promulgation of these standards was preceded by the Administrator's determination (41 FR 42028, dated September 24, 1976) that kraft pulp mills contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. In accordance with Section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and reporting requirements. The reporting requirements in this regulation will be reviewed as required under EPA's sunset policy for reporting requirements in regulations.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any new source standard of performance promulgated under section 111(b) of the Act. An economic impact assessment was prepared for this regulation and for other regulatory alternatives. All aspects of the assessment were considered in the formulation of the standards to insure that cost was carefully considered in determining BDT.

This review was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291 (OMB Control No. 2060-0021). Any comments from OMB to EPA and any EPA response to those comments are available for inspection at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW., Washington, DC 20460.

Under Executive Order 12291, EPA is required to judge whether a regulation is a "major rule" and therefore subject to the requirements of a regulatory impact analysis (RIA). The Agency has determined that this regulation would result in none of the adverse economic effects set forth in Section 1 of the Order as grounds for finding a regulation to be a "major rule." The Agency has, therefore, concluded that this regulation is not a "major rule" under Executive Order 12291.

The Regulatory Flexibility Act of 1980 requires the identification of potentially adverse impacts of Federal regulations upon small business entities. The Act specifically requires the completion of a Regulatory Flexibility Analysis in those instances where small business impacts are possible. Since it is possible that some kraft pulp mills qualify as small businesses, the impacts of the standards on small businesses were considered. None of the four criteria which would signify significant impact were met. Because these standards impose no adverse economic impacts, a Regulatory Flexibility Analysis has not been conducted.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that the proposed rule will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 40 CFR Part 60

Air pollution control, Reporting and recordkeeping requirements, Incorporation-by-reference, Intergovernmental relations, and Paper and paper products industry.

Dated: May 9, 1986.

Lee M. Thomas,

Administrator.

PART 60—[AMENDED]

40 CFR Part 60 is amended as follows:

1. The authority citation for Part 60 continues to read as follows:

Authority: Secs. 101, 111, 114, 301(a), Clean Air Act as amended (42 U.S.C. 7401, 7411, 7414, 7416, 7601).

2. In § 60.280, paragraphs (a) and (b) are revised to read as follows:

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in § 60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

* * * * *

3. In § 60.281, paragraph (e) is revised to read as follows:

§ 60.281 Definitions.

* * * * *

(e) "Brown stock washer system" means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digestion system. Diffusion washers are excluded from this definition.

* * * * *

4. In § 60.283, the introductory text of paragraph (a)(1) is revised and paragraphs (a)(1)(iv), (a)(1)(v), and (a)(4) are revised to read as indicated below:

§ 60.283 Standard for total reduced sulfur (TRS).

(a) * * *

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless the following conditions are met:

* * * * *

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are controlled by a means other than combustion. In this case, this system shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to the actual oxygen content of the untreated gas stream.

* * * * *

(4) From any smelt dissolving tank any gases which contain TRS in excess

of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S).

* * * * *

5. In § 60.284, both the introductory text of paragraph (a)(2) and (b)(1) are revised to read as indicated below and paragraph (c)(4) is added. Additionally, the introductory text of paragraph (d) is revised, paragraph (d)(3) is revised, and paragraph (d)(3)(ii) is revised and add OMB number at the end of the section to read as follows:

§ 60.284 Monitoring of emissions and operations.

(a) * * *

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283(a)(1) (iii) or (iv) apply. These systems shall be located downstream of the control device(s) and the spans of these continuous monitoring system(s) shall be set:

* * * * *

(b) * * *

(1) For any incinerator, a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

* * * * *

(c) * * *

(4) Record once per shift measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) of this section.

* * * * *

(d) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows:

* * * * *

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system periods of excess emissions are:

(i) * * *

(ii) All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 1200 °F, where the provisions of § 60.283(a)(1)(iii) apply.

* * * * *

(Reporting and recordkeeping requirements are approved by the Office of Management and Budget under Control No. 2060–0021)

[FR Doc. 86–11293 Filed 5–19–86; 8:45 am]

BILLING CODE 6560-50-M

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

CHAMPION INTERNATIONAL CORPORATION
NON-CONDENSABLE GAS HANDLING SYSTEM
ESCAMBIA COUNTY

OPERATION PERMIT

NO. A017-127829

DATE OF ISSUANCE

January 30, 1987

Norman Richards

NORMAN RICHARDS, Ph.D.
Assistant District Manager

DATE OF EXPIRATION

January 1, 1992

DER FORM PERM 11-40

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT
160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

ROBERT V. KRIEGEL
DISTRICT MANAGER

PERMITTEE:

Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987
Expiration Date: January 1, 1992
County: Escambia
Latitude/Longitude: 30°36'20"N/87°19'26"W
Section/Township/Range: 15/1N/31W
Project: Non-Condensable Gas Handling System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The above named applicant, hereinafter called 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:

Operation of a non-condensable gas handling system which collects non-condensed gases containing total reduced sulfur (TRS) compounds. These gases come from three sources, which are:

1. Twelve batch digesters - processed through two blow tanks, a primary condenser and a secondary condenser. These TRS emissions are partially controlled by #2 Mill White Liquor Scrubber with final control by incineration in the lime kiln.

2. A Kamyr continuous digester - processed through three flush tanks, a stripper reboiler, and a condensate stripper. These TRS emissions are partially controlled by a white liquor scrubber with final control by incineration in the lime kiln.

3. Two multiple effect evaporators. TRS emissions from these evaporators are partially controlled by a white liquor scrubber and then combined with the TRS emissions from batch digesters at the #2 Mill White Liquor Scrubber.

The three sources are schematically shown in drawing 470-5-005 submitted as Attachment I of the application for this permit. Attachment II describes the various potential vents in this system which are the subject of compliance with Florida Administrative Code Rule 17-2.600(4)(c)1.a.

Located: south of State Road 184, 1/4 mile west of U.S. 29, Cantonment

PERMITTEE:
Champion International
Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: A017-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

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.

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.

PERMITTEE:
Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

GENERAL CONDITIONS:

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 noncompliance; 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.

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.

PERMITTEE:
Champion International
Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

GENERAL CONDITIONS:

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

a. Upon request, the permittee shall furnish all records and plans 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.

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 measurement;
- the person responsible for performing the sampling or measurement;
- 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.

14. 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:

15. Gaseous emissions from these sources shall be collected and incinerated in a lime kiln or calciner meeting the requirements of Florida Administrative Code Rule 17-2.600(4)(c)5. Such a lime kiln is permitted under AO17-105854. With issuance of this permit, reference of these sources as part of the description of AO17-105854 shall be deleted as redundant.

16. TRS emissions from these sources are prohibited except in the contingency events outlined in Florida Administrative CodeRule 17-2.600(4)(c)1.a. In accordance with this Rule, the permittee shall submit an acceptable contingency plan to the Department. This plan shall be submitted prior to February 12, 1987 or it shall be addressed by a plan and scheduled for achieving final compliance in accordance with Florida Administrative Code Rule 17-2.960(1)(b) prior to February 12, 1987.

S ADDENDUM I

17. For emissions inventory purposes, the TRS emissions are estimated that 0.0 pounds per hour and 0.0 tons per year will be required to be met on the date of final compliance.

Also for emissions inventory purposes, the TRS emissions are estimated at 0.0 pounds per hour and 0.0 tons per year during the interim period (prior to final compliance).

18. The permanent source identification numbers for these sources are:

10/17/0042/53	Batch Digesters
10/17/0042/54	Kamyr Continuous Digester & Condensate Stripper
10/17/0042/55	Two Multiple Effect Evaporators

Please cite the appropriate number on all test reports and other correspondence specific to a permitted point source.

PERMITTEE:
Champion International Corporation

I.D. Number: 10/17/0042/53,54&55
Permit/Certification Number: AO17-127829
Date of Issue: JAN 30 1987

Expiration Date: January 1, 1992

SPECIFIC CONDITIONS:

Expiration Date:

January 1, 1992

Issued this 30th day of January, 1987.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Norman Richards

NORMAN RICHARDS, Ph.D.
Assistant District Manager

Cantonment, Florid 33-0087
904 968-2121

Champion
Champion International Corporation

November 25, 1986

Mr. Jack Preece
State of Florida
Department of Environmental Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

Subject: Application for Interim Permit to Operate a Non-Condensible Gas Handling System

Dear Mr. Preece:

Attached please find subject application and a check for $100, the stipulated price for issuing the Operating Permit. You indicated that a responsible person other than a registered engineer could sign Section IB (page 2) of the application. David Arceneaux, who is thoroughly familiar with this system, has signed this section.

Sincerely,

Justus C. Tracy

Justus C. Tracy
Environmental Engineer

JCT/dj

Attachment

bc: Charles Ayer
David Arceneaux
Ed Clem
Ted Crane
Dave Hearne

Champion
Champion International Corporation

DATE MONTH DAY YEAR	INVOICE NUMBER	DIV-LOC	REFERENCE	GROSS AMOUNT	DISCOUNT	NET AMOUNT
11 25 86	Interim Permit 30-005-012-600-027-000			$100.00		$100.00
46067500		No.	TOTALS			

DETACH AT PERFORATION BEFORE DEPOSITING

Champion
Champion International Corporation
PENSACOLA, FLORIDA

No. 028033

63-568
631

BARNETT BANK

DATE
11-25-86

$100.00

AMOUNT
$100.00

PAY TO THE ORDER OF
State of Florida
Department of Environmental Regulation

Frank Kneisel

249

[redacted] [redacted] [redacted]

Best Available Copy

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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: Paper Plant [ ] New[1] [XX] Existing[1]

APPLICATION TYPE: [ ] Construction [XX] Operation [ ] Modification

COMPANY NAME: Champion International Corporation COUNTY: Escambia

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) Non-Condensible Gas (NCG Handling System

SOURCE LOCATION: Street Muscogee Road City Cantonment

UTM: East 469.0 North 3385.8

Latitude 30 ° 36 ' 20 "N Longitude 87 ° 19 ' 26 "W

APPLICANT NAME AND TITLE: Theodore P. Crane, Jr. - VP, Operations Manager

APPLICANT ADDRESS: P. O. Box 87, Cantonment, Florida 32533

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Champion International

I certify that the statements made in this application for a Operation Permit 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: Theodore P. Crane

Theodore P. Crane, Jr.-VP, Operations Mgr.
Name and Title (Please Type)

Date: ________ Telephone No. 904-968-2121

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)

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? No

   a. If yes, has "offset" been applied? N/A

   b. If yes, has "Lowest Achievable Emission Rate" been applied? N/A

   c. If yes, list non-attainment pollutants. N/A

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants? N/A

   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.

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)
Lime Kiln	TRS	N/A	N/A	N/A

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Included in Lime Kiln Application			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

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.

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.

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.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

5. (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).

CHAMPION INTERNATIONAL
PENSACOLA MILL

NON-CONDENSIBLES SYSTEM
DESCRIPTION OF POTENTIAL VENTS
(See Dwg. No. 470-5-005)

Batch System Potential Vents

1A and 1B (Pressure):
These are pressure relief valves for each blow tank set to relieve at 5 psig. These prevent overpressurization of the blow tanks and primary condenser.

2A and 2B (Pressure/Vacuum):
These are pressure/vacuum relief valves that would relieve pressure at 5 psig to prevent overpressurizing the primary condenser and secondary condenser. They also would relieve vacuum to protect equipment.

3 (Manual):
This is a manual valve that could be used to vent the total batch digester gas flow. This vent would only be used if the #2 Mill white liquor scrubber is inoperable.

4 (Pressure):
This pressure relief valve would open if the gas line to the lime kiln were to overpressurize. Normal pressure in this line is 15" W.C.

5 (Motorized):
This valve would be used to vent gases away from the lime kiln after scrubbing. This is also the valve interlocked with the flame safety device on the lime kiln; a flame failure on the lime kiln would initiate a vent opening.

Evaporator Gases Potential Vents

6 (Manual):
This valve would be used to vent the evaporator non-condensible gases after scrubbing from #1 set of evaporators. This would only take place when #2 Mill white liquor scrubber is inoperable.

7 (Manual):
Same as above for #2 set of evaporators.

Continuous System Potential Vents

8A and 8B (Pressure):
These are pressure relief valves that would open if the gas line to the continuous system reboiler were to overpressurize. These valves relieve at 10 psig presently.

9 (Manual):
This manual valve could be used to vent the continuous system gases after scrubbing and before the turpentine condenser if it were inoperable.

10 (Manual):
This manual valve could also relieve continuous system gases after scrubbing and after turpentine condenser. This valve is normally open to provide dilution to the continuous stream being conveyed to the lime kiln for incineration.

11 (Open Vent):
This vent is the outlet for rectifier overhead and continuous system gases at the lime kiln. Motorized valves, as arranged on the drawing, would open to this atmospheric vent only on a flame failure at the kiln.

Note: Across every 100' of gas line on the batch system is a rupture disc that could relieve the pressure of an upset condition in that line.

ATTACHMENT III

Potential emissions estimates are based on an expected production rate of 1400 tons ADP/day of factors for "Uncontrolled" TRS emissions from digester, turpentine condenser, and multiple-effect evaporators are from Table 10.1.2-1 of AP 42. The factor for "Uncontrolled" TRS emissions from the condensate stripper was from Table 5-1 of EPA-450/2-78-003b.

Digesters:	1400 tons ADP/day x 1.6# TRS/ton ADP	= 2240#/Day
Turpentine Condensers*:	1400 tons ADP/day x 0.51# TRS/ton ADP	= 714#/Day
Evaporators:	1400 tons ADP/day x 0.5# TRS/ton ADP	= 700#/Day
Condensate Stripper:	1400 tons ADP/day X 2.0# TRS/ton ADP	= 2800#/Day
Total Potential TRS		6454#/Day

*Assumes the same factor for digester-turpentine condenser applies to Kamyr-stripper vent gasses.

6454 lb/day ÷ 24 hrs/day = 269 lb/hr.

E01. A21

P.O. Box 87
Cantonment, Flori 533-0087
904 968-2121

Champion
Champion International Corporation

September 23, 1986

Mr. Jack Preece
Department of Environmental Regulation
Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794

Subject: Non-Condensible Gas Handling System
Interim Permit

Dear Mr. Preece:

Enclosed is a Flow Schematic of subject system identifying all known potential-vent points. An accompanying written description of the function and/or normal control of emissions at each point is included.

Champion is aware of certain inadequacies of the present system. As we discussed, a company task force has been activated with the ultimate goal of improving the system to meet applicable FDER regulations.

If you have questions or need further information, please let me know.

Sincerely,

Justus C. Tracy

Justus C. Tracy
Environmental Engineer

JCT/dj

Enclosures

cc: David Arceneaux
Charles Ayer
Ed Clem
Ted Crane
Dave Hearne
Mohan Gupta
Dale Stillwell

CHAMPION INTERNATIONAL
PENSACOLA MILL

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(See Dwg. No. 470-5-005)

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4 (Pressure):

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7 (Manual):

Same as above for #2 set of evaporators.

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These are pressure relief valves that would open if the gas line to the continuous system reboiler were to overpressurize. These valves relieve at 10 psig presently.

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Note: Across every 100' of gas line on the batch system is a rupture disc that could relieve the pressure of an upset condition in that line.

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.

[illegible]

Howard L Rhodes

R.E. [illegible]

Terry Cole (for St Joe)

Lewis [illegible]

John M [illegible]